

**NFPA®**

# 901

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Standard Classifications for  
Fire and Emergency Services  
Incident Reporting

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**2021**



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## NFPA® 901

### Standard Classifications for

## Fire and Emergency Services Incident Reporting

### 2021 Edition

This edition of NFPA 901, *Standard Classifications for Fire and Emergency Services Incident Reporting*, was prepared by the Technical Committee on Fire Reporting. It was issued by the Standards Council on October 5, 2020, with an effective date of October 25, 2020, and supersedes all previous editions.

This edition of NFPA 901 was approved as an American National Standard on October 25, 2020.

### Origin and Development of NFPA 901

As the objectives of fire defense management have narrowed from the control of conflagrations early in the 20th century to the control of fires in rooms, the need for uniform information about fire incidents and an effective method of collecting and using that information has become evident.

In 1938, a fire reporting system prepared by NFPA was published by the International City Managers Association. This system served as a start toward the uniform reporting of fire incident information.

In 1951, the NFPA Committee on Fire Casualty Statistics was formed. The report of that committee was adopted as NFPA 3 in May 1953. In its introduction, that document contained the following statement: "The absence of accurate and detailed statistics on fire casualties has hindered attempts by educational and other means to reduce the number of deaths and injuries from fire."

In 1961, the NFPA Board of Directors, after two years of surveying the need, called a national conference on fire reporting. On the recommendation of that conference, an NFPA committee was formed in February 1963 to devise a uniform and useful system of fire reporting adaptable to the needs of the fire service in the United States and Canada. From 1963 to 1969, the committee strived to develop a uniform language for fire defense management and issued tentative documents as work progressed.

In 1969, the five tentative documents were combined and officially adopted as the first edition of NFPA 901, *Coding System for Fire Reporting*. The document was updated in 1971 with minor revisions. With the 1973 edition, the title was changed to *Uniform Coding for Fire Protection*, and data elements were added to report on mobile property and the details of fire casualties (deaths and injuries). By the 1976 edition, the committee was getting feedback from persons using the data elements in reporting systems and was able to make modifications to improve the understanding of the data elements. Data elements were also added to report structural fire defenses and their performance during incidents.

In 1981, data elements were added to enhance the reporting of wildland fires, firefighter casualties, and pre-hospital medical care administered. The 1986 edition introduced data elements for reporting on hazardous material. Those data elements were expanded in the 1991 edition to a comprehensive set of hazardous materials data elements. The 1995 edition reorganized the document editorially to better group the data elements in relation to each other. Discussion of how the data elements were intended to be used was added, and classifications within some of the data elements were revised to reflect changing needs when capturing or using data. Also, the title for the 1995 edition was changed to *Standard Classifications for Incident Reporting and Fire Protection Data*.

The 2001 edition added several new data elements and extensively revised others based on a detailed analysis by the US Fire Administration and the National Fire Information Council of the way that data are collected and used by fire departments. Some of the changes split the data elements so that a data element could focus on a single question or issue rather than multiple issues, as had sometimes been the case in the past. New technology available for data capture and storage no

longer placed limitations on the record size and data manipulation, which had sometimes been obstacles in the past.

The 2006 edition was revised to comply with the *Manual of Style for NFPA Technical Committee Documents*. Various sections were updated editorially for clarification.

The 2011 edition was a reconfirmation of the 2006 edition. There were no substantive edits or changes made to the document.

The 2016 edition featured changes to align the language and information with the National Fire Incident Reporting System (NFIRS). An effort was made to tie the two more closely together, and additional tables were added to reflect changes in the NFIRS.

The 2021 edition features a complete reworking of the document. Tables have been consolidated, eliminated, and moved to the annex to make NFPA 901 more usable. New chapters were added, notably on fire investigation, to bring the standard in line with NFPA 921, *Guide for Fire and Explosion Investigations*. Special attention was paid to the current uses of reporting and the structures that make the most sense.

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NOTE: Membership on a committee shall not in and of itself constitute an endorsement of the Association or any document developed by the committee on which the member serves.

**Committee Scope:** This Committee shall have primary responsibility for documents on standard methods of compiling fire experience data by the fire service. The main purposes of this Committee are to develop standard occupancy and cause classification for use by cities and states in the reporting of fires, to suggest other useful information that needs to be collected, and to develop standard forms for these purposes.

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## NFPA 901

## Standard Classifications for

## Fire and Emergency Services Incident Reporting

2021 Edition

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**NOTICE:** An asterisk (\*) following the number or letter designating a paragraph indicates that explanatory material on the paragraph can be found in Annex A.

A reference in brackets [ ] following a section or paragraph indicates material that has been extracted from another NFPA document. Extracted text may be edited for consistency and style and may include the revision of internal paragraph references and other references as appropriate. Requests for interpretations or revisions of extracted text shall be sent to the technical committee responsible for the source document.

Information on referenced and extracted publications can be found in Chapter 2 and Annex B.

## Chapter 1 Administration

## 1.1 Scope.

**1.1.1** This document describes and defines data elements and classifications used by fire and emergency services to report incidents, including fire, life safety, and response activity data.

**1.1.2** This document does not provide guidelines for a reporting system or related forms.

**1.1.3\*** A report completed in accordance with this document is not to be used as a fire or explosion investigation report. If a separate fire or explosion investigation report is not completed, consideration shall be given to including data elements listed in Table A.1.1.3 in the narrative of the incident report.

## 1.2 Purpose.

**1.2.1** This document provides a common language for the collection of pre-incident information, fire and other emergency incident data, and post-incident damage assessments.

**1.2.2** This standard defines numeric classifications for various data elements that describe fire protection and fire service information.

## 1.3 Application.

**1.3.1** This standard applies to the preliminary reports of fire or emergency services agencies.

**1.3.2** This standard does not apply to reports for fire or explosion investigations.

## Chapter 2 Referenced Publications

**2.1 General.** The documents or portions thereof listed in this chapter are referenced within this standard and shall be considered part of the requirements of this document.

**2.2 NFPA Publications.** National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.

NFPA 30, *Flammable and Combustible Liquids Code*, 2021 edition.

NFPA 72®, *National Fire Alarm and Signaling Code*®, 2019 edition.

NFPA 80A, *Recommended Practice for Protection of Buildings from Exterior Fire Exposures*, 2017 edition.

NFPA 220, *Standard on Types of Building Construction*, 2021 edition.

NFPA 1021, *Standard for Fire Officer Professional Qualifications*, 2020 edition.

NFPA 1033, *Standard for Professional Qualifications for Fire Investigator*, 2014 edition.

NFPA 5000®, *Building Construction and Safety Code*®, 2021 edition.

## 2.3 Other Publications.

**2.3.1 ASTM Publications.** ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.

ASTM D323, *Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method)*, 2015a edition.

**2.3.2 US Government Publications.** US Government Publishing Office, 732 North Capitol Street, NW, Washington, DC 20401-0001.

*Code Manual*, National Crime Information Center (NCIC), US Department of Justice, Federal Bureau of Investigation.

ERG RSPA-5800.6, *Emergency Response Guidebook*.

Title 49, Code of Federal Regulations, Part 173: Subpart C — Definitions, Classification and Packaging for Class 1; Subpart D — Definitions, Classification, Packing Group Assignments and Exceptions for Hazardous Materials Other Than Class 1 and Class 7; and Subpart I — Class 7 (Radioactive) Materials.

**2.3.3 US Postal Service Publications.** US Postal Service, 475 L'Enfant Plaza SW, Washington, DC 20260-6800.

Publication 65, *National Five-Digit ZIP Code and Post Office Directory*, 1999 edition.

## 2.3.4 Other Publications.

*Merriam-Webster's Collegiate Dictionary*, 11th edition, Merriam-Webster, Inc., Springfield, MA, 2003.

## 2.4 References for Extracts in Mandatory Sections.

NFPA 30, *Flammable and Combustible Liquids Code*, 2018 edition.

NFPA 53, *Recommended Practice on Materials, Equipment, and Systems Used in Oxygen-Enriched Atmospheres*, 2016 edition.

NFPA 68, *Standard on Explosion Protection by Deflagration Venting*, 2018 edition.

NFPA 101®, *Life Safety Code*®, 2018 edition.

NFPA 221, *Standard for High Challenge Fire Walls, Fire Walls, and Fire Barrier Walls*, 2018 edition.

NFPA 306, *Standard for the Control of Gas Hazards on Vessels*, 2019 edition.

NFPA 400, *Hazardous Materials Code*, 2019 edition.

NFPA 921, *Guide for Fire and Explosion Investigations*, 2017 edition.

NFPA 1051, *Standard for Wildland Firefighting Personnel Professional Qualifications*, 2016 edition.

NFPA 1141, *Standard for Fire Protection Infrastructure for Land Development in Wildland, Rural, and Suburban Areas*, 2017 edition.

NFPA 5000®, *Building Construction and Safety Code*®, 2018 edition.

## Chapter 3 Definitions

**3.1 General.** The definitions contained in this chapter shall apply to the terms used in this standard. Where terms are not defined in this chapter or within another chapter, they shall be defined using their ordinarily accepted meanings within the context in which they are used. *Merriam-Webster's Collegiate Dictionary*, 11th edition, shall be the source for the ordinarily accepted meaning.

### 3.2 NFPA Official Definitions. (Reserved)

### 3.3 General Definitions.

**3.3.1 Alarm.** Any notification made to a fire or emergency services organization that a situation exists or could exist that requires a response.

**3.3.2 Arc.** A high-temperature luminous electric discharge across a gap or through a medium such as charred insulation. [921, 2017]

**3.3.3 Area of Origin.** A structure, part of a structure, or general geographic location within a fire scene, in which the "point of origin" of a fire or explosion is reasonably believed to be located. [921, 2017]

**3.3.4 Automatic.** Capable of performing a function without the necessity of human intervention. [101, 2018]

**3.3.5\* Backfire.** A fire set along the inner edge of a fire control line to consume the fuel in the path of a wildland fire or change the direction of force of the fire's convection column.

**3.3.6 Building.** A structure enclosed with walls and a roof and used to enclose an occupancy.

**3.3.7 Building Fire.** See 3.3.91, Structure Fire.

**3.3.8 Burning.** See 3.3.13, Combustion.

**3.3.9 Census Data.** Enumeration and demographic population data available by statistical areas from a governmental agency.

**3.3.10 Char.** Carbonaceous material that has been burned or pyrolyzed and has a blackened appearance. [921, 2017]

**3.3.11 Combustible.** Capable of undergoing combustion. [921, 2017]

**3.3.12 Combustible Liquid.** Any liquid that has a closed-cup flash point at or above 100°F (37.8°C). [306, 2019]

**3.3.13 Combustion.** A chemical process of oxidation that occurs at a rate fast enough to produce heat and usually light in the form of either a glow or flame. [921, 2017]

**3.3.14 Complex.** See 3.3.48, General Property Use.

**3.3.15\* Confine a Fire.** To restrict a fire within determined boundaries established either prior to the fire or during the fire. For wildland fires, the strategy employed in appropriate responses by which a fire perimeter is managed by a combination of direct and indirect actions and use of natural topographic features, fuel, and weather factors.

**3.3.16 Contain a Fire.** To take suppression action that is expected to stop the fire spread; for wildland fires, signifies that a control line has been completed around the fire and any associated spot fires.

**3.3.17 Contents Fire.** See 3.3.91, Structure Fire.

**3.3.18 Emergency Medical Responder (EMR).** A person who has trained to at least advanced first aid and has additional training but is not an EMT.

**3.3.19 Emergency Medical Services (EMS).** Organization providing patient services that might include assessment, treatment, and other prehospital procedures.

**3.3.20 Emergency Medical Technician (EMT).** A person who has completed a certified basic life support program and holds a current certificate or license.

**3.3.21 Emergency Rescue Vehicle.** A vehicle that is not designed for patient transport, but that contains tools, advanced life support equipment, and personnel capable of providing extrication and emergency medical care.

**3.3.22 Emergency Scene.** The area encompassed by the incident and the surrounding area needed by the emergency forces to stage apparatus and mitigate the incident.

**3.3.23 Explosion.** The sudden conversion of potential energy (chemical or mechanical) into kinetic energy with the production and release of gases under pressure, or the release of gas under pressure. These high-pressure gases then do mechanical work such as moving, changing, or shattering nearby materials. [921, 2017]

**3.3.24 Exposure.** Any fixed or mobile property threatened by a fire or other hazard in any other fixed or mobile property.

**3.3.25\* Exposure Fire.** A fire in a building, structure, vehicle, or outside property resulting from a fire outside that building, structure, vehicle, or outside property.

**3.3.26 Fatality.** An injury that is fatal or becomes fatal within one year of the incident.

**3.3.27 Fire.** A rapid oxidation process, which is a chemical reaction resulting in the evolution of light and heat in varying intensities. [921, 2017]



**3.3.28\* Fire Area.** The boundary of fire effects within a scene in which the area of origin will be located.

**3.3.29 Fire Barrier Wall.** A wall, other than a fire wall, having a fire resistance rating.

**3.3.30 Fire Casualty.** A person who is injured or dies at the scene of a fire, whether from natural causes, direct involvement with the fire, or an accident sustained while involved in fire control, a rescue attempt, or escaping from the dangers of the fire.

**3.3.31 Fire Contained.** That point in time when fire spread is stopped but the fire is not necessarily under control.

**3.3.32 Fire Control Line.** Comprehensive term for all constructed or natural barriers and treated fire edges used to control a wildland fire.

**3.3.33\* Fire Damage.** The total damage to a building, structure, vehicle, natural vegetation cover, or outside property resulting from a fire and the act of controlling that fire.

**3.3.34 Fire Extinguished.** See 3.3.37, Fire Out.

**3.3.35 Fire Ground.** See 3.3.22, Emergency Scene.

**3.3.36 Fire or Emergency Services Personnel.** All employees, whether career or volunteer, of a fire or emergency services organization who are assigned or might be assigned to perform duties at emergency incidents.

**3.3.37 Fire Out.** The point in time when there is no longer any sign of active combustion.

**3.3.38 Fire-Rated Assembly.** An assembly (e.g., wall, floor, or roof) that has been tested using standard test methods and has received at least a 1-hour fire resistance rating.

**3.3.39 Fire-Rated Compartment.** A complete compartment surrounded on all sides by fire-rated assemblies having a 1-hour fire resistance rating or more.

**3.3.40\* Fire Under Control.** The point in time when a fire is suppressed and no longer threatens destruction of additional property.

**3.3.41 Fire Wall.** A wall separating buildings or subdividing a building to prevent the spread of fire and having a fire resistance rating and structural stability. [221, 2018]

**3.3.42 Fixed Object.** An object, device, or appliance that is fastened or secured at a specific location.

**3.3.43 Fixed Property Use.** See 3.3.88, Specific Property Use.

**3.3.44 Flames.** A body or stream of gaseous material involved in the combustion process and emitting radiant energy at specific wavelength bands determined by the combustion chemistry of the fuel.

**3.3.45 Flammable Liquid.** Any liquid that has a closed-cup flash point below 100°F (37.8°C), as determined by the test procedures and apparatus set forth in Section 4.4 of NFPA 30, and a Reid vapor pressure that does not exceed an absolute pressure of 40 psi (276 kPa) at 100°F (37.8°C), as determined by ASTM D323, *Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method)*. Flammable liquids are classified according to Section 4.3 of NFPA 30. [30, 2018]

**3.3.46 Fuel.** Any material that will maintain combustion under specified environmental conditions. [53, 2016]

**3.3.47 Gas.** The state of matter characterized by complete molecular mobility and unlimited expansion; used synonymously with the term *vapor*. [68, 2018]

**3.3.48 General Property Use.** The actual general (overall) use of land or space under the same management or ownership, or within the same legal boundaries, including any structures, vehicles, or other appurtenances thereon. (See Section 6.3.)

**3.3.49 Grade.** Reference plane representing the elevation of finished ground level adjoining the building at the main entrance, used synonymously with the term *ground level*.

**3.3.50 Ground Fault.** An unintended current that flows outside the normal circuit path, such as (a) through the equipment grounding conductor; (b) through conductive material in contact with lower potential (such as earth), other than the electrical system ground (metal water or plumbing pipes, etc.); (c) or through a combination of these ground return paths. [921, 2017]

**3.3.51 Hazardous Material.** A chemical or substance that is classified as a physical hazard material or a health hazard material, whether the chemical or substance is in usable or waste condition. [400, 2019]

**3.3.52 Heat of Ignition.** The heat energy that brings about ignition. [921, 2017]

**3.3.53 Hostile Fire.** A fire that becomes uncontrollable or breaks out of where it was intended to be.

**3.3.54 Human Exposure.** Potential for injury or death to humans.

**3.3.55 Ignitable Liquid.** Any liquid or the liquid phase of any material that is capable of fueling a fire, including a flammable liquid, combustible liquid, or any other material that can be liquefied and burned.

**3.3.56 Ignition.** The process of initiating self-sustained combustion. [921, 2017]

**3.3.57\* Incident.** An event, natural or human-caused, that requires organized response, mitigation, or recovery actions by a fire or emergency services organization to protect life, property, and public health and safety and to minimize any disruption of governmental, social, and economic services.

**3.3.58 Incident Record.** The official file on an incident.

**3.3.59\* Incident Report.** A document prepared by fire or emergency services personnel on a particular incident.

**3.3.60\* Industrialized Unit.** A factory-built structure, designed for either permanent site installation or as a portable unit, and constructed to the requirements of a model building code or other state construction regulations.

**3.3.61 Injury.** Physical damage to a person suffered as the result of an incident that requires (or should require) treatment by a practitioner of medicine, a registered EMT, or a paramedic within one year of the incident (regardless of whether treatment was actually received) or that results in at least one day of restricted activity immediately following the incident.

**3.3.62 Lighter.** Flame-producing product commonly used to light cigarettes, cigars, and pipes, although it can be used to light other materials.

**3.3.62.1 Novelty Lighter.** Lighters that depict or resemble articles commonly recognized as appealing to or intended for use by children under 5 years of age.

**3.3.63 Liquid.** A material that has a vapor pressure not exceeding 40 psia (2068.6 mm Hg) at 100°F (37.8°C).

**3.3.64 Manual.** As applied to fire protection devices, a device or system activated by human action.

**3.3.65 Manufactured Home.** A structure, transportable in one or more sections, that is 8 body-ft (2.44 m) or more in width or 40 body-ft (12.2 m) or more in length in the traveling mode or, when erected on site, is 320 ft<sup>2</sup> (28 m<sup>2</sup>) or more; which is built on a chassis and designed to be used as a dwelling, with or without a permanent foundation, when connected to the required utilities, including the plumbing, heating, air-conditioning, and electrical systems contained therein. (Also see 3.3.60, *Industrialized Unit*.)

**3.3.66\* Material First Ignited.** The fuel that is first set on fire by the heat of ignition.

**3.3.67 Mobile.** The ability to move 150 ft (45 m) in 90 seconds unaided.

**3.3.68 Mobile Intensive Care Unit.** An ambulance-type unit with space, equipment, supplies, communications, and treatment capabilities necessary for supportive, definitive, and therapeutic emergency medical care for the ill or injured either on site or during transport.

**3.3.69 Mobile Property Type.** Property that was designed to be movable in relation to fixed property regardless of whether the property is currently movable, for example, vehicles, ships, and airplanes. (See 6.5.5.)

**3.3.70 Modular Structure.** See 3.3.60, *Industrialized Unit*.

**3.3.71 Mop-up.** The act of making a wildland fire scene safer after the fire has been controlled, such as extinguishing or removing burning material along or near the control line, felling snags, and trenching logs to prevent rolling. (For structure fires, see 3.3.77, *Overhaul*.)

**3.3.72 Non-Fire Service Personnel.** All persons, including police, utility company employees, non-fire service medical personnel, and civilians, who are involved with an incident but who are not fire service personnel.

**3.3.73 Not Occupied.** An area with no persons present, though contents or equipment might be present, which indicate that the structure is not vacant.

**3.3.74\* Occupancy.** The purpose for which a building or other structure, or part thereof, is used or intended to be used. [5000, 2018]

**3.3.75\* Occupied.** An area with persons present.

**3.3.76 Open Fire.** Any fire other than a structure or mobile property fire that freely interacts with the external environment.

**3.3.77 Overhaul.** A firefighting term involving the process of final extinguishment of all traces of fire after the main body of the fire has been knocked down. (For wildland fires, see 3.3.71, *Mop-up*.)

**3.3.78\* Overheat.** Destruction of material by heat without self-sustained combustion.

**3.3.79 Panelized Structure.** See 3.3.60, *Industrialized Unit*.

**3.3.80 Paramedic.** A medical technician who has received extensive training and is certified in advanced life support and emergency medicine.

**3.3.81 Prescribed Fire (Burning).** Any fire ignited by management actions to meet specific objectives. [1051, 2016]

**3.3.82\* Rekindle.** A return to flaming combustion after apparent but incomplete extinguishment. [921, 2017]

**3.3.83 Reportable Fire.** Any hostile fire that comes to the attention of an agency keeping fire records, whether discovered in progress or discovered after extinguishment.

**3.3.84 Response.** The deployment of a fire or emergency service organization resource to an incident.

**3.3.85\* Scorch.** Discoloring (browning or blackening) of a material, a characteristic of the overheat condition.

**3.3.86 Short Circuit.** An abnormal connection of low resistance between normal circuit conductors where the resistance is normally much greater. This is an overcurrent situation but it is not an overload.

**3.3.87 Smoldering.** Combustion without flame, usually with incandescence and smoke. [921, 2017]

**3.3.88 Specific Property Use.** The purpose for which a specific space, structure, or portion of a structure is used by the owner, tenant, or occupant of the space.

**3.3.89 Story.** The portion of a building located between the upper surface of a floor and the upper surface of the floor or roof next above. [5000, 2018]

**3.3.90\* Structure.** That which is built or constructed and limited to buildings and nonbuilding structures as defined herein. [5000, 2018]

**3.3.91\* Structure Fire.** Any fire inside, on, under, or touching a structure.

**3.3.92 Toxic Material.** A material that produces a lethal dose or a lethal concentration within any of the following categories: (1) a chemical or substance that has a median lethal dose (LD<sub>50</sub>) of more than 50 mg/kg but not more than 500 mg/kg of body weight when administered orally to albino rats weighing between 200 g and 300 g each; (2) a chemical or substance that has a median lethal dose (LD<sub>50</sub>) of more than 200 mg/kg but not more than 1000 mg/kg of body weight when administered by continuous contact for 24 hours, or less if death occurs within 24 hours, with the bare skin of albino rabbits weighing between 2 kg and 3 kg each, or albino rats weighing 200 g to 300 g each; (3) a chemical or substance that has a median lethal concentration (LC<sub>50</sub>) in air of more than 200 parts per million but not more than 2000 parts per million by volume of gas or vapor, or more than 2 mg/L but not more than 20 mg/L, of mist, fume, or dust when administered by continuous inhalation for 1 hour, or less if death occurs within 1 hour, to albino rats weighing between 200 g and 300 g each. [5000, 2018]

**3.3.93 Vacant.** A space having no persons, furnishings, or equipment present.

**3.3.94 Wildland.** Land in an uncultivated, more or less natural state and covered by timber, woodland, brush, and/or grass.

**3.3.95\* Wildland Fire.** An unplanned and uncontrolled fire spreading through vegetative fuels, including any structures or other improvements thereon. [1141, 2017]

## Chapter 4 Objectives

### 4.1 Abbreviations for States and Provinces.

**4.1.1 US States.** Abbreviations for states shall be consistent with the Federal Information Processing Standard (FIPS) as listed in Table 4.1.1.

**4.1.2 US Territories and Possessions.** Abbreviations for US territories and possessions shall be consistent with FIPS as listed in Table 4.1.2.

**4.1.3 Canadian Provinces.** Abbreviations for Canadian provinces shall follow the Canada Post as listed in Table 4.1.3.

**4.1.4 Mexico.** When it is necessary to record addresses in Mexico, the abbreviation "MX" shall be used in place of a state abbreviation.

**4.2 Abbreviations for Street Types.** For street type or street suffix abbreviations, the US Postal Service's Publication 65, *National Five-Digit ZIP Code and Post Office Directory*, shall be used.

**4.3 Objectives.** Systematic methods shall be available for the routine collection, processing, and use of significant local information.

**4.3.1** The objectives of a uniform reporting system shall be as follows:

- (1) To provide for the collection of data required for legal record purposes and control of the fire problem
- (2) To provide local fire service management and decision makers with information to indicate trends; to measure the effectiveness of fire prevention, fire suppression, and emergency mitigation procedures currently being used; and to indicate those areas that could require further attention
- (3) To provide a pre-fire inventory of property in a fire service district so that future needs for fire protection resources and codes or regulations can be anticipated and potential problems corrected before a fire
- (4) To provide uniform data to regional, national, and international fire and emergency organizations for the following aims:
  - (a) To make the full extent of the fire and emergency problem known
  - (b) To reveal facts that require action on these levels
  - (c) To guide the effective development and administration of codes and standards
  - (d) To guide fire prevention, fire protection, emergency medical treatment, and hazardous materials handling research

**4.3.2** A common set of definitions for reporting incident and other fire protection data, together with a method for systematic data collection, processing, and information use, shall comprise a complete reporting system.

**4.4 Guiding Concepts for Reporting Systems.** Reporting systems shall use a uniform set of definitions and a uniform data classification structure.

**Table 4.1.1 US State Abbreviations**

State	FIPS Code	Abbreviation
Alabama	01	AL
Alaska	02	AK
Arizona	04	AZ
Arkansas	05	AR
California	06	CA
Colorado	08	CO
Connecticut	09	CT
Delaware	10	DE
District of Columbia	11	DC
Florida	12	FL
Georgia	13	GA
Hawaii	15	HI
Idaho	16	ID
Illinois	17	IL
Indiana	18	IN
Iowa	19	IA
Kansas	20	KS
Kentucky	21	KY
Louisiana	22	LA
Maine	23	ME
Maryland	24	MD
Massachusetts	25	MA
Michigan	26	MI
Minnesota	27	MN
Mississippi	28	MS
Missouri	29	MO
Montana	30	MT
Nebraska	31	NE
Nevada	32	NV
New Hampshire	33	NH
New Jersey	34	NJ
New Mexico	35	NM
New York	36	NY
North Carolina	37	NC
North Dakota	38	ND
Ohio	39	OH
Oklahoma	40	OK
Oregon	41	OR
Pennsylvania	42	PA
Rhode Island	44	RI
South Carolina	45	SC
South Dakota	46	SD
Tennessee	47	TN
Texas	48	TX
Utah	49	UT
Vermont	50	VT
Virginia	51	VA
Washington	52	WA
West Virginia	54	WV
Wisconsin	55	WI
Wyoming	56	WY

### 4.4.1 Commitment.

**4.4.1.1** A reporting system shall be based on the commitment of the entire organization.

**Table 4.1.2 US Territories and Possessions Abbreviations**

Territory or Possession	FIPS Code	Abbreviation
American Samoa	60	AS
Guam	66	GU
Federated States of Micronesia	64	FM
Marshall Islands	68	MH
Northern Mariana Islands	69	MP
Palau	70	PW
Puerto Rico	72	PR
US Minor Outlying Islands	74	UM
Virgin Islands	78	VI
Canal Zone	07	CZ
Department of Defense	—	DD
Native American Tribal Authority	—	NA
Other	—	OO

**Table 4.1.3 Canadian Provinces Abbreviations**

Province	Abbreviation
Alberta	AB
British Columbia	BC
Manitoba	MB
New Brunswick	NB
Newfoundland	NF
Northwest Territory	NT
Nova Scotia	NS
Nunavut	NU
Ontario	ON
Prince Edward Island	PE
Quebec	PQ
Saskatchewan	SK
Yukon	YT

**4.4.1.2** Personnel shall be trained on the purposes, benefits, and procedures of a reporting system.

#### **4.4.2 Simplicity.**

**4.4.2.1\*** A reporting system shall be based on a single incident record for each fire service incident.

**4.4.2.2** Each report shall be geared to what a person can gather within his or her normal duties.

**4.4.3 Raise Questions.** Reporting systems shall reveal areas for action and areas for additional study.

**4.4.4\* Report Completion.** The original report(s) shall be completed by the person who gathered the data.

**4.4.5 Report All Incidents.** Every incident shall be reported regardless of type or extent.

#### **4.5 Fact Finding.**

##### **4.5.1 Purpose.**

**4.5.1.1** The traditional legal function of reporting incidents shall be a written narrative of the basic facts or an automated system from which data can be retrieved on demand.

**4.5.1.2** To serve as input to a fire reporting system, an incident report shall be clearly structured and use uniform definitions and terminology.

**4.5.2\* Pre-Incident Data.** Pre-incident data shall contain information about the property, its location, the use of the property, the size and construction of any structures on the property, available fire protection features, and known hazards.

##### **4.5.3\* The Incident Report.**

**4.5.3.1** The reporting agency shall establish in its administrative policy whether information gathered initially at the scene and included in reports is to be considered preliminary or final.

**4.5.3.2** Preliminary information shall be subject to updates and supplemental reports based on additional investigation.

##### **4.6\* Data Processing.**

**4.6.1** Once data is received, it shall be processed into a report useful for legal, planning, and management purposes.

**4.6.2** Reports shall be checked for accuracy and completeness.

**4.7 Agency-Specific Classifications.** Data shall be collected according to standard classifications to allow data from multiple departments to be merged or to allow data to be contributed to a state or national database.

##### **4.8 Other Data.**

**4.8.1\* Numeric Information.** Where possible, data elements shall be recorded directly with numbers.

**4.8.2\* Text.** Useful incident data that cannot be realistically classified by or reduced to numbers shall be entered as text.

## **Chapter 5 Incident Identification and Location**

### **5.1 Administration.**

**5.1.1 Purpose.** The purpose of the data elements identified by this chapter is to provide sufficient information to uniquely describe each incident and response.

#### **5.1.2 Application.**

**5.1.2.1** The data elements are intended to uniquely identify an incident response by a fire or emergency services organization.

**5.1.2.2** The data elements are to be used for both pre-incident and post-incident data collection efforts.

### **5.2 Incident Number.**

**5.2.1** The “incident number” data element shall be a unique, sequential number assigned to an incident to assure that no two incidents to which an individual fire department responded in a given year have the same incident number.

**5.2.2** The incident number shall be used to correlate all reports and materials concerning the incident.

**5.3 Shift.** The “shift” data element shall be the designation of the shift that was on duty or on call when the incident was reported and responded to the incident.

## 5.4 Incident Events.

**5.4.1 Incident reports** shall include the date and time of the incident and the incident number.

**5.4.1.1\*** The date shall be formatted as YYYYMMDD.

**5.4.1.2\*** The time shall be formatted as HHMMSS.

### 5.4.2 Event Times.

#### 5.4.2.1 Event Start Time.

**5.4.2.1.1** The event start time shall be the time of ignition or the start of the event in the incident chronology.

**5.4.2.1.2** The time shall be estimated as accurately as possible.

**5.4.2.2 Detection (Discovery) Time.** The detection (discovery) time shall be the moment at which a person becomes aware of danger or an incident or the moment at which an automatic detector closes its contacts and sounds an alarm.

**5.4.2.3 Report (Alarm) Time.** The report (alarm) time shall be the time at which the dispatch or alarm center responsible for dispatching a fire or emergency services organization first learns of the incident.

**5.4.2.4 Dispatch Time.** The dispatch time shall be the time an alarm answered at the communications center is transmitted to an emergency response unit(s) in the field.

**5.4.2.5 En Route Time.** The en route time shall be the time at which the resource(s) or apparatus begins its response to the incident.

#### 5.4.2.6 Arrival Time.

**5.4.2.6.1** The arrival time shall be the time at which the resource(s) or apparatus arrives at the scene of an incident.

**5.4.2.6.2** Arrival times shall be tracked for each responding unit.

**5.4.2.7 First Action Time.** The first action time shall be the time at which control or mitigation activities begin.

**5.4.2.8 Agent Application Time.** The agent application time shall be the time at which the extinguishing agent first contacts the flames.

**5.4.2.9\* Containment Time.** The containment time shall be the time at which control lines or natural barriers surround a fire or the fire spread is stopped.

**5.4.2.10 Control (Knock-Down) Time.** The control (knock-down) time shall be the time at which the commanding officer believes the fire is sufficiently surrounded and suppressed that it no longer threatens further spread or destruction of additional property.

**5.4.2.11 Fire Out (Blackout) Time.** The fire out (blackout) time shall be the time at which there is no open flame or glow of burned material.

**5.4.2.12 Scene Release Time.** The scene release time shall be the time at which all actions by the fire service have ceased and the scene has been released to the property owner, resident, or other entity.

**5.4.2.13 In-Service Time.** The in-service time shall be the time at which a specific resource is ready to respond to an alarm.

**5.4.2.14 Tracking.** Fire and emergency service organizations shall track the dispatch time, arrival time, and in-service times for each resource or apparatus dispatched to the incident.

**5.5 Incident Location.** The incident location shall be the geographic designation of an incident, described as an address or as latitude and longitude.

### 5.5.1 Property Address.

**5.5.1.1\* Street Address.** The address of the property shall establish its legal location in the community.

#### 5.5.1.2 City, State, and Postal (ZIP) Code.

**5.5.1.2.1** The city, state, and ZIP code of the property shall be recorded. *(See 4.1.1 for state abbreviations.)*

**5.5.1.2.2** The postal or ZIP code shall be recorded for all incidents to allow for linking incident data with demographic data available by ZIP code.

**5.5.2\* Geographical Coordinates.** Latitudinal and longitudinal coordinates shall be recorded.

**5.5.3 Census Tract.** The census tract number shall be referenced.

### 5.5.4 District.

#### 5.5.4.1 First Due Response Zone.

**5.5.4.1.1** A first due response zone shall be the designation of the fire department response area.

**5.5.4.1.2** First due response zones shall be recorded.

**5.5.4.2 Automatic Aid Response.** Responses occurring between two or more fire or emergency services organizations for immediate joint response on first alarms shall be known as automatic aid responses.

**5.5.4.3 Mutual Aid Response.** Responses occurring between two or more fire or emergency services organizations for immediate joint response on first alarms shall be known as automatic aid responses.

**5.5.4.4 Demand Zone.** Demand zones shall be areas within which a particular type of demand is placed on the fire service.

**5.5.4.5 Parcel Number.** Parcel numbers, where available, shall be recorded for incident locations.

**5.5.4.6 Property Number.** Property numbers (i.e., addresses) shall be recorded for incident locations.

#### 5.5.4.7 Structure Identifier.

**5.5.4.7.1** If there is more than one structure on the property, each structure shall be uniquely identified by a different structure number.

**5.5.4.7.2** The property number shall remain the same for all structures on the same property.

**5.5.4.8 Floor and Unit.** Floor information and unit or suite information, where applicable, shall be uniquely identified.

**5.6 Business, Tenant, or Occupant.** The name of the business, tenant, or occupant of the space within the property shall be recorded.

**5.7 Property Owner.** The identification, address, and contact information of the owner of the property shall be recorded.

## 5.8 Fire Service Personnel.

**5.8.1 Officer in Charge.** The name of the officer on scene and in charge of the incident shall be recorded.

**5.8.2 Member Making Report.** The name of the fire department member who completed the incident report shall be recorded.

## Chapter 6 Property Use

### 6.1 Administration.

**6.1.1 Purpose and Application.** The purpose of the data elements outlined in this chapter is to provide a uniform way to identify property and how it is used. These data elements can be used to identify property, whether fixed or mobile, in both a pre-incident and a post-incident data system. Pre-incident data collection might be for property inventory files, code enforcement files, pre-fire plan files, or any application requiring the identification and use of property.

**6.1.2\* Special Definitions.** A list of special terms used in this chapter follows:

- (1) General Property Use. See 3.3.48.
- (2) Mobile Property Type. See 3.3.69.
- (3) Specific Property Use. See 3.3.88.

**6.2 Limitations.** The data elements in this chapter classify the use of the property only. This corresponds in many situations to the occupancy of a structure or portion thereof. They do not identify the configuration of buildings or other important details of a property such as access, ownership, size, or internal weaknesses in construction or fire defenses. For example, property used for storage of a product shall be shown for that use whether the storage is inside or outside.

### 6.3 General Property Use.

**6.3.1** The "general property use" designation shall capture data on the overall use of property so that all specific uses of segments of that property are linked to its general use.

**6.3.2\*** If a portion of the general property is leased, managed, and maintained as a separate property, it shall be treated as a separate general property use for reporting purposes.

**6.3.3\* General Property Use Coding Structure.** Where data on general property use is to be coded, the two-digit coding structure provided in 6.3.3.1 through 6.3.3.9 shall be used.

**6.3.3.1 Assembly Property (1).** For assembly properties, the following coding structure shall be used:

- (1) Fixed use amusement and recreation places (11), as follows:
  - (a) Bowling establishment — 111
  - (b) Billiard center — 112
  - (c) Amusement center — 113
  - (d) Ice rink — 114
  - (e) Roller rink — 115
  - (f) Swimming facility — 116
  - (g) Fixed use amusement and recreation places not able to be classified further — 110
- (2) Variable use amusement and recreation places (12), as follows:
  - (a) Ballroom, gymnasium, dance hall — 121

- (b) Exhibition hall, exposition hall — 122
    - (c) Arena, stadium — 123
    - (d) Playground or outdoor area with fixed recreational equipment — 124
    - (e) Variable use amusement and recreation places not able to be classified further — 120
  - (3) Places of worship and funeral parlors (13), as follows:
    - (a) Place of worship — 131
    - (b) Funeral parlor, chapel — 134
    - (c) Places of worship and funeral parlors not able to be classified further — 130
  - (4) Clubs (14), as follows:
    - (a) City club — 141
    - (b) Country club — 142
    - (c) Yacht club — 143
    - (d) Casino, gaming or gambling place — 144
    - (e) Clubs not able to be classified further — 140
  - (5) Libraries, museums, and courtrooms (15), as follows:
    - (a) Library — 151
    - (b) Museum, art gallery — 152
    - (c) Historic building — 153
    - (d) Memorial structure, monument — 154
    - (e) Courtroom — 155
    - (f) Legislative hall — 156
    - (g) Libraries, museums, and courtrooms not able to be classified further — 150
  - (6) Eating and drinking places (16), as follows:
    - (a) Restaurant — 161
    - (b) Nightclub — 162
    - (c) Tavern — 163
    - (d) Lunchroom, drive-in — 164
    - (e) Eating and drinking places not able to be classified further — 160
  - (7) Passenger terminals (17), as follows:
    - (a) Airport passenger terminal — 171
    - (b) Helipoint, helistop — 172
    - (c) Bus passenger terminal — 173
    - (d) Street-level rail terminal — 174
    - (e) Underground rail terminal — 175
    - (f) Elevated rail terminal — 176
    - (g) Marine passenger terminal — 177
    - (h) Passenger terminals not able to be classified further — 170
  - (8) Theaters and studios (18), as follows:
    - (a) Legitimate theater — 181
    - (b) Auditorium, concert hall — 182
    - (c) Motion picture theater — 183
    - (d) Drive-in motion picture theater — 184
    - (e) Radio, TV studio — 185
    - (f) Motion picture studio — 186
    - (g) Theaters and studios not able to be classified further — 180
  - (9) Other assembly properties (10) not able to be classified further — 100
- 6.3.3.2 Education or Day Care Property (2).** For education or day care properties, the following coding structure shall be used:
- (1) Nonresidential schools (21), as follows:
    - (a) Nursery school — 211
    - (b) Elementary school — 213
    - (c) Junior high school — 214



- (d) High school — 215
- (e) Schools, non-adult, other — 210
- (2) Residential schools (22), as follows:
  - (a) Residential school classroom building — 221
  - (b) Residential schools not able to be classified further — 220
- (3) Trade and business schools other than high school or college (23), as follows:
  - (a) Vocational, trade school — 231
  - (b) Business school — 232
  - (c) Specialty school — 233
  - (d) Rehabilitation center where attendance is by choice — 234
  - (e) Trade and business schools other than high school or college not able to be classified further — 230
- (4) Colleges and universities (24) not able to be classified further — 240
- (5) Day care facilities (25), as follows:
  - (a) Day care in commercial property or as a dedicated facility — 254
  - (b) Day care associated with residential property, licensed — 255
  - (c) Day care associated with residential property, unlicensed — 256
  - (d) Day care facilities not able to be classified further — 250
- (6) Other educational or day care properties (20) not able to be classified further — 200

#### 6.3.3.3 Health Care or Detention and Correctional Property

(3). For health care or detention and correctional properties, the following coding structure shall be used:

- (1) Nursing homes (31), as follows:
  - (a) Facility, licensed by the state, providing 24-hour nursing care for four or more persons — 311
  - (b) Nursing home not able to be classified further — 310 *[for facilities without 24-hour nursing staff, see 6.3.3.4(5)]*
- (2) Limited care facilities (32), as follows:
  - (a) Mental retardation (MR)/development disability facility — 321
  - (b) Alcohol or substance abuse center where individuals are incapable of self-preservation — 322
  - (c) Limited care facilities not able to be classified further — 320
- (3) Hospitals (33), as follows:
  - (a) Medical, psychiatric, pediatric, or hospital-type infirmary, including specialty hospitals, accredited or licensed by a state — 331
  - (b) Hospices — 332
  - (c) Hospital and hospital-type facilities not able to be classified further — 330
- (4) Ambulatory care facilities (34), as follows:
  - (a) Clinic, including outpatient clinics and freestanding emergency medical facilities where four or more patients could be rendered temporarily incapable of self-preservation — 341
  - (b) Office of an oral surgeon, dentist, or doctor — 342 *[for facilities with fewer than four patients incapable of self-preservation, see 6.3.3.5(9)(c)]*
  - (c) Hemodialysis unit — 343

- (d) Ambulatory care facility not able to be classified further — 340
- (5) Other health care facilities (35) not able to be classified further — 350
- (6) Care of the physically restrained (36), as follows:
  - (a) Prison, cell block for men — 361
  - (b) Prison, cell block for women — 362
  - (c) Juvenile detention facility — 363
  - (d) Adult detention facility — 364
  - (e) Police station — 365
  - (f) Vocational rehabilitation center — 366
  - (g) Care of the physically restrained not able to be classified further — 360
- (7) Other detention and correctional facilities (39) not able to be classified further — 390

**6.3.3.4 Residential Property (4).** For residential properties, the following coding structure shall be used:

- (1) One-and two-family dwellings (41) — 419
- (2) Multifamily dwellings (42) — 429
- (3) Rooming, boarding, or lodging houses (43) — 439
- (4) Hotels, motels, inns, lodges (44) — 449
- (5) Residential board and care (45) — 459
- (6) Dormitories (46), as follows:
  - (a) Sorority house, fraternity house — 462
  - (b) Barracks, dormitory — 464
  - (c) Dormitory-type residences not able to be classified further — 460
- (7) Other residential properties (40) not able to be classified further — 400

**6.3.3.5 Mercantile or Business Property (5).** For mercantile or business properties, the following coding structure shall be used:

- (1) Food, beverage sales (51), as follows:
  - (a) Supermarket — 511
  - (b) Market, grocery store — 512
  - (c) Specialty food store — 513
  - (d) Liquor, beverage store — 514
  - (e) Creamery, dairy store — 515
  - (f) Delicatessen — 516
  - (g) Food, beverage sales not able to be classified further
- (2) Textile, wearing apparel sales (52), as follows:
  - (a) Clothing store — 521
  - (b) Clothing accessories, shoe store — 522
  - (c) Shoe repair shop — 523
  - (d) Tailor, dressmaking shop — 524
  - (e) Fur store — 525
  - (f) Dry goods store — 526
  - (g) Textile, wearing apparel sales not able to be classified further — 520
- (3) Household goods sales, repairs (53), as follows:
  - (a) Furniture store — 531
  - (b) Appliance store — 532
  - (c) Hardware store — 533
  - (d) Music or video store — 534
  - (e) Wallpaper, paint store — 535
  - (f) Rug, floor covering store — 536
  - (g) Furniture repair shop — 537
  - (h) Appliance repair shop — 538
  - (i) Household goods sales, repairs not able to be classified further — 530

- (4) Specialty shops (54), as follows:
    - (a) Book, stationery store — 541
    - (b) Newsstand, tobacco shop — 542
    - (c) Drug store — 543
    - (d) Gift, jewelry store — 544
    - (e) Electronic specialty store — 545
    - (f) Leather goods shop — 546
    - (g) Florist shop, greenhouse — 547
    - (h) Optical goods sales — 548
    - (i) Specialty shops not able to be classified further — 549
  - (5) Recreation, hobby, or home repair supply sales, personal services (55), as follows:
    - (a) Hobby, toy shop — 551
    - (b) Sporting goods store — 552
    - (c) Photographic supply sales, still-picture studio — 553
    - (d) Garden supply store — 554
    - (e) Retail lumber sales — 555
    - (f) Pet store, animal hospital — 556
    - (g) Barber, beauty shop — 557
    - (h) Fireworks sales — 558
    - (i) Recreation, hobby, or home repair supply sales, personal services not able to be classified further — 559
  - (6) Professional supplies, services (56), as follows:
    - (a) Professional supply sales — 561
    - (b) Trade supply sales — 562
    - (c) Art supply sales — 563
    - (d) Self-service laundry, dry cleaning — 564
    - (e) Linen supply house — 565
    - (f) Laundry, dry cleaner pick-up shop — 566
    - (g) Home maintenance services — 567
    - (h) Restaurant supplies, services — 568
    - (i) Professional supplies, services not able to be classified further — 569
  - (7) Motor vehicle or boat sales, services (57), as follows:
    - (a) Public service station — 571
    - (b) Private service station — 572
    - (c) Motor vehicle repair, paint shop — 573
    - (d) Motor vehicle, trailer sales — 574
    - (e) Motor vehicle accessory sales — 575
    - (f) Boat, pleasure-craft sales — 576
    - (g) Marine service station — 577
    - (h) Car washing facility — 578
    - (i) Motor vehicle or boat sales, services not able to be classified further — 579
  - (8) General item stores (58), as follows:
    - (a) Department store — 581
    - (b) Small variety store — 582
    - (c) Large variety store — 583
    - (d) Mail order store — 584
    - (e) Mall — 585
    - (f) General item stores not able to be classified further — 589
  - (9) Offices (59), as follows:
    - (a) General business office — 591
    - (b) Bank, with first-story banking facilities — 592
    - (c) Medical, research, scientific office — 593
    - (d) Engineering, architectural, technical office — 594
    - (e) Mailing firm — 595
    - (f) Post office — 596
    - (g) Offices not able to be classified further — 599
  - (10) Mercantile, business property not able to be classified further (500)
- 6.3.3.6 Basic Industry, Utility, Defense, Agriculture, or Mining Property (6).** For basic industry, utility, defense, agriculture, or mining properties, the following coding structure shall be used:
- (1) Nucleonics, energy production (61), as follows:
    - (a) Radioactive material working — 611
    - (b) Nuclear ordnance plant — 612
    - (c) Nuclear energy plant — 613
    - (d) Steam, heat-generating plant — 614
    - (e) Electric generating plant — 615
    - (f) Gas manufacturing plant — 616
    - (g) Nucleonics, energy production not able to be classified further — 619
  - (2) Laboratories (62), as follows:
    - (a) Chemical, medical laboratory — 621
    - (b) Physical materials testing laboratory — 622
    - (c) Personnel, psychological laboratory — 623
    - (d) Radioactive materials laboratory — 624
    - (e) Electrical, electronic laboratory — 625
    - (f) Agricultural laboratory — 626
    - (g) General research laboratory — 627
    - (h) Laboratories not able to be classified further — 629
  - (3) Communications, defense, document facilities (63), as follows:
    - (a) National defense site not elsewhere classified — 631
    - (b) Radio, radar site — 632
    - (c) Fire, police, industrial communications center — 633
    - (d) Telephone exchange, central office — 634
    - (e) Computer, data-processing center — 635
    - (f) Document center, record repository — 636
    - (g) Communications, defense, document facilities not able to be classified further — 639
  - (4) Utility, energy distribution systems (64), as follows:
    - (a) Electric transmission, distribution system — 642
    - (b) Gas distribution system, gas pipeline — 644
    - (c) Flammable or combustible liquid distribution system, pipeline — 645
    - (d) Steam, heat distribution system — 646
    - (e) Water supply system — 647
    - (f) Sanitary service, garbage and sewage disposal — 648
    - (g) Utility, energy distribution systems not able to be classified further — 649
  - (5) Agriculture (65), as follows:
    - (a) Livestock production — 651
    - (b) Crops, orchards — 655
    - (c) Curing and drying facility for agricultural products — 656
    - (d) Fruit, vegetable packing — 657
    - (e) Agriculture not able to be classified further — 659
  - (6) Forests, hunting, fishing (66), as follows:
    - (a) Forest, standing timber without logging operations — 661
    - (b) Forest, standing timber with logging operations — 662
    - (c) Hunting, trapping, game propagation — 663
    - (d) Fish hatchery — 665
    - (e) Wood-chip pile — 666



- (f) Forests, hunting, fishing not able to be classified further — 660
- (7) Mining, quarrying of natural raw materials (67), as follows:
  - (a) Coal mine — 671
  - (b) Ore mine — 672
  - (c) Ore concentration plant — 673
  - (d) Petroleum, natural gas well with accompanying reservoir — 674
  - (e) Stone, slate, clay, gravel, sand quarries, pits — 675
  - (f) Salt mine — 676
  - (g) Chemical, fertilizer, mineral mine — 677
  - (h) Nonmetallic mineral mine, quarry — 678
  - (i) Mining, quarrying of natural raw materials not able to be classified further — 670
- (8) Nonmetallic mineral, mineral products manufacture (68), as follows:
  - (a) Structure clay products manufacture — 681
  - (b) Glass manufacture, excluding containers — 682
  - (c) Glass container manufacture — 683
  - (d) Pottery, china, earthenware manufacture — 684
  - (e) Cement manufacture — 685
  - (f) Concrete batch plant — 686
  - (g) Abrasives manufacture — 687
  - (h) Nonmetallic mineral product manufacture — 688
  - (i) Nonmetallic mineral, mineral products manufacture not able to be classified further — 680
- (9) Other basic industry, utility, defense, agriculture, mining properties (60) not able to be classified further — 600

**6.3.3.7 Manufacturing or Processing Property (7).** For manufacturing or processing properties, the following coding structure shall be used:

- (1) Food industries (71), as follows:
  - (a) Slaughtering, preparation, preserving of meat — 711
  - (b) Dairy processing and manufacture — 712
  - (c) Canning, preserving of fruits, vegetables — 713
  - (d) Canning, preserving of fish, seafood — 714
  - (e) Manufacture of grain mill products — 715
  - (f) Bakery product manufacture — 716
  - (g) Sugar refining, confectionary manufacture — 717
  - (h) Snack foods manufacture — 718
  - (i) Special foods industries — 719
  - (j) Food industries not able to be classified further — 710
- (2) Beverages, tobacco, essential oils (72), as follows:
  - (a) Distilling, rectifying, blending spirits — 721
  - (b) Wines, winery — 722
  - (c) Brewery, manufacture of malt — 723
  - (d) Soft drink, carbonated water industry — 724
  - (e) Tobacco products manufacture — 725
  - (f) Vegetable and animal oil, fat, soap making — 726
  - (g) Beverages, tobacco, essential oils not able to be classified further — 720
- (3) Textiles (73), as follows:
  - (a) Cotton gin — 731
  - (b) Cotton spinning, weaving — 732
  - (c) Wool or worsted spinning, weaving — 733
  - (d) Mixed, blended, other fibers — 734
  - (e) Textile finishing plant — 735
  - (f) Knitting mills for all fibers — 736
  - (g) Cordage, rope, twine, net manufacture — 737

- (h) Floor covering, coated fabric manufacture, excluding rubber — 738
- (i) Textiles not able to be classified further — 730
- (4) Footwear, wearing apparel, leather, rubber (74), as follows:
  - (a) Footwear manufacture — 741
  - (b) Wearing apparel manufacture, excluding footwear — 742
  - (c) Made-up textile goods manufacture, excluding wearing apparel — 743
  - (d) Tanneries, leather finishing — 744
  - (e) Fur products manufacture, excluding wearing apparel — 745
  - (f) Leather products manufacture, excluding footwear, wearing apparel — 746
  - (g) Rubber, rubber products manufacture — 747
  - (h) Footwear, wearing apparel, leather, rubber not able to be classified further — 740
- (5) Wood, furniture, paper, printing (75), as follows:
  - (a) Sawmill, planing mill, wood products mill — 751
  - (b) Manufacture and assembly of mobile and modular buildings — 752
  - (c) Wood, cane, cork products manufacture — 753
  - (d) Furniture, fixture, bedding manufacture — 754
  - (e) Paper, pulp, paperboard manufacture — 755
  - (f) Paper, pulp, paperboard products manufacture — 756
  - (g) Newspaper or magazine printing, publishing — 757
  - (h) Printing, publishing, allied industry — 758
  - (i) Wood, furniture, paper, printing not able to be classified further — 750
- (6) Chemical, plastic, petroleum (76), as follows:
  - (a) Industrial chemical manufacture — 761
  - (b) Hazardous chemical manufacture — 762
  - (c) Plastic manufacture — 763
  - (d) Plastic product manufacture — 764
  - (e) Paint, varnish, lacquer, ink, wax, adhesive manufacture — 765
  - (f) Drug, cosmetic, pharmaceutical manufacture — 766
  - (g) Petroleum refinery, natural gas plant — 767
  - (h) Asphalt, coal product manufacture — 768
  - (i) Chemical, plastic, petroleum not able to be classified further — 760
- (7) Metal, metal products (77), as follows:
  - (a) Iron, steel manufacture — 771
  - (b) Nonferrous metal manufacture — 772
  - (c) Metal product manufacture — 773
  - (d) Machinery manufacture — 774
  - (e) Electrical equipment manufacture — 775
  - (f) Electrical appliance, electronics equipment manufacture — 776
  - (g) Metal, metal products not able to be classified further — 770
- (8) Vehicle assembly, manufacture (78), as follows:
  - (a) Shipbuilding, repairing of vessels over 65 ft (20 m) — 781
  - (b) Boat building, repairing of vessels 65 ft (20 m) and under — 782
  - (c) Railway equipment manufacture, assembly, repair — 783
  - (d) Motor vehicle manufacture, assembly — 784

- (e) Bicycle manufacturing, assembly, repair — 785
  - (f) Aircraft and rocket manufacturing, assembly, repair — 786
  - (g) Manufacture of special transport equipment — 787
  - (h) Vehicle assembly, manufacture not able to be classified further — 780
  - (9) Other manufacturing (79), as follows:
    - (a) Instrument manufacture — 791
    - (b) Photographic, optical goods manufacture — 792
    - (c) Watch, clock manufacture — 793
    - (d) Jewelry manufacture — 794
    - (e) Musical instrument manufacture — 795
    - (f) Laundry, dry cleaning plant — 796
    - (g) Photographic film processing laboratory — 797
    - (h) Toy, sporting goods manufacturing not classified in other divisions — 798
    - (i) Other manufacturing not able to be classified further
  - (10) Other manufacturing, processing property (70), as follows:
    - (a) General maintenance shop not elsewhere classified — 708
    - (b) Manufacturing, processing properties not able to be classified further — 700
- 6.3.3.8 Storage Property (8).** For storage properties, the following coding structure shall be used:
- (1) Agricultural products storage (81), as follows:
    - (a) Seeds, beans, nuts, silage storage in bulk — 811
    - (b) Boxed, crated, packaged agricultural products storage — 812
    - (c) Loose, bagged agricultural products storage — 813
    - (d) Loose, baled tobacco storage — 814
    - (e) Barns, stables — 815
    - (f) Grain elevators — 816
    - (g) Livestock storage — 817
    - (h) Agricultural supply storage — 818
    - (i) Agricultural products storage not able to be classified further — 810
  - (2) Textile storage (82), as follows:
    - (a) Baled cotton storage — 821
    - (b) Baled wool, worsted storage — 822
    - (c) Baled silk, synthetic fiber storage — 823
    - (d) Baled jute, hemp, flax, sisal, other mixed or blended fiber storage — 824
    - (e) Cloth, yarn storage — 825
    - (f) Wearing apparel, garments, finished textile storage — 826
    - (g) Leather, leather products storage — 827
    - (h) Fur, skin, hair products storage — 828
    - (i) Textile storage not able to be classified further — 820
  - (3) Processed food, tobacco storage (83), as follows:
    - (a) Packaged foodstuff storage — 831
    - (b) Canned or bottled food, soft drink storage — 832
    - (c) Loose, bagged processed food storage — 833
    - (d) Food locker plants — 834
    - (e) Cold storage — 835
    - (f) Bulk sugar storage — 836
    - (g) Bulk flour, starch storage — 837
    - (h) Packaged tobacco product storage — 838
    - (i) Processed food, tobacco storage not able to be classified further — 830
  - (4) Petroleum products, alcohol beverage storage (84), as follows:
    - (a) Flammable, combustible liquid tank storage — 841
    - (b) Gasometer, cryogenic gas storage — 842
    - (c) LP-Gas bulk plant — 843
    - (d) Missile, rocket fuel storage — 844
    - (e) Packaged petroleum products storage — 845
    - (f) Alcoholic beverage storage — 846
    - (g) Petroleum products, alcoholic beverage storage not able to be classified further — 840
  - (5) Wood, paper products storage (85), as follows:
    - (a) Lumberyard, building materials storage — 851
    - (b) Wood products, furniture storage — 852
    - (c) Fiber products storage — 853
    - (d) Rolled paper storage — 854
    - (e) Paper, paper products storage — 855
    - (f) Timber, pulpwood, logs, wood fuel — 856
    - (g) Wood, paper products storage not able to be classified further — 850
  - (6) Chemical or plastic, chemical or plastic product storage (86), as follows:
    - (a) Industrial chemical storage — 861
    - (b) Hazardous chemical storage not specifically listed below — 862
    - (c) Plastic, plastic product storage — 863
    - (d) Fertilizer storage — 864
    - (e) Paint, varnish storage — 865
    - (f) Drug, cosmetic, pharmaceutical storage — 866
    - (g) Rubber, rubber products storage — 867
    - (h) Photographic film storage — 868
    - (i) Chemical or plastic, chemical or plastic product storage not able to be classified further — 860
  - (7) Metal, metal product storage (87), as follows:
    - (a) Basic metal form storage — 871
    - (b) Metal parts storage (often in trays or bins or on racks) — 872
    - (c) Hardware storage — 873
    - (d) Machinery storage — 874
    - (e) Electrical appliance, supply storage — 875
    - (f) Finished metal products storage (often in cartons or crates) — 876
    - (g) Scrap, junkyards — 877
    - (h) Metal, metal products storage not able to be classified further — 870
  - (8) Vehicle storage (88), as follows:
    - (a) Residential parking garage — 881
    - (b) General vehicle parking garage — 882
    - (c) Bus, truck, auto fleet, automobile dealer storage — 883
    - (d) Heavy machine, equipment storage — 884
    - (e) Boat, ship storage — 885
    - (f) Aircraft hangar — 886
    - (g) Railway storage — 887
    - (h) Fire stations — 888
    - (i) Vehicle storage not able to be classified further — 880
  - (9) General item storage (89), as follows:
    - (a) General warehouse — 891
    - (b) Bagged mineral products storage — 892
    - (c) Packaged mineral products storage — 893

- (d) Freight terminal — 894
- (e) Coal, coke briquette, charcoal storage — 895
- (f) Military stores, national defense storage not elsewhere classified — 896
- (g) Ice storage — 897
- (h) Wharf, pier — 898
- (i) Self-storage units for residential commodities — 899
- (j) General item storage not able to be classified further — 890
- (10) Other storage property (80), as follows:
  - (a) Toolshed, contractor's shed — 808
  - (b) Storage properties not able to be classified further — 800

**6.3.3.9 Outside or Special Property (9).** For outside or special properties, the following coding structure shall be used:

- (1) Landfills, dumps, and recycling facilities (91), as follows:
  - (a) Managed nonhazardous refuse disposal site — 911
  - (b) Unmanaged nonhazardous refuse disposal site — 912
  - (c) Managed hazardous materials waste disposal site — 913
  - (d) Unmanaged hazardous materials waste disposal site — 914
  - (e) Temporary hazardous materials waste disposal site — 915
  - (f) Recycling facility — 916
  - (g) Landfills, dumps, and recycling facilities not able to be classified further — 910
- (2) Special structures (92), as follows:
  - (a) Bridge, trestle — 921
  - (b) Tunnel — 922
  - (c) Public mailbox — 923
  - (d) Toll station — 924
  - (e) Shelter — 925
  - (f) Outbuilding, excluding garage — 926
  - (g) Outdoor telephone booth — 927
  - (h) Aerial tramway — 928
  - (i) Special structures not able to be classified further — 92
- (3) Outdoor properties (93), as follows:
  - (a) Open land, field — 931
  - (b) Residential yards — 933
  - (c) Cemetery — 934
  - (d) Campsite with utilities — 935
  - (e) Vacant lot — 936
  - (f) Beaches, seashores, riverfront areas (salt or fresh water) — 937
  - (g) Graded and cared-for plots of land — 938
  - (h) Outdoor properties not able to be classified further — 930
- (4) Water areas (94), as follows:
  - (a) In open sea, tidal waters — 941
  - (b) Within designated port, channel, anchorage — 942
  - (c) Alongside quay, pier, pilings — 943
  - (d) At flammable liquid or gas loading, unloading facility — 944
  - (e) Storm drain, flood control culvert — 945
  - (f) Inland water area — 946
  - (g) Water areas not able to be classified further — 940
- (5) Railroad property (95), as follows:

- (a) Railroad right of way — 951
- (b) Switchyard, marshalling yard — 952
- (c) Siding — 953
- (d) Railroad signaling, switch control equipment location — 954
- (e) Railroad properties not able to be classified further — 950
- (6) Road, parking property (96), as follows:
  - (a) Limited-access highway, divided highway — 961
  - (b) Paved public street — 962
  - (c) Paved private street, way — 963
  - (d) Unpaved street, road, path — 964
  - (e) Uncovered parking area — 965
  - (f) Road, parking properties not able to be classified further — 960
- (7) Aircraft areas (97), as follows:
  - (a) In flight — 971
  - (b) On runway — 972
  - (c) On taxiway, uncovered parking area, maintenance area — 973
  - (d) At loading ramp — 974
  - (e) Aircraft areas not able to be classified further — 970
- (8) Outside equipment operating areas (98), as follows:
  - (a) Construction site — 981
  - (b) Oil, gas field — 982
  - (c) Pipeline, power line, or other utility right of way — 983
  - (d) Industrial plant yard area — 984
  - (e) Outside equipment operating areas not able to be classified further — 980
- (9) Other outside or special properties (90) not able to be classified further — 900
- (10) Other specific property use (00), as follows:
  - (a) Vacant structure unable to be classified elsewhere — 097
  - (b) Specific property use not applicable — 098
  - (c) Specific property use not able to be classified further — 000
  - (d) Specific property use undetermined or not reported — UUU

**6.4\* Specific Property Use.** Where data on specific property use is to be coded, the three-digit coding structure in 6.3.3.1 through 6.3.3.9 shall be used.

**6.5 Mobile Property.**

**6.5.1** Mobile property shall be property that is designed to be movable in relation to fixed property, regardless of whether or not it is still capable of being moved.

**6.5.2** The specific property on which a mobile property is located shall be reported.

**6.5.3** The following data shall be recorded for proper identification of a mobile property:

- (1) Model year
- (2) Name of manufacturer or brand name
- (3) Model name or model number, if applicable
- (4) Manufacturer's serial number or vehicle identification number (VIN)
- (5) License or registration number, including the state or agency issuing the license or registration

**6.5.4\* Mobile Property Involvement Coding Structure.** Where data on mobile property involvement is to be coded, the following coding structure shall be used:

- (1) Mobile property was not involved in ignition, but burned in a fire following ignition — 1
- (2) Mobile property was involved in ignition, but it did not burn — 2
- (3) Mobile property was involved in ignition, and it burned — 3
- (4) No mobile property was involved — N
- (5) Mobile property involvement undetermined or not reported — U

#### 6.5.5 Mobile Property Type.

**6.5.5.1** This data element shall be used to record the specific type of mobile property involved, regardless of whether or not it is still capable of being moved.

**6.5.5.2\* Mobile Property Type Coding Structure.** Where data on mobile property type is to be coded, the coding structure provided in 6.5.5.2.1 through 6.5.5.2.8 shall be used.

**6.5.5.2.1 Passenger Road Vehicles (1).** For passenger road vehicles, the following coding structure shall be used:

- (1) Automobile — 11
- (2) Bus, trackless trolley — 12
- (3) All-terrain vehicles — 13
- (4) Motor home — 14
- (5) Travel trailer — 15
- (6) Camping trailer — 16
- (7) Manufactured home, in transit — 17
- (8) Motorcycle, trail bike — 18
- (9) Passenger road vehicles not able to be classified further — 10

**6.5.5.2.2 Freight Road Vehicles (2).** For freight road vehicles, the following coding structure shall be used:

- (1) General use single-chassis trucks — 21
- (2) Truck tractor, semi-trailer or non-motorized trailer, or tractor-trailer combination — 23
- (3) Tank truck for nonflammable cargo — 24
- (4) Tank truck for flammable or combustible liquid, chemical — 25
- (5) Tank truck for compressed gas or LP-Gas — 26
- (6) Trash truck — 27
- (7) Commercial mobile business vehicle — 28
- (8) Freight road vehicles not able to be classified further — 20

**6.5.5.2.3 Rail Vehicles (3).** For rail vehicles, the following coding structure shall be used:

- (1) Passenger, diner car — 31
- (2) Freight, box, hopper car — 32
- (3) Tank car — 33
- (4) Container, piggyback car — 34
- (5) Locomotive, engine — 35
- (6) Self-powered rail car — 36
- (7) Maintenance equipment, car — 37
- (8) Rail vehicles not able to be classified further — 30

**6.5.5.2.4 Water Vessels (4).** For water vessels, the following coding structure shall be used:

- (1) Motor boat under 65 ft (20 m) length overall — 41

- (2) Boat or ship greater in length overall, but under 1000 gross tons (907 metric tons) — 42
- (3) Passenger ship greater than or equal to 1000 gross tons (907 metric tons) — 43
- (4) Tank ship — 44
- (5) Personal water craft — 45
- (6) Cargo or military ship over 1000 tons (907 metric tons) — 46
- (7) Non-self-propelled vessel — 47
- (8) Commercial fishing vessel — 48
- (9) Sailboats without auxiliary power — 49
- (10) Water vessels not able to be classified further — 40

**6.5.5.2.5 Air Vehicles (5).** For air vehicles, the following coding structure shall be used:

- (1) Personal, business, utility aircraft under 12,500 lb (5670 kg) gross weight — 51
- (2) Personal, business, utility aircraft 12,500 lb (5670 kg) gross weight and over — 52
- (3) Commercial aircraft, reciprocating-engine-powered, fixed-wing — 53
- (4) Commercial aircraft, jet- and other turbine-powered, fixed-wing — 54
- (5) Nonmilitary helicopters, vertical takeoff aircraft — 55
- (6) Military fixed-wing aircraft — 56
- (7) Military non-fixed-wing aircraft — 57
- (8) Balloon vehicles — 58
- (9) Gliders and kites — 59
- (10) Air vehicles not able to be classified further — 50

**6.5.5.2.6 Heavy Industrial and Agricultural Equipment (6).** For heavy industrial and agricultural equipment, the following coding structure shall be used:

- (1) Construction equipment — 61
- (2) Materials-handling equipment — 63
- (3) Crane — 64
- (4) Tractor, harvester, picker — 65
- (5) Timber harvest equipment — 67
- (6) Heavy industrial and agricultural equipment not able to be classified further — 60

**6.5.5.2.7 Special Mobile Property and Military Vehicles (7).** For special mobile properties and military vehicles, the following coding structure shall be used:

- (1) Garden equipment — 71
- (2) Mechanically moved shipping container — 73
- (3) Armored equipment — 74
- (4) Manned, unmanned space vehicles — 75
- (5) Aerial tramway vehicle — 76
- (6) Non-road rated racing vehicles — 77
- (7) Special mobile property and military vehicles not able to be classified further — 70

**6.5.5.2.8 Other Mobile Property Types (8).** For other mobile property types, the following coding structure shall be used:

- (1) Mobile property type not applicable — 98
- (2) Mobile property type not able to be classified further — 99
- (3) Mobile property type undetermined or not reported — UU

### 6.5.6 Vehicle Make.

**6.5.6.1** Where data on the make of a vehicle is to be coded, the National Crime Information Center (NCIC) *Code Manual* vehicle data codes and coding structure shall be used.

**6.5.6.2** The vehicle-make data element shall not apply to aircraft or watercraft.

**6.6\* Property Management.** Where data on property management is to be coded, the coding structure in Table 6.6 shall be used.

### 6.7\* On-Site Material.

**6.7.1** Each type of material identified in 6.7.2 shall have its use or application recorded using the classifications in Table 6.7.3.

**6.7.2\* On-Site Material Type Coding Structure.** Where data on on-site materials is to be coded, the coding structure provided in 6.7.2.1 through 6.7.2.9 shall be used.

**6.7.2.1 Foods, Beverages, or Agricultural Materials (1).** For foods, beverages, or agricultural materials, the following coding structure shall be used:

- (1) Foods (11), as follows:
  - (a) Baked goods — 111
  - (b) Meat products — 112
  - (c) Dairy products — 113
  - (d) Produce, fruit or vegetables — 114
  - (e) Sugar, spices — 115
  - (f) Deli products — 116
  - (g) Packaged cereals or grains — 117
  - (h) Fat or cooking grease — 118
  - (i) Foods not able to be classified further — 110
- (2) Beverages (12), as follows:
  - (a) Alcoholic beverage — 121
  - (b) Nonalcoholic beverage — 122
  - (c) Beverages not able to be classified further — 120
- (3) Agricultural materials (13), as follows:
  - (a) Trees, plants, flowers — 131
  - (b) Feed, grain, seed — 132
  - (c) Hay, straw — 133
  - (d) Crop, not grain — 134
  - (e) Livestock — 135

- (f) Pets — 136
  - (g) Pesticides — 137
  - (h) Fertilizer — 138
  - (i) Agricultural materials not able to be classified further — 130
- (4) Foods, beverages, or agricultural materials not able to be classified further (10) — 100

**6.7.2.2 Personal and Home Products (2).** For personal and home products, the following coding structure shall be used:

- (1) Fabrics (21), as follows:
  - (a) Curtains, drapes — 211
  - (b) Linens — 212
  - (c) Bedding — 213
  - (d) Cloth, yarn, dry goods — 214
  - (e) Fabrics not able to be classified further — 210
- (2) Wearable products (22), as follows:
  - (a) Clothes — 221
  - (b) Footwear — 222
  - (c) Eyeglasses — 223
  - (d) Perfumes, colognes, cosmetics — 225
  - (e) Toiletries — 226
  - (f) Wearable products not able to be classified further — 220
- (3) Accessories (23), as follows:
  - (a) Jewelry, watches — 231
  - (b) Luggage, suitcases — 232
  - (c) Purses, satchels, briefcases, wallets, belts, backpacks — 233
  - (d) Accessories not able to be classified further — 230
- (4) Furnishings (24), as follows:
  - (a) Furniture — 241
  - (b) Beds, mattresses — 242
  - (c) Clocks — 243
  - (d) Housewares — 244
  - (e) Glass, ceramics, china, pottery, stoneware, earthenware — 245
  - (f) Silverware — 246
  - (g) Furnishings not able to be classified further — 240
- (5) Personal and home products not able to be classified further (20) — 200

**6.7.2.3 Raw Materials (3).** For raw materials, the following coding structure shall be used:

- (1) Wood (31), as follows:
  - (a) Lumber, sawn wood — 311
  - (b) Timber — 312
  - (c) Cork — 313
  - (d) Pulp — 314
  - (e) Sawdust, wood chips — 315
  - (f) Wood not able to be classified further — 310
- (2) Fibers (32), as follows:
  - (a) Cotton — 321
  - (b) Wool — 322
  - (c) Silk — 323
  - (d) Fibers not able to be classified further — 320
- (3) Animal skins (33), as follows:
  - (a) Leather — 331
  - (b) Fur — 332
  - (c) Animal skins not able to be classified further — 330
- (4) Other raw materials (34), as follows:

**Table 6.6 Property Management Coding Structure**

Code	Description
1	Private tax-paying property.
2	Private non-tax-paying property.
3	City, town, village, or other local government property.
4	County or parish government property.
5	State or provincial government property, except military.
6	Central or federal government property, except military.
7	Foreign government property.
8	Military property.
0	Property management not able to be classified further.
U	Property management undetermined or not reported.

- (a) Ore — 341
- (b) Rubber — 342
- (c) Plastics — 343
- (d) Fiberglass — 344
- (e) Salt — 345

(5) Raw materials not able to be classified further (30) — 300

**6.7.2.4 Paper Products or Rope (4).** For paper products or rope, the following coding structure shall be used:

- (1) Paper products (41), as follows:
  - (a) Newspaper, magazines — 411
  - (b) Books — 412
  - (c) Greeting cards — 413
  - (d) Paper, rolled — 414
  - (e) Cardboard — 415
  - (f) Packaged paper products, including stationary — 416
  - (g) Paper records or reports — 417
  - (h) Paper products not able to be classified further — 410
- (2) Rope, twine, cordage (42) — 421
- (3) Paper products or rope not able to be classified further (40) — 400

**6.7.2.5 Flammables, Chemicals, or Plastics (5).** For flammables, chemicals, or plastics, the following coding structure shall be used:

- (1) Flammable or combustible liquids (51), as follows:
  - (a) Gasoline, diesel fuel — 511
  - (b) Flammable liquid — 512
  - (c) Combustible liquid — 513
  - (d) Motor oil — 514
  - (e) Heavy oils, grease, non-cooking-related — 515
  - (f) Asphalt — 516
  - (g) Adhesive, resin, tar — 517
  - (h) Flammable or combustible liquids not able to be classified further — 510
- (2) Flammable gases (52), as follows:
  - (a) Natural gas — 521
  - (b) LP-Gas, butane, propane — 522
  - (c) Hydrogen gas — 523
  - (d) Flammable gases not able to be classified further — 520
- (3) Solid fuel, coal type (53), as follows:
  - (a) Charcoal — 531
  - (b) Coal — 532
  - (c) Peat — 533
  - (d) Coke — 534
  - (e) Solid fuels, coal type not able to be classified further — 530
- (4) Chemicals or drugs (54), as follows:
  - (a) Hazardous chemicals — 541
  - (b) Nonhazardous chemicals — 542
  - (c) Cleaning supplies — 543
  - (d) Pharmaceuticals, drugs — 544
  - (e) Illegal drugs — 545
  - (f) Chemicals or drugs not able to be classified further — 540
- (5) Radioactive materials (55) — 551
- (6) Flammables, chemicals, or plastics not able to be classified further (50) — 500

**6.7.2.6 Construction, Machinery, or Metals (6).** For construction, machinery, or metals, the following coding structure shall be used:

- (1) Machinery or tools (61), as follows:
  - (a) Industrial machinery — 611
  - (b) Machine parts — 612
  - (c) Tools (power and hand tools) — 613
  - (d) Machinery or tools not able to be specified further — 610
- (2) Construction supplies (62), as follows:
  - (a) Hardware products — 621
  - (b) Construction and home improvement products — 622
  - (c) Pipes, fittings — 623
  - (d) Stone-working materials — 624
  - (e) Lighting fixtures and lamps — 625
  - (f) Electrical parts, supplies, equipment — 626
  - (g) Insulation — 627
  - (h) Abrasives — 628
  - (i) Fencing, fence supplies — 629
  - (j) Construction supplies not able to be classified further — 620
- (3) Floor and wall coverings (63), as follows:
  - (a) Carpets, rugs — 631
  - (b) Linoleum, tile — 632
  - (c) Ceramic tile — 633
  - (d) Wallpaper — 634
  - (e) Paint — 635
  - (f) Floor and wall coverings not able to be classified further — 630
- (4) Metal products (64), as follows:
  - (a) Steel, iron products — 641
  - (b) Nonferrous metal products — 642
  - (c) Combustible metals products — 643
  - (d) Metal products not able to be classified further — 640
- (5) Construction, machinery, or metals not able to be classified further (60) — 600

**6.7.2.7 Appliances, Electronics, and Medical and Laboratory Products (7).** For appliances, electronics, and medical and laboratory products, the following coding structure shall be used:

- (1) Appliances and electronics (71), as follows:
  - (a) Appliances — 711
  - (b) Electronic parts, supplies, equipment — 712
  - (c) Electronic media — 713
  - (d) Photographic equipment, supplies, materials — 714
  - (e) Appliances and electronics not able to be classified further — 710
- (2) Medical and laboratory products (72), as follows:
  - (a) Dental supply — 721
  - (b) Medical supply — 722
  - (c) Optical products — 723
  - (d) Veterinary supplies — 724
  - (e) Laboratory supplies — 725
  - (f) Medical and laboratory products not able to be classified further — 720
- (3) Appliances, electronics, and medical and laboratory products not able to be classified further (70) — 700

**6.7.2.8 Vehicles and Vehicle Parts (8).** For vehicles and vehicle parts, the following coding structure shall be used:

- (1) Motor vehicles and motor vehicle parts (81), as follows:
  - (a) Autos, trucks, buses, recreational vehicles — 811
  - (b) Construction vehicles — 812
  - (c) Motor vehicle parts — 813
  - (d) Tires — 814
  - (e) Motor vehicles and motor vehicle parts not able to be classified further — 810
- (2) Watercraft (82), as follows:
  - (a) Boats, ships — 821
  - (b) Watercraft not able to be classified further — 820
- (3) Aircraft (83), as follows:
  - (a) Planes, airplanes — 831
  - (b) Helicopters — 832
  - (c) Aircraft not able to be classified further — 830
- (4) Rail (84), as follows:
  - (a) Trains, light rail, rapid transit cars — 841
  - (b) Rail equipment — 842
  - (c) Rail not able to be classified further — 840
- (5) Nonmotorized vehicles (85), as follows:
  - (a) Bicycles, tricycles, unicycles — 851
  - (b) Nonmotorized vehicles not able to be classified further — 850
- (6) Vehicles and vehicle parts not able to be classified further (80) — 800

**6.7.2.9 Other Products (9).** For other products, the following coding structure shall be used:

- (a) Containers, packing materials (91), as follows:
  - (a) Bottles, barrels, boxes — 911
  - (b) Packing material — 912
  - (c) Pallets — 913
  - (d) Containers, packing materials not able to be classified further — 910
- (b) Previously owned products (92) as follows:
  - (a) Antiques — 921
  - (b) Collectibles — 922
  - (c) Used merchandise — 923
  - (d) Previously owned products not able to be classified further — 920
- (c) Ordnance, explosives, fireworks (93), as follows:
  - (a) Guns — 931
  - (b) Ammunition — 932
  - (c) Explosives — 933
  - (d) Fireworks commercially made — 934
  - (e) Rockets, missiles — 935
  - (f) Ordnance, explosives, fireworks not classified above — 930
- (d) Recreational or art products (94), as follows:
  - (a) Musical instruments — 941
  - (b) Hobbies, crafts — 942
  - (c) Art supplies and artwork — 943
  - (d) Sporting goods — 944
  - (e) Camping, hiking, outdoor products — 945
  - (f) Games, toys — 946
  - (g) Recreational or art products not able to be classified further — 940
- (e) Mixed sales products (95), as follows:
  - (a) Office supplies — 951

- (b) Restaurant supplies, not including food — 952
- (c) Mixed sales products not able to be classified further — 950
- (f) Discarded material (96), as follows:
  - (a) Discarded material, other — 960
  - (b) Junkyard materials — 961
  - (c) Recyclable materials — 962
  - (d) Trash, not recyclable — 963
- (g) On-site materials, other (00), as follows:
  - (a) On-site materials not able to be classified further — 000
  - (b) No on-site materials — NNN
  - (c) On-site materials undetermined or not reported — UUU

**6.7.3 On-Site Materials Storage or Use.** Where data on on-site materials storage or use is to be coded, the coding structure in Table 6.7.3 shall be used.

**Table 6.7.3 On-Site Material Storage or Use Coding Structure**

Code	Description
1	Bulk storage or warehousing.
2	Processing or manufacturing.
3	Packaged goods for sale.
4	Repair or service.
N	No on-site material storage or use.
U	On-site material storage or use undetermined or not reported.

## Chapter 7 Structure Characteristics

**7.1 Purpose and Application.** When collected in pre-fire surveys, the information may be used in connection with address and census tract information for the purposes of fire flow calculations and for allocating and deploying fire suppression resources throughout a jurisdiction. Similarly, when this information is recorded after an incident occurs, it may be used with geographic designators and supplemented with incident frequency and mutual aid information to analyze the effectiveness of current fire suppression resource allocation and deployment.

**7.2 Limitations.** The use of the data elements in this chapter shall be limited to reporting information on structures.

**7.3 Definition of Structure.** A structure is an assembly of materials forming a construction for occupancy or use in such a manner as to serve a specific purpose. A building is a form of a structure. Open platforms, bridges, roof assemblies over open storage or process areas, tents, air-supported structures, and grandstands are other forms of a structure.

### 7.4 Structure Features.

#### 7.4.1\* Type of Construction.

**7.4.1.1** Categories from *NFPA 5000* shall be given to maintain uniformity in data classification.

**7.4.1.2** Where type of construction is to be coded, the coding structure in Table 7.4.1.2 shall be used.



**Table 7.4.1.2 Type of Construction Coding Structure**

1	Type I — Structural members, including walls, columns, beams, floors, and roofs, are of approved noncombustible or limited-combustible materials having high fire-resistive ratings. Structural frames have a fire-resistive rating of at least 3 hours. (Previously called “fire resistive.”)
2	Type II — Structural members, including walls, columns, beams, floors, and roofs, are of approved noncombustible or limited-combustible materials having fire-resistive ratings of 2 hours or less. (Previously called “noncombustible.”)
3	Type III — Exterior walls are of noncombustible or limited-combustible materials, and interior structural members, including walls, columns, beams, floors, and roofs, are of combustible materials. (Previously called “ordinary.”)
4	Type IV — Exterior walls are of noncombustible or limited-combustible materials, and interior structural members including columns, beams, arches, floors, and roofs, are of solid wood at least 2 in. (51 mm) nominal, qualifying as heavy timber under NFPA 220.
5	Type V — Exterior walls, bearing walls, and floors and roofs and their supports are wholly or partly of wood or other combustible material in dimensions smaller than those required in Type IV. (Previously called “wood frame.”)
0	Type of construction not able to be classified further.
U	Type of construction undetermined or not reported.

**7.4.2\* Method of Construction Coding Structure.** Where method of construction is to be coded, the following coding structure shall be used:

- (1) Site-built structure — 1
- (2) Factory-built, site-installed, or assembled structure — 2
- (3) Manufactured home — 3
- (4) Method of construction not able to be classified further — 0
- (5) Method of construction undetermined or not reported — U

**7.4.3\* Year of Construction or Total Renovation.** The year of construction or total renovation shall be recorded.

#### **7.4.4 Structure Height or Depth.**

**7.4.4.1\* Structure Height.** Structure height shall be the distance from grade to the highest structural member or peak.

**7.4.4.1.1\*** Structure height shall be recorded in either feet or meters.

**7.4.4.1.2** The units of measure used for structure height shall be consistent throughout the application.

**7.4.4.2\* Structure Depth.** Structure depth or distance below grade shall be the distance from grade to the floor level of the lowest story that provides usable floor space and where there is room for a person to stand.

**7.4.4.2.1\*** Structure depth shall be recorded in feet or meters.

**7.4.4.2.2** The units of measure used for structure depth shall be consistent throughout the application.

**7.4.5\* Number of Stories.** Where the number of stories is to be recorded, it shall be done consistently and include all below-grade and above-grade stories.

**7.4.5.1** A mezzanine shall be considered as an additional story if the building code defines the area as a mezzanine.

**7.4.5.2** Unused crawl spaces and unused ceiling/roof spaces shall not be considered as additional stories.

#### **7.4.6\* Floor Area.**

**7.4.6.1** Floor area shall be recorded in square feet or square meters.

**7.4.6.2** The units of measure shall be consistent throughout the application.

**7.4.7 Manufactured Home or Industrialized Unit Identification.** The following nameplate data shall be recorded for the proper identification of a manufactured home or industrialized unit property:

- (1) Name and address of the manufacturer
- (2) Serial number and model designation of the unit
- (3) Manufacture date or model year, if applicable (*see 7.4.3*)

#### **7.4.8 Structure Type.**

**7.4.8.1\*** The data element for structure type shall be used to describe the type of structure on a specific property.

**7.4.8.2\* Structure Type Coding Structure.** Where structure type is to be coded, the following coding structure in shall be used:

- (1) Enclosed building — 1
- (2) Portable or mobile structure — 2
- (3) Open structure — 3
- (4) Air-supported structure — 4
- (5) Tent — 5
- (6) Open platform — 6
- (7) Underground structure work areas — 7
- (8) Connective structure — 8
- (9) Structure type not able to be classified further — 0
- (10) Not a structure — N
- (11) Structure type undetermined or not reported — U

**7.4.9 Property Value.** Property value shall include the estimated total value of any building or structure, machinery and equipment, and contents.

**7.4.9.1** Property value shall not include the value of the land.

**7.4.9.2** If structure and content value are to be recorded separately, machinery and equipment shall be included with the content value.

**7.4.9.3\*** Values shall be recorded only to the whole-dollar level.

**7.4.10\* Structure Status Coding Structure.** Where structure status is to be coded, the following coding structure in shall be used:

- (1) Under construction — 1
- (2) In use, with furnishings in place and the property being routinely used — 2



- (3) Idle, with furnishings in place but the property not being routinely used — 3
- (4) Under major renovation — 4
- (5) Vacant, but property secured and maintained — 5
- (6) Vacant, with property unsecured and not maintained — 6
- (7) Being demolished — 7
- (8) Structure status not able to be classified further — 0
- (9) Structure status undetermined or not reported — U

## 7.5 Compartment Characteristics.

### 7.5.1 Interior Finish.

**7.5.1.1\*** The location of the interior finish being evaluated shall be reported for the data to have relevance.

**7.5.1.2** Where the interior finish is to be coded, the coding structure in Table 7.5.1.2 shall be used.

### 7.5.2 Interior Finish Substrate or Solid Supporting Material.

**7.5.2.1** The data element for interior finish substrate or solid supporting material shall be used with the data element for finish on substrate or solid supporting material (*see* 7.5.3) in identifying interior finish substrate and the finishes used on them.

**7.5.2.2** If more than one material is present, the principal material used shall be identified.

**7.5.2.3** Where the interior finish substrate or solid supporting material shall be coded, the coding structure in Table 7.5.2.3 shall be used.

### 7.5.3 Finish on Substrate or Solid Supporting Material.

**7.5.3.1** The data element for finish on substrate or solid supporting material shall be used with the data element for interior finish substrate or solid supporting material (*see* 7.5.2) in identifying interior finish substrate and the finishes used on them.

**7.5.3.2** If more than one material is present, the principal material shall be identified.

**7.5.3.3** Where the finish on substrate or solid supporting material is to be coded, the coding structure in Table 7.5.3.3 shall be used.

**Table 7.5.1.2 Interior Finish Coding Structure**

1	Combustible wall, combustible ceiling, and combustible floor finish.
2	Combustible wall, combustible ceiling, and noncombustible floor finish.
3	Combustible wall, noncombustible ceiling, and combustible floor finish.
4	Combustible wall, noncombustible ceiling, and noncombustible floor finish.
5	Noncombustible wall, combustible ceiling, and combustible floor finish.
6	Noncombustible wall, combustible ceiling, and noncombustible floor finish.
7	Noncombustible wall, noncombustible ceiling, and combustible floor finish.
8	Noncombustible wall, noncombustible ceiling, and noncombustible floor finish.
0	Interior finish not able to be classified further.
U	Interior finish undetermined or not reported.

## 7.6 Compartment Quality.

### 7.6.1 Protection of Openings in Horizontal Barriers.

**7.6.1.1** The data element for protection of openings in horizontal barriers shall be used to measure the fire protection provided in horizontal fire barrier openings.

**7.6.1.2\*** Horizontal openings in stairways and shaft walls shall be reported using the "protection of stairways and vertical shafts" data element (*see* 7.6.1).

### 7.7 External Exposure.

**7.7.1** The data element for external exposure is used to measure the exposure to the structure from potential fires outside of the structure. NFPA 80A shall be used as a guide in determining exposure severity.

**7.7.2** Where the external exposure is to be coded, the coding structure in Table 7.7.2 shall be used.

### 7.8 Perimeter Access.

**7.8.1** The data element for perimeter access is used to measure the number of sides of the structure that have at least 30 ft (10 m) of clear access for firefighting operations. Clear access facilitates fire department suppression operations and will help limit exposure fire potential. Access areas need not be capable of supporting the weight of fire apparatus but must be capable of providing clear access for fire department operations.

**7.8.2** When perimeter access is to be coded, the coding structure designations in Table 7.8.2 shall be used.

**Table 7.5.2.3 Interior Finish Substrate or Solid Supporting Material Coding Structure**

1	Masonry, concrete, plaster.
2	Gypsum board.
3	Mineral board, noncombustible composite board.
4	Glass.
5	Metal.
6	Plastic.
7	Wood, plywood, particle board.
8	Fiberboard, combustible composite board.
0	Interior finish substrate not able to be classified further.
U	Interior finish substrate undetermined or not reported.

**Table 7.5.3.3 Finish on Substrate or Solid Supporting Material Coding Structure**

1	Wallpaper.
2	Vinyl wall covering.
3	Paint, stain.
4	Varnish.
5	Carpet.
6	Textiles, fabric.
0	Finish on substrate not able to be classified further.
N	None.
U	Finish on substrate undetermined or not reported.

**Table 7.7.2 External Exposure Coding Structure**

1	Light exposure, adequate protection provided.
2	Light exposure, inadequate protection provided.
3	Moderate exposure, adequate protection provided.
4	Moderate exposure, inadequate protection provided.
5	Severe exposure, adequate protection provided.
6	Severe exposure, inadequate protection provided.
0	External exposure not able to be classified further.
N	No exposure.
U	External exposure undetermined or not reported.

**Table 7.8.2 Perimeter Access Coding Structure**

1	30 ft (10 m) or more access on one side.
2	30 ft (10 m) or more access on two sides.
3	30 ft (10 m) or more access on three sides.
4	30 ft (10 m) or more access on four sides.
N	No sides with access of 30 ft (10 m) or more.
U	Perimeter access undetermined or not reported.

**7.9 Electrical Service Quality.**

**7.9.1** The data element for electrical service quality is used to measure the quality of the electrical service based upon a physical survey of the property and readily observed conditions of electrical equipment and wiring.

**7.9.2** Where the electrical service quality is to be coded, the coding structure designations in Table 7.9.2 shall be used.

**Table 7.9.2 Electrical Service Coding Structure**

1	Visible frayed or damaged wire insulation.
2	Temporary wiring or extension cords used in place of permanent wiring.
3	Metal junction boxes without connectors at cable entry points noted.
4	Heat at fuses, circuit breakers, or panel box noted.
5	Overfused circuits noted.
6	Fluorescent lights with old-style ballasts mounted on combustible fiberboard ceilings.
7	A combination of designations 1 through 6.
8	No electrical service deficiency noted in building or structure.
0	Electrical service quality not able to be classified further.
U	Electrical service quality undetermined or not reported.

**7.10 Heating Service Quality.**

**7.10.1** The data element for heating service quality is used to measure the quality of the heating system in the facility based upon observation made through a physical survey of the premises.

**7.10.2** Where the heating service quality is to be coded, the coding structure in Table 7.10.2 shall be used.

**Table 7.10.2 Heating Service Coding Structure**

1	Odor of gas or fuel gases noted.
2	Evidence of charring or smoke stains around chimney connector or flues.
3	Holes in chimney connector or flue noted.
4	Leaking valve or pipe.
5	Chimney connector hanger(s) missing.
7	A combination of designations 1 through 6.
8	No heating service deficiency noted in building or structure.
0	Heating service quality not able to be classified further.
U	Heating service quality undetermined or not reported.

**7.11 Control of Smoking Practices.**

**7.11.1** The data element for control of smoking practices is used to measure the control placed on smoking throughout the facility based upon observations made through a physical survey of the premises.

**7.11.2** Where the smoking practice quality is to be coded, the coding structure in Table 7.11.2 shall be used.

**Table 7.11.2 Control of Smoking Practices Coding Structure**

1	Smoking permitted throughout the premises without restriction.
2	Smoking restricted in a few special “no smoking” areas— not adequately marked or evidence of violation noted.
3	Smoking restricted to a few special “smoking” areas — not adequately marked or evidence of violation noted.
4	Smoking restricted in a few special “no smoking” areas— adequately marked and no evidence of violation noted.
5	Smoking restricted to a few special “smoking” areas — adequately marked and no evidence of violation noted.
6	No smoking permitted on premises— evidence of violation noted.
7	No smoking permitted on premises— no evidence of violation noted.
0	Control of smoking practices not able to be classified further.
U	Control of smoking practices undetermined or not reported.

**7.12 Fuel Control.****7.12.1 Solid Kindling Fuels.**

**7.12.1.1** The data element for solid kindling fuel is used to measure the general amount of kindling fuel present within the structure. A kindling fuel is a material that has been divided finely enough that it can be readily ignited. Examples of kindling fuels include wastepaper, corrugated cardboard, wood chips, and the like.

**7.12.1.2** The location of the solid kindling fuel being evaluated must be reported for the data to have relevance. For instance, it is important to report the difference in kindling fuels in occupied and unoccupied areas.

**7.12.1.3** Where solid kindling fuels are to be coded, the coding structure in Table 7.12.1.3 shall be used.

**Table 7.12.1.3 Solid Kindling Fuels Coding Structure**

1	Cluttered operations with kindling fuels in all areas.
2	Cluttered operations with kindling fuels in most areas.
3	Cluttered operations with kindling fuels in some areas.
4	Overcrowded operations with kindling fuels.
5	Occasional pockets of kindling fuels.
7	Neat and uncluttered operations but kindling fuels present or used in the process. Included are neat and orderly warehouses using cardboard cartons, and neat libraries.
0	Solid kindling fuels not able to be classified further.
N	No kindling fuels present.
U	Solid kindling fuels undetermined or not reported.

## **7.12.2 Flammable or Combustible Liquid Use.**

**7.12.2.1** The data element for flammable or combustible liquid use is used to measure the extent to which flammable or combustible liquids are used in the business or tenant space and whether or not the flammable or combustible liquids are properly stored in safety cans.

**7.12.2.2** Where flammable or combustible liquid use is to be coded, the coding structure in Table 7.12.2.2 shall be used.

**Table 7.12.2.2 Flammable or Combustible Liquid Use Coding Structure**

1	Flammable or combustible liquids used throughout — none in safety cans.
2	Flammable or combustible liquids used throughout — some in safety cans.
3	Flammable or combustible liquids used throughout — all in safety cans.
4	Flammable or combustible liquids used in some areas only — none in safety cans.
5	Flammable or combustible liquids used in some areas only — some in safety cans.
6	Flammable or combustible liquids used in some areas only — all in safety cans.
0	Flammable or combustible liquid use not able to be classified further.
N	No flammable or combustible liquids present.
U	Flammable or combustible liquid use undetermined or not reported.

## **7.13 Obstacles to Rescue and Fire Control.**

**7.13.1** The data element for obstacles to rescue and fire control is used to define any feature of the property that would present an obstacle to rescuing people from a structure or controlling a fire within the structure. These could be obstacles

that impede access to the structure, obstacles that prevent proper exiting from the structure, or construction features that would make it difficult to work within or control a fire within the structure.

**7.13.2** Where the obstacles to rescue and fire control are to be coded, the coding structure designations in Table 7.13.2 shall be used.

**Table 7.13.2 Obstacles to Rescue and Fire Control Coding Structure**

1	Access to structure impeded. Included are weak bridges, fences, gates, terrain, parked cars, private road layout, and the like.
2	Windowless wall. Included are glassless walls, walls with no breakable glass, fixed sash, and glass block walls.
3	Type of window impedes egress. Included are small steel sash, narrow casement windows, bars on windows, and fixed sunscreens.
4	Exits not accessible or substandard. Included are narrow, blocked, or locked exits, steep or open stairways, and weak hardware.
5	Internal arrangement. Included are stock piled high, partitions creating confusion, and obstructions.
6	Difficult to ventilate.
7	Multiple obstacles.
0	Obstacles to rescue and fire control not able to be classified further.
N	No unusual obstacles to rescue or fire control.
U	Obstacles to rescue and fire control undetermined or not reported.

## **Chapter 8 Preliminary Origin**

### **8.1\* Administration.**

**8.1.1 Purpose.** This chapter provides categories for documenting the following factors, which describe an area of origin: the point of origin or release of hazardous materials, any equipment involved in ignition or release of hazardous materials, the heat source, the materials involved, and the ignition sequence.

**8.1.2 Application.** Data elements within this chapter are used for documenting hazardous materials incidents and fires. Other data elements within this chapter provide categories that assist in describing fuels involved in wildland fires.

### **8.2 Data Collection.**

**8.2.1** The collection of the data required for the completion of this chapter shall be made or supervised by a certified fire officer who has demonstrated proficiency in all of the job performance requirements of NEPA 1021.

**8.2.2** If a separate fire or explosion investigation report is not completed, consideration shall be given to the application of the scientific method listed in Figure A.1.1.3 in the narrative of the incident report.

### 8.3 Area of Fire Origin or Release of Hazardous Materials.

**8.3.1** The area of fire origin or release of hazardous materials identifies the room, area or portion of a room, a vehicle or a portion of a vehicle, or possibly some open area devoted to a specific use where the fire or hazardous materials incident originated. The area of origin or release shall be classified according to the use of that room or space at the time of the incident. The use of an area and its level within the building shall each be kept separate for reporting purposes. Thus, words like "attic" and "basement" shall not be used to describe an area of origin. If these areas are used for storage, that shall be reported; if they are used for some other purpose, that use shall be reported.

**8.3.2\*** Where the area of origin is to be coded, the coding structure in Table 8.3.2 shall be used.

### 8.4 Equipment Identification.

**8.4.1** This section is used to identify the equipment where the heat of ignition originated. It can also be used to identify equipment that was involved in the release of hazardous materials or where a piece of equipment was involved in another type of incident. Analysis of the equipment involved is useful for improving product safety and preventive maintenance. It is just as important to know the kind of equipment that was used improperly as it is to know the kind of equipment that malfunctioned. Misuse can be the direct result of the way the equipment is designed and constructed. When reported as involved in ignition, equipment information provides an important part of the causal data. Data on equipment involved in ignition can be compared with other causal data to determine if the equipment was (or was not) operating properly. The piece of equipment shall be identified with two qualifying data elements: the data element identifying the power source on which the equipment operates (*see 8.4.4*), and the data element identifying whether the equipment is portable or stationary (*see 8.4.5*).

**8.4.2** When equipment is involved in ignition or the release of hazardous material, the following information shall also be recorded:

- (1) Type of equipment
- (2) Equipment manufacturer's name
- (3) Model designation
- (4) Serial number
- (5) Year of manufacture
- (6) Brand or trade name
- (7) Laboratory certification (UL, FM, AGA, etc.)
- (8) If electrical, the current and voltage rating on the label

### 8.4.3 Equipment Involved.

**8.4.3.1** The piece of equipment that was actually involved in the ignition or the release of hazardous materials shall be identified and classified regardless of whether it operated properly or improperly.

**8.4.3.2\*** Where equipment involved is to be coded, the coding structure in Table 8.4.3.2 shall be used.

**Table 8.3.2 Area of Origin Coding Structure**

0	Means of Egress.
01	Hallway, corridor, mall.
02	Exterior stairway. Included are fire escapes and exterior ramps.
03	Interior stairway. Included are interior ramps.
04	Escalator interior or exterior.
05	Lobby, entrance way.
09	Means of egress not able to be classified further.
1	Assembly, Sales Areas (groups of people).
11	Large assembly area with fixed seats (100 or more persons). Included are auditoriums, chapels, places of worship, theaters, arenas, and lecture halls.
12	Large open room without fixed seats (100 or more persons). Included are ballrooms, gymnasiums, roller rinks, bowling alley lanes, multi-use areas, and the like.
13	Small assembly area with or without fixed seats (less than 100 persons). Included are classrooms, meeting rooms, multipurpose rooms, and the like.
14	Lounge area. Included are living rooms, common rooms, TV rooms, dens, recreation rooms, family rooms, sitting rooms, music rooms, and the like.
15	Sales, showroom area. Excluded are display windows (56).
16	Library. Included are art galleries and exhibit spaces.
17	Swimming pool.
10	Assembly, sales areas not able to be classified further.
2	Function Areas.
21	Sleeping room for under five persons. Included are patient rooms, bedrooms, cells, lockups, and the like.
22	Sleeping area for five or more persons. Included are wards, dormitories, barracks, and the like.
23	Dining area, lunchroom, cafeteria. Included are dining rooms, mess rooms, canteens, and beverage service bars.
24	Kitchen, cooking area.
25	Lavatory, locker room, cloakroom. Included are checkrooms, rest rooms, bathrooms, powder rooms, washrooms, shower rooms, sauna baths, outhouses, and portable toilets.
26	Laundry room, area. Included are wash houses.
27	Office.

(continues)

Table 8.3.2 *Continued*

28	Personal service area. Included are health clubs, massage parlors, and barber and beauty treatment areas.
20	Function area not able to be classified further.
3	Technical Areas.
31	Laboratory.
32	Printing or photographic room, area.
33	First aid, treatment room. Included are areas where minor surgery is performed.
34	Operating room. Included are recovery rooms and operating theaters.
35	Electronic equipment room, area. Included are control centers, radar rooms, electronic computer areas, data processing centers, telephone equipment rooms, telephone booths, and the like.
36	Performance, stage area. Included are backstage areas, dressing rooms, ice rinks, boxing rings, and basketball floors.
37	Projection room, area. Included are stage light and spotlight areas.
38	Process, manufacturing area. Included are workrooms.
30	Technical area not able to be classified further.
4	Storage Areas.
41	Product storage room or area, storage tank, storage bin. Included are all areas where products are held awaiting process, shipment, use, or sale.
42	Closet.
43	Supply storage room or area. Included are tool rooms, maintenance supply rooms, dead storage rooms, and the like.
45	Shipping, receiving, loading area. Included are packing departments, mail rooms, and loading docks or bays.
46	Trash or rubbish area, container. Included are wastepaper storage areas, industrial waste containers, compactors, and garbage and trash chutes without incinerators. Excluded are incinerators (64).
47	Garage, carport, vehicle storage area.
40	Storage areas not able to be classified further.
5	Service Facilities.
51	Elevator, dumbwaiter. Included are the shaft areas.
52	Utility shaft. Included are pipe, ventilation, and conduit shafts.
53	Light shaft.

(continues)

Table 8.3.2 *Continued*

54	Chute. Included are laundry chutes and mail chutes. Excluded are trash chutes (46).
55	Duct. Included are air-conditioning, heating, cable, and exhaust ducts.
56	Display window.
57	Chimney. For fires not confined to the chimney, the area of origin should be classified as the first area where ignition occurs outside the chimney, and the chimney is the equipment involved in ignition.
58	Conveyor.
50	Service facilities not able to be classified further.
6	Service, Equipment Areas.
61	Machinery room, area. Included are elevator machinery rooms, engine rooms, pump rooms, head houses, refrigeration rooms, and the like.
62	Heating equipment room or area, water heater area.
63	Switchgear area, transformer vault.
64	Incinerator room, area. Included are all incinerator operations. Excluded are rubbish areas without incinerators (46).
65	Maintenance shop, area. Included are repair shops, welding shops, paint shops, workshops, and paint spraying areas.
66	Test cell.
67	Enclosure with pressurized air.
68	Enclosure with enriched oxygen atmosphere.
60	Service, equipment areas not able to be classified further.
7	Structural Areas.
71	Crawl space, substructure space.
72	Exterior balcony, open porch.
73	Ceiling and floor assembly, concealed floor/ceiling space.
74	Ceiling and roof assembly, concealed roof/ceiling space. Included are church steeples, cupolas, vacant attics, and the like.
75	Wall assembly, concealed wall space.
76	Exterior wall surface.
77	Exterior roof surface.
78	Awning.
70	Structural areas not able to be classified further.
8	Transportation, Vehicle Areas.
81	Passenger area of transportation equipment.

(continues)

Table 8.3.2 *Continued*

	Included are the operator areas where the operator and passengers are in the same compartment, as in automobiles, trucks, and buses.
82	Trunk, load-carrying area of transportation equipment.
83	Engine area, running gear, wheel area of transportation equipment.
84	Fuel tank, fuel line area of transportation equipment. Included are tanks and lines for flammable or combustible liquids up to the engine area.
85	Separate operating, control area of transportation equipment. Included are the bridges of ships, cockpits of planes, and the like. Excluded are automobiles, trucks, and buses (81).
86	Exterior exposed surface of transportation equipment.
80	Transportation, vehicle areas not able to be classified further.
9	Other Area of Origin.
91	On or near railroad right of way, embankment.
92	On or near highway, public way, street, parking lot.
93	Court, terrace, patio. Included are screened-in porches and patios.
94	Lawn, field, open area. Included are farmland, parks, rangeland, and vacant lots.
95	Wildland area, woods.
96	Area under construction or major renovation.
98	Vacant structural area with no current use.
99	Multiple areas of origin.
00	Area of fire origin or hazardous materials release not able to be classified further.
UU	Area of fire origin or hazardous materials release undetermined or not reported.

#### 8.4.4 Equipment Power Source.

**8.4.4.1** The equipment power source shall identify the power that actually operates the piece of equipment, not what produces that power. For example, if a diesel engine drives a generator that produces electricity to operate a motor, the power source for the motor would be electricity. Identification of the equipment power source, combined with other factors in the ignition sequence, can help identify fire causes for analysis. Data on the power source is useful for determining compliance with standards, analyzing the effectiveness of codes and regulations, and targeting prevention programs.

**8.4.4.2** Where the equipment power source is to be coded, the coding structure in Table 8.4.4.2 shall be used.

Table 8.4.3.2 Equipment Involved Coding Structure

1	Heating, Ventilating, and Air Conditioning.
111	Air conditioner.
112	Heat pump.
113	Fan.
114	Humidifier, non-heat producing. Excluded are heaters with built-in humidifiers (131, 132).
115	Ionizer.
116	Dehumidifier.
117	Evaporative cooler, cooling tower.
121	Masonry fireplace.
122	Factory-built fireplace.
123	Fireplace, insert/stove.
124	Stove, heating.
125	Chimney connector, vent connector.
126	Chimney— brick, stone, masonry.
127	Chimney— metal, including stovepipe, flue.
131	Furnace, local heating unit, built-in.
132	Furnace, central heating unit. Also included are built-in humidifiers. Included are furnaces where heat energy is created but the heat is ducted or piped to removed locations. Excluded are process furnaces and kilns (353) and localized heating equipment (division 14 series).
133	Boiler (power, process, heating).
141	Localized heating unit. Included are floor furnaces, wall heaters, and other localized heating equipment. Excluded are central heating units (132), catalytic heaters (142), oil-filled heaters (143), and baseboard heaters (146).
142	Heater, catalytic.
143	Heater, oil-filled.
144	Heat lamp.
145	Heat tape.
146	Heater, baseboard.
151	Water heater. Included are sink-mounted instant hot water heaters and waterbed heaters.
152	Steam line, heat pipe, hot air duct, radiators.
100	Heating, ventilating, and air conditioning not able to be classified further.
2	Electrical Distribution, Lighting, and Power Transfer.
211	Electrical power (utility) line. Excluded are wires from the utility pole or distribution transformer to the structure (212).
212	Electrical service supply wires; wires from the utility pole or distribution transformer to the structure.
213	Electric meter, meter box, and electric service entrance conductors.
214	Electrical wiring from meter box to distribution panel.

(continues)

Table 8.4.3.2 *Continued*

215	Panel board (fuse), switchboard, circuit breaker board with or without ground-fault interrupter.
216	Electrical branch circuit. Includes armored (metallic) cable, nonmetallic sheathing, or wire in conduit; copper branch circuit and aluminum branch circuit wiring.
217	Outlet, receptacle. Included are wall-type receptacles and electric dryer and stove receptacles.
218	Wall-type switch. Included are light switches.
219	Ground-fault interrupter (GFI), plug-in.
221	Transformer, distribution-type.
222	Overcurrent, disconnect equipment. Excluded are panel boards (215).
223	Low-voltage transformer (not more than 50 volts).
224	Generator.
225	Inverter, converter.
226	Uninterruptible power supply (UPS).
227	Surge protector.
228	Battery charger, rectifier.
229	Battery. Includes all battery types.
230	Lamp, lighting, other.
231	Lamp — tabletop, floor, desk. Excluded are lightbulbs (238).
232	Lantern, flashlight.
233	Incandescent lighting fixture.
234	Fluorescent lighting fixture, ballast.
235	Halogen lighting fixture or lamp.
236	Sodium, mercury vapor lighting fixtures or lamps.
237	Portable or movable work light, trouble light.
238	Lightbulb.
241	Nightlight.
242	Decorative lights, line voltage. Included are holiday lighting and Christmas lights.
243	Decorative or landscape lighting, low voltage.
244	Skeleton neon or outline electric discharge lighting. Excluded are electric signs (245).
245	Electric sign.
251	Fence, electric.
252	Traffic control device.
253	Lightning rod, arrester/grounding device.
261	Power cord, plug — detachable from appliance.
262	Power cord, plug — permanently attached to appliance.
263	Extension cord, flat.
264	Extension cord, round.
265	Electrical adapter.
200	Electrical distribution, lighting, and power transfer not able to be classified further.

(continues)

Table 8.4.3.2 *Continued*

3	Shop Tools or Industrial Equipment.
311	Power saw.
312	Power lathe.
313	Power shaper, router, jointer, planer.
314	Power cutting tool.
315	Power drill, screwdriver.
316	Power sander, grinder, buffer, polisher.
317	Power hammer, jackhammer.
318	Power nail gun, stud driver, stapler.
321	Paint dipper.
322	Paint flow coating machine.
323	Paint mixing machine.
324	Paint sprayer.
325	Coating machine. Included are asphalt-saturating and rubber-spreading machines.
331	Welding torch. Excluded are cutting torches (332).
332	Cutting torch. Excluded are welding torches (331).
333	Burners. Included are Bunsen burners, plumber furnaces, and blowtorches. Excluded are weed burners (523).
334	Soldering equipment.
341	Air compressor.
342	Gas compressor. Included are air compressors (341).
343	Atomizing equipment. Excluded is paint-spraying equipment (324).
344	Pump. Excluded are pumps integrated with other types of equipment.
345	Wet/dry vacuum (shop vacuum).
346	Hoist, lift, permanently installed crane. Excluded are freight or passenger elevators (433).
347	Powered jacking equipment. Included are hydraulic rescue tools.
348	Drilling machinery or equipment. Included is water or gas drilling equipment.
351	Heat treating equipment.
352	Incinerator.
353	Process furnace, oven, or kiln. Included are industrial ovens and furnaces. Excluded are ovens for cooking and baking food (646).
354	Tarpot, tar kettle.
355	Casting, molding, forging equipment.
356	Distilling equipment.
357	Digester, reactor.
358	Extractor, waste recovery machine. Included are solvent extractors such as used in drycleaning operations and garnetting equipment.
361	Industrial or material-handling conveyor. Excluded are agricultural conveyors (513).
362	Power transfer equipment: ropes, cables, blocks, belts.

(continues)

Table 8.4.3.2 *Continued*

363	Power take-off.
364	Powered valves.
365	Bearing or brake.
371	Picking, carding, weaving machine. Included are cotton gins.
372	Testing equipment.
373	Gas regulator. Included are propane, butane, LP-Gas or natural gas regulators, and flexible hose connectors to gas appliances.
374	Separate motor. Included are bench motors. Excluded are internal combustion motors (375).
375	Internal combustion engine (nonvehicular).
376	Printing press.
377	Car washing equipment.
300	Shop tools or industrial equipment not elsewhere classified.
4	Commercial or Medical Equipment.
411	Dental, medical, or other powered bed or chair. Included are powered wheelchairs.
412	Dental equipment, other.
413	Dialysis equipment.
414	Medical imaging equipment. Included are MRI, CAT scanners, and ultrasound.
415	Medical monitoring equipment.
416	Oxygen administration equipment.
417	Radiological, x-ray, radiation therapy equipment.
418	Sterilizer: medical. Excluded are nonmedical sterilizers (897).
419	Therapeutic equipment.
421	Transmitter.
422	Telephone switching gear, PBX.
423	TV monitor array. Included are control panels with multiple TV monitors and security monitoring stations. Excluded are single TV monitor configurations (753).
424	Studio-type TV camera. Included are professional studio television cameras. Excluded are home camcorders (756).
425	Studio-type sound recording/modulating equipment.
426	Radar equipment.
431	Amusement ride equipment.
432	Ski lift.
433	Passenger or freight elevator or lift.
434	Escalator.
441	Microfilm, microfiche viewing equipment.
442	Photo processing equipment. Included is microfilm processing equipment.
443	Vending machine.
444	Arcade game. Included are pinball machines and the like.

(continues)

Table 8.4.3.2 *Continued*

	Excluded are electronic video games (755).
445	Water fountain, water cooler.
446	Telescope. Included are radio telescopes.
451	Electron microscope.
452	Laboratory equipment. Excluded are electron microscopes (451).
400	Commercial or medical equipment not able to be classified further.
5	Garden Tools or Agricultural Equipment.
511	Combine, threshing machine.
512	Hay processing equipment.
513	Agricultural elevator or conveyor.
514	Silo loader, unloader, screw/sweep auger.
515	Feed grinder, mixer, blender.
516	Milking machine.
517	Pasteurizer. Included are milk pasteurizers.
518	Cream separator.
521	Sprayer, farm or garden.
522	Chain saw.
523	Weed burner.
524	Lawn mower.
525	Lawn, landscape trimmer, edger.
531	Lawn vacuum.
532	Leaf blower.
533	Mulcher, grinder, chipper. Included are leaf mulchers.
534	Snow blower, thrower.
535	Log splitter.
536	Post-hole auger.
537	Post driver, pile driver.
538	Tiller, cultivator.
500	Gardening tools or agricultural equipment not able to be classified further.
6	Kitchen and Cooking Equipment.
611	Blender, juicer, food processor, mixer.
612	Coffee grinder.
621	Can opener.
622	Knife.
623	Knife sharpener.
631	Coffee maker or teapot.
632	Food warmer, hot plate.
633	Kettle.
634	Popcorn popper.
635	Pressure cooker or canner.
636	Slow cooker.
637	Toaster, toaster oven, countertop broiler.
638	Waffle iron, griddle.
639	Wok, frying pan, skillet.
641	Bread-maker machine.
642	Deep fryer.
643	Grill, hibachi, barbecue.
644	Microwave oven.
645	Oven or rotisserie for cooking and baking food.
646	Range, stove with or without oven or cooking surface. Includes counter-mounted stoves.

(continues)



Table 8.4.3.2 *Continued*

647	Steam table, warming drawer/table.
651	Dishwasher.
652	Freezer when separate from refrigerator.
653	Garbage disposal.
654	Grease hood/duct exhaust fan.
655	Ice maker when separate from refrigerator.
656	Refrigerator, refrigerator/freezer.
600	Kitchen and cooking equipment not able to be classified further.
7	Electronic and Other Electrical Equipment.
710	Computer device, other.
711	Computer. Included are devices such as hard drives and modems installed inside the computer casing. Excluded are external storage devices (712).
712	External, computer storage device. Included are CD-ROM devices, DVD devices, tape drives, and disk drives. Excluded are such devices when they are installed within a computer (711).
713	Computer modem, external. Included are digital, ISDN modems, cable modems, and modem racks. Excluded are modems installed within a computer (711).
714	Computer monitor. Included are LCD or flat-screen monitors.
715	Computer printer.
716	Computer projection device, LCD panel, projector.
721	Adding machine, calculator.
722	Telephone or answering machine.
723	Cash register.
724	Copier.
725	Fax machine.
726	Paper shredder.
727	Postage, shipping meter equipment.
728	Typewriter.
731	Guitar.
732	Electronic piano, organ. Included are player pianos.
733	Musical synthesizer or keyboard. Excluded are pianos, organs (732).
741	CD player (audio). Excluded are computer CD and DVD players (712).
742	Laser disc player.
743	Radio. Excluded are two-way radios (744).
744	Radio, two-way.
745	Record player, phonograph, turntable.
747	Speakers, audio — separate components.
748	Stereo equipment. Included are receivers, amplifiers, and equalizers. Excluded are speakers (747).
749	Tape recorder or player.
751	Cable converter box.

(continues)

Table 8.4.3.2 *Continued*

752	Projector: film, slide, overhead.
753	Television.
754	VCR or VCR/TV combination.
755	Video game — electronic.
756	Camcorder, video camera.
757	Photographic camera and equipment. Included are digital cameras.
700	Electronic and other electrical equipment not able to be classified further.
8	Personal or Household Equipment.
811	Clothes dryer.
812	Trash compactor.
813	Washer/dryer combination (within one frame).
814	Washing machine — clothes.
821	Hot tub, whirlpool, spa.
822	Swimming pool equipment.
831	Broom — electric.
832	Carpet-cleaning equipment. Included are rug shampoos.
833	Floor buffer, waxer, cleaner.
834	Vacuum cleaner.
841	Comb, hairbrush.
842	Curling iron.
843	Electrolysis equipment.
844	Hair curler warmer.
845	Hair dryer.
846	Makeup mirror — lighted.
847	Razor, shaver.
848	Suntan equipment, sunlamp.
849	Toothbrush.
851	Baby bottle warmer.
852	Heated blanket, mattress pad.
853	Heating pad.
854	Clothes steamer.
855	Clothes iron.
861	Automatic door opener. Excluded are garage door openers (863).
862	Burglar alarm.
863	Garage door opener.
864	Gas detector.
865	Intercom.
866	Gas, smoke, or heat detector as part of an alarm system.
866	Smoke or heat detector, fire alarm. Includes control equipment.
868	Thermostat.
871	Ashtray.
872	Utility lighter.
873	Cigarette lighter, pipe lighter.
874	Fire-extinguishing equipment. Included are electronic controls.
875	Insect trap. Included are bug zappers.
876	Timer.
877	Novelty lighters.
881	Model vehicles.

(continues)

Table 8.4.3.2 *Continued*

	Included are model airplanes, boats, rockets, and powered vehicles used for hobby and recreational purposes.
882	Toy, powered.
883	Woodburning kit.
891	Clock.
892	Gun.
893	Jewelry-cleaning machine.
894	Scissors.
895	Sewing machine.
896	Shoe polisher.
897	Sterilizer for nonmedical purposes.
	Excluded are medical sterilizers (418).
800	Personal or household equipment not able to be classified further.
0	Other Equipment Involved.
000	Equipment involved not able to be classified further.
NNN	No equipment involved.
UUU	Equipment involved undetermined or not reported.

Table 8.4.4.2 Equipment Power Source Coding Structure

1	Electrical.
11	Electrical line voltage (50 volts or greater). Included is typical house current.
12	Batteries and low voltage (less than 50 volts).
10	Electrical not able to be classified further.
2	Gaseous Fuels.
21	Natural gas or other lighter-than-air gas. Included is hydrogen.
22	LP-Gas or other heavier-than-air gas. Included are propane and butane gas.
20	Gaseous fuels not able to be classified further.
3	Liquid Fuels.
31	Gasoline.
32	Alcohol.
33	Kerosene, diesel fuel, No. 1 or No. 2 fuel oil.
34	No. 4, No. 5, or No. 6 fuel oil. Included are industrial furnace oils and bunker oils.
30	Liquid fuel not able to be classified further.
4	Solid Fuels.
41	Wood, paper.
42	Coal, charcoal.
43	Chemicals.
40	Solid fuel not able to be classified further.
5	Other Power Source.
51	Compressed air.
52	Steam.
53	Water.
54	Wind.
55	Solar.
56	Geothermal.
57	Nuclear.
58	Fluid/hydraulic power source.
00	Power source not able to be classified further.
UU	Power source undetermined or not reported.

## 8.4.5 Equipment Portability.

8.4.5.1 The data element equipment "portability" identifies whether the piece of equipment is normally moved from location to location as it is used, or whether it is used in a single location.

8.4.5.2 Where the equipment portability is to be coded, the coding structure in Table 8.4.5.2 shall be used.

## 8.5 Heat Source.

8.5.1 The heat source identifies the heat energy that ignited the first material to cause the fire. This information, combined with other factors in the ignition sequence, permits analysis of how fires start. Also, some heat sources, such as cigarettes or lighters, are objects whose frequency of involvement in fires is of direct interest to fire prevention efforts. This data element applies to fires only.

8.5.2\* Heat Source Coding Structure. Where the heat source is to be coded, the coding structure provided in 8.5.2.1 through 8.5.2.7 shall be used.

8.5.2.1 Heat Source from Operating Equipment (1). For heat sources from operating equipment, the following coding structure shall be used:

- (1) Spark, ember, or flame from operating equipment — 11
- (2) Radiated, conducted heat from operating equipment — 12
- (3) Electrical arcing — 10
- (4) Heat sources from operating equipment not able to be classified further — 10

8.5.2.2 Hot or Smoldering Object (4). For hot or smoldering objects, the following coding structure shall be used:

- (1) Heat, spark from friction — 41
- (2) Molten, hot material — 42
- (3) Hot ember or ash — 43
- (4) Hot or smoldering objects not able to be classified further — 40

8.5.2.3 Heat from Explosives or Fireworks (5). For heat from explosives or fireworks, the following coding structure shall be used:

- (1) Munitions — 51
- (2) Tracer or incendiary ammunition — 52
- (3) Blasting agent, primer cord, black powder fuse — 53
- (4) Fireworks — 54
- (5) Model and amateur rockets — 55
- (6) Incendiary device — 56
- (7) Explosives or fireworks not able to be classified further — 50

Table 8.4.5.2 Equipment Portability Coding Structure

1	Portable. Included is equipment that is able to be carried or moved by one or two persons, is designed to be used in a variety of locations, and does not require tools to install or operate it.
2	Stationary. Included is equipment mounted at a fixed site or location or designed to be operated or used in one location.
U	Equipment portability undetermined or not reported.

**8.5.2.4 Heat from Other Open Flame or Smoking Material (6).**

For heat from other open flame or smoking material, the following coding structure shall be used:

- (1) Cigarette — 61
- (2) Pipe or cigar — 62
- (3) Heat from undetermined smoking material — 63
- (4) Match — 64
- (5) Lighter — 65
- (6) Candle, taper — 66
- (7) Warning or road flare — 67
- (8) Backfire from internal combustion engine — 68
- (9) Flames and torches used for lighting — 69
- (10) Heat from open flames or smoking materials not able to be classified further — 60

**8.5.2.5 Heat from Chemical or Natural Source (7).** For heat from chemical or natural sources, the following coding structure shall be used:

- (1) Sun's heat — 71
- (2) Spontaneous ignition, chemical reaction — 72
- (3) Lightning discharge — 73
- (4) Static discharge — 74
- (5) Heat from chemical or natural sources not able to be classified further — 70

**8.5.2.6 Heat Spread from Another Fire (8).** For heat spread from another fire, the following coding structure shall be used:

- (1) Heat from direct flame, convection currents spreading from another fire — 81
- (2) Radiated heat from another fire — 82
- (3) Heat from flying brand, ember, spark — 83
- (4) Conducted heat from another fire — 84
- (5) Heat spreading from another fire not able to be classified further — 80

**8.5.2.7 Other Heat Source (9).** For other heat sources, the following coding structure shall be used:

- (1) Multiple heat sources including multiple ignitions — 99
- (2) Heat source not able to be classified further — 00
- (3) Heat source undetermined or not reported — UU

**8.6 Material Identification.****8.6.1 Item Ignited.**

**8.6.1.1** The item ignited identifies the use or configuration of a material. Combined with the type of material data element, it can be used to classify the material first ignited, the material contributing most to smoke or flame development, or any other material and its use that a particular system might collect. This data element is designed for use with reporting information about fires. When used for recording the first material ignited, it shall identify the first item that had sufficient volume or heat intensity to extend to uncontrolled or self-perpetuating fire.

**8.6.1.2\*** Where the item ignited is to be coded, the coding structure in Table 8.6.1.2 shall be used.

**8.6.2 Type of Material.****Table 8.6.1.2 Item Ignited Coding Structure**

1	Structural Component, Finish.
11	Exterior roof covering, surface, finish.
12	Exterior sidewall covering, surface, finish. Included are eaves.
13	Exterior trim, appurtenances. Included are doors, porches, and platforms.
14	Floor covering, surface. Included are rugs, carpets, or mats.
15	Interior wall covering. Included are cloth wall coverings, wood paneling, and items permanently affixed to a wall or door. Excluded are curtains and draperies (36) and decorations (42).
16	Interior ceiling covering, surface. Included are cloth permanently affixed to ceiling, and acoustical tile.
17	Structural member, framing.
18	Thermal, acoustical insulation within wall, partition, or floor/ceiling space. Included are fibers, batts, boards, and loose fills.
10	Structural component or finish not able to be classified further.
2	Furniture, Utensils. Included is built-in furniture.
21	Upholstered sofa, chair, vehicle seats.
22	Nonupholstered chair, bench.
23	Cabinetry. Included are filing cabinets, pianos, dressers, chests of drawers, desks, tables, and bookcases. Excluded are TV sets, bottle warmers, and appliance housings (25).
24	Ironing board.
25	Appliance housing or casing.
26	Household utensils. Included are kitchen and cleaning utensils.
20	Furniture, utensils not able to be classified further.
3	Soft Goods, Wearing Apparel.
31	Mattress, pillow.
32	Bedding, blanket, sheet, comforter. Included are heating pads.
33	Linen, other than bedding. Included are towels and tablecloths.
34	Wearing apparel not on a person.
35	Wearing apparel on a person.
36	Curtain, blind, drapery, tapestry.
37	Goods not made up. Included are fabrics and yard goods.
38	Luggage.
30	Soft goods, wearing apparel not able to be classified further.
4	Adornment, Recreational Material, Signs, Outdoor Material.
41	Christmas tree.
42	Decoration.

(continues)

Table 8.6.1.2 *Continued*

43	Sign. Included are outdoor signs such as billboards.
44	Chips. Included are wood chips.
45	Toy, game.
46	Awning, canopy.
47	Tarpaulin, tent.
40	Adornment, recreational material, signs, outdoor material not able to be classified further.
5	Supplies and Stock.
51	Box, carton, bag, basket, barrel Included are wastebaskets.
52	Material being used to make a product. Included are raw materials used as input to a manufacturing or construction process. Excluded are finished products.
53	Pallet, skid (not in use). Excluded are palletized stock (58).
54	Rope, cord, twine, yarn.
55	Packing, wrapping material.
56	Baled goods or material. Included is bale storage.
57	Bulk storage.
58	Palletized material, material stored on pallets.
59	Rolled, wound material. Included are rolled paper and fabrics.
50	Supplies and stock not able to be classified further.
6	Liquids, Pipes, and Filters.
61	Atomized or vaporized liquid. Included are aerosols.
62	Fuel. Included is flammable gas or ignitable liquid in or escaping from an engine or burner.
63	Flammable gas or ignitable liquid in or escaping from its final container. Included are flammable gases or ignitable liquids in their final container prior to direct transfer into the engine or burner or the piping associated with this final transfer. Excluded are flammable gases or ignitable liquids stored in a container such that they need to be transferred to another container before use (64).
64	Flammable gas or ignitable liquid in or escaping from a container or pipe. Excluded are fuels in their final container prior to direct transfer to the engine or burner or in the piping associated with the final transfer (63).
65	Flammable gas or ignitable liquid uncontained. Included are accelerants.
66	Pipe, duct, conduit, hose.
67	Pipe, duct, conduit covering. Included are insulating materials whether for acoustical or thermal purposes, and whether inside or outside the pipe, conduit, or duct.

(continues)

Table 8.6.1.2 *Continued*

68	Filter. Included are evaporative cooler pads.
60	Liquids, pipes, and filters not able to be classified further.
7	Organic Materials.
71	Agricultural product. Included are fruits and vegetables.
72	Light vegetation — not crop. Included are grass, leaves, needles, chaff, mulch, and compost.
73	Heavy vegetation — not crop. Included are trees and brush.
74	Animal living or dead.
75	Human living or dead.
76	Cooking materials. Included are edible materials for man or animal. Excluded are cooking utensils (26).
77	Feathers or fur not on a bird or animal, but not processed into a product.
70	Organic materials not able to be classified further.
8	General Materials.
81	Electrical wire, cable insulation. Insulation on wiring should not be classified as the first item ignited unless there were no other materials in the immediate area, such as might be found in a cable tray or electrical vault. The first item of significance that caught fire from the wire or wire insulation should be classified as the item first ignited.
82	Transformer. Included are transformer fluids.
83	Conveyor belt, drive belt, V-belt.
84	Tire.
85	Railroad ties.
86	Fence or pole.
87	Fertilizer.
88	Pyrotechnics or explosives.
89	Recyclable material. Included are materials being collected or set aside for recycling, whether in a container or loose.
9	General Materials Continued.
91	Book.
92	Magazine, newspaper, writing paper. Included are files.
93	Adhesive.
94	Dust, fiber, lint. Included are sawdust and excelsior.
95	Film, residue. Included are paint or resin film and paint or resin residue on spray booths, exhaust ducts or dip tank drainboards, chimney residue (soot), and other films and residues produced as a by-product of an operation.
96	Rubbish, trash, waste.
97	Oily rags.

(continues)

**Table 8.6.1.2** *Continued*

98	Item ignited not significant or not applicable. This subdivision should be used only when this data element is being used for reporting an item ignited as other than the first item ignited and when the circumstances of the situation are such that the item ignited is not applicable or significant.
99	Multiple items first ignited. This subdivision should be used only where there are multiple fires started at approximately the same time on the same property and more than one item was initially involved. If one major item was involved, the appropriate classification for that item should be used.
00	Item ignited not able to be classified further.
UU	Item ignited undetermined or not reported.

**8.6.2.1** The data element "type of material" identifies the composition of the material as it exists in its raw, common, or natural state. Combined with the data element "item ignited," it will identify the material first ignited or the material contributing most to smoke or flame development, or the material involved in any other situation that is to be recorded. This data element applies to fires only. When used for recording the first material ignited, it shall identify the first item that had sufficient volume or heat intensity to extend to uncontrolled or self-perpetuating fire.

**8.6.2.2\* Type of Material Coding Structure.** Where the type of material is to be coded, the following coding structure shall be used:

- (1) Naturally occurring wood or cellulose (0), as follows:
  - (a) Grass — 01
  - (b) Leaves, needles, litter (vegetative) — 02
  - (c) Duff (the material between the leaf and/or needle cover and the mineral soil) — 03
  - (d) Peat — 04
  - (e) Live tree, bush — 05
  - (f) Snag (standing dead tree) — 06
  - (g) Logs — 07
  - (h) Slash (felled brush, limbs, tree tops) — 08
  - (i) Rotten wood — 09
- (2) Flammable gas (not gasoline) (1), as follows:
  - (a) Natural gas — 11
  - (b) LP-Gas — 12
  - (c) Anesthetic gas — 13
  - (d) Acetylene gas — 14
  - (e) Hydrogen — 15
  - (f) Gases not able to be classified further — 10
- (3) Flammable or combustible liquid (2), as follows:
  - (a) Class IA flammable liquid — 21
  - (b) Class IB flammable liquid — 22
  - (c) Gasoline — 23
  - (d) Class IC flammable liquid — 24
  - (e) Class II combustible liquid — 25
  - (f) Class IIIA combustible liquid — 26
  - (g) Class IIIB combustible liquid — 27
  - (h) Flammable or combustible liquids not able to be classified further — 20
- (4) Volatile solid or chemical (3), as follows:
  - (a) Fat, grease (food) — 31
  - (b) Grease (nonfood) — 32
  - (c) Polish — 33
  - (d) Adhesive, resin, tar — 34
  - (e) Applied paint, varnish — 35
  - (f) Combustible metal — 36
  - (g) Solid chemical — 37
  - (h) Radioactive material — 38
  - (i) Volatile solids or chemicals not able to be classified further — 30
- (5) Plastics (4) — 41
- (6) Natural product (5), as follows:
  - (a) Rubber — 51
  - (b) Cork — 52
  - (c) Leather — 53
  - (d) Hay, straw — 54
  - (e) Grain, natural fiber (preprocess) — 55
  - (f) Coal, coke, briquettes, peat — 56
  - (g) Food, starch — 57
  - (h) Tobacco — 58
  - (i) Natural products not able to be classified further — 50
- (7) Wood or paper (processed) (6), as follows:
  - (a) Wood residue — 61
  - (b) Round timber — 62
  - (c) Sawn wood — 63
  - (d) Plywood — 64
  - (e) Fiberboard, particleboard, and hardboard — 65
  - (f) Wood pulp, wood fibers — 66
  - (g) Paper — 67
  - (h) Cardboard — 68
  - (i) Wood or paper (processed) not able to be classified further — 60
- (8) Fabric, textile, fur (7), as follows:
  - (a) Fabric, fibers, cotton, blends, rayon, wool, silk, finished goods — 71
  - (b) Fur, whether as natural material for finished goods — 74
  - (c) Synthetic hair — 75
  - (d) Human hair — 76
  - (e) Plastic-coated fabric — 77
  - (f) Fabrics, textiles, furs not able to be classified further — 70
- (9) Material compounded with oil (8), as follows:
  - (a) Linoleum — 81
  - (b) Oilcloth — 82
  - (c) Asphalt-treated material — 86
  - (d) Materials compounded with oil not able to be classified further — 80
- (10) Other type of material (9), as follows:
  - (a) Chaff — 91
  - (b) Mulch — 92
  - (c) Litter, combinations of materials having no value in the same container or pile — 93
  - (d) Animal — 94
  - (e) Type of material not significant or not applicable — 98
  - (f) Multiple types of material first ignited — 99

- (g) Type of material not able to be classified further — 00
- (h) Type of material undetermined or not reported — UU

**8.7 Level of Origin.** The data element “level of origin” identifies the distance either above or below grade level where an incident originated. This shall be recorded as the story level or a number that represents the equivalent number of stories based on 10 ft (3 m) per story. The letter “A” or “B” shall precede the number to indicate whether the level is above (A) or below (B) grade. In the case of a structure such as a tunnel, grade shall be considered the level at the entrance. A fire on the ground-story level of a building would be recorded as A001. A fire originating at the ceiling level in a warehouse 35 ft (11 m) above the floor would be recorded as A004 [grade to 10 ft (3 m) = 001, 11 ft to 20 ft (4 m to 6 m) = 002, 21 ft to 30 ft (7 m to 9 m) = 003, and 31 ft to 40 ft (10 m to 12 m) = 004].

### 8.8 Occupant of Room or Space of Origin at Time of Ignition.

**8.8.1** Occupant of room identifies the person or persons who were present in the room or the space of origin at the time of ignition.

**8.8.2** Where the occupant of room or space of origin at time of ignition is to be coded, the coding structure in Table 8.8.2 shall be used.

### 8.9 Wildland Fuel Model.

**8.9.1** The National Fire Danger Rating System (NFDRS) used by wildland fire agencies in the United States identifies a set of wildland fuel complexes from which fire behavior and spread estimates can be calculated. Each fuel model has a defined fuel depth, density, and load that represents fuel conditions found in various parts of the United States.

**Table 8.8.2 Occupant of Room or Space of Origin at Time of Ignition Coding Structure**

1	Owner. Included are family members.
2	Employee and/or customer.
3	Lessee, renter, guest, patient. Included are family members.
4	Maintenance personnel.
5	Contractor on premises.
6	Trespasser. Included are fires in stolen vehicles.
7	Room or space of origin temporarily not occupied. Included are spaces where there have been no people present for up to one week.
8	Room or space of origin not occupied. Included are spaces where there have been no people present for one week or more.
0	Occupant of room or space of origin at time of ignition not able to be classified further.
U	Occupant of room or space of origin at time of ignition undetermined or not reported.

**8.9.2\* Wildland Fuel Model Coding Structure.** Where the wildland fuel model classification is to be coded, the following coding structure shall be used:

- (1) Fuel Model A — Annual grasses — 1
- (2) Fuel Model B — Mature brush [6 ft (2 m) and over] — 2
- (3) Fuel Model C — Open pine with grass — 3
- (4) Fuel Model D — Southern rough — 4
- (5) Fuel Model E — Hardwood litter (fall) — 5
- (6) Fuel Model F — Intermountain West brush — 6
- (7) Fuel Model G — West Coast conifers; close, heavy down materials — 7
- (8) Fuel Model H — Short-needle conifers; normal down woody materials — 8
- (9) Fuel Model I — Heavy slash, clear-cut conifers greater than 25 tons (25,400 kg) per acre — 9
- (10) Fuel Model J — Medium slash, heavily thinned conifers [less than 25 tons (25,400 kg) per acre] — 10
- (11) Fuel Model K — Light slash [less than 15 tons (15,240 kg) per acre] — 11
- (12) Fuel Model L — Perennial grasses — 12
- (13) Fuel Model N — Sawgrass, marsh needle-like grass — 14
- (14) Fuel Model O — High pocosin — 15
- (15) Fuel Model P — Southern long-needle pine — 16
- (16) Fuel Model Q — Alaska black spruce — 17
- (17) Fuel Model R — Hardwood litter (summer) — 18
- (18) Fuel Model S — Tundra — 19
- (19) Fuel Model T — Sagebrush with grass — 20
- (20) Fuel Model U — Western long-needle pine — 21
- (21) Wildland fuel model not applicable — N
- (22) Wildland fuel model undetermined or not reported — UU

### 8.10 Fire Danger Rating Class.

**8.10.1** The fire danger rating class refers to one method of describing the wildland fire threat in a particular area, based on the NFDRS. It is derived from both constant and variable fire danger factors that affect the ignition, spread, and difficulty of control of fires and the damage they cause. Factors considered in estimating the fire danger are temperature, relative humidity, wind speed, fuel type, and fuel moisture. This information is used in fire prevention activities to determine when fires are most likely to occur and their severity. “Burning bans” and park or forest closures or restrictions can be invoked based on the fire danger rating class. It is also useful in pre-suppression planning to determine staffing levels and critical initial attack times.

**8.10.2** Where the fire danger rating class is to be coded, the coding structure in Table 8.10.2 shall be used.

**Table 8.10.2 Fire Danger Rating Coding Structure**

1	Class 1 — Low fire danger.
2	Class 2 — Moderate fire danger.
3	Class 3 — High fire danger.
4	Class 4 — Very high fire danger.
5	Class 5 — Extreme fire danger.
U	Fire danger rating class undetermined or not reported.

## Chapter 9 Incident Growth and Spread

### 9.1 Administration.

**9.1.1 Purpose.** The purpose of the data elements in this chapter is to provide a uniform way of identifying factors that contribute to the growth and spread of fire.

**9.1.2 Application** The data elements in this chapter will identify and analyze building and equipment design as it relates to factors that contribute to the growth and spread of the fire.

### 9.2 Contributing Factors.

**9.2.1** Contributing factors shall be used to report incident information that was not captured by other data elements and that had a bearing on ignition, fire or smoke spread, incident complexity, or the existence of hazardous conditions.

**9.2.2** Contributing factors shall be used to clarify or complete elements of information that describe the incident.

**9.2.3** Consideration shall be given to providing multiple fields for recording contributing factors so that more than one factor can be recorded.

**9.2.4\* Contributing Factors Coding Structure.** Where the contributing factors are to be coded, the following coding structure provided in 9.2.4.1 through 9.2.4.7 shall be used.

**9.2.4.1 Building Construction or Design Factors (1).** For building construction or design factors, the following coding structure shall be used:

- (1) Roof collapse — 112
- (2) Ceiling collapse — 121
- (3) Holes or openings in walls or ceilings — 125
- (4) Wall collapse — 131
- (5) Difficult to ventilate — 132
- (6) Combustible interior finish — 134
- (7) Balloon construction — 137
- (8) Arrangement of partitions — 138
- (9) Arrangement of stock or contents — 139
- (10) Floor collapse — 141
- (11) Lack of fire barrier walls or doors — 151
- (12) Transoms — 153
- (13) Attic undivided — 161
- (14) Insulation: combustible — 166
- (15) Stairwell not enclosed — 173
- (16) Elevator shaft — 174
- (17) Dumbwaiter — 175
- (18) Ducts: vertical — 176
- (19) Chute: rubbish, garbage, laundry, etc. — 177
- (20) Supports unprotected — 181
- (21) Wood I-joist or open truss floor construction — 182
- (22) Wood roof truss construction — 183
- (23) Wood truss construction — 185
- (24) Metal truss construction — 186
- (25) Fixed burglar protection assemblies (bars, grills on windows and doors) — 187
- (26) Quick-release failure of bars on windows or doors — 188
- (27) Previous damage by fire — 192
- (28) Building construction or design factors not able to be classified further — 100

**9.2.4.2 Act or Omission (2).** For an act or omission, the following coding structure shall be used:

- (1) Doors left open or outside door unsecured — 213

- (2) Operation of fire doors obstructed or impeded — 214
- (3) Violation of fire or life safety code — 218
- (4) Illegal and clandestine drug operation — 222
- (5) Intoxication: drugs or alcohol — 232
- (6) Riot or civil disturbance — 253
- (7) Person(s) interfered with operations — 254
- (8) Accelerant used — 283
- (9) Acts or omissions not able to be classified further — 200

**9.2.4.3 On-Site Materials (3).** For on-site materials, the following coding structure shall be used:

- (1) Aisles blocked — 311
- (2) Significant and unusual fuel load from structure components — 312
- (3) Significant and unusual fuel load from contents — 313
- (4) Significant and unusual fuel load outside from natural environment conditions — 314
- (5) Significant and unusual fuel load from man-made condition — 315
- (6) Radiological hazard on site — 321
- (7) Biological hazard on site — 322
- (8) Cryogenic hazard on site — 323
- (9) Hazardous chemical, corrosive material, or oxidizer — 324
- (10) Flammable or combustible liquid hazard — 325
- (11) Explosives — 327
- (12) Fireworks — 328
- (13) Decorations — 331
- (14) Gas: natural or lighter than air — 341
- (15) Gas: Liquefied petroleum (LP-Gas) or heavier than air — 342
- (16) Combustible storage greater than 12 ft (4 m) to top of storage — 361
- (17) High rack storage — 362
- (18) Building contents not able to be classified further — 300

**9.2.4.4 Delays (4).** For delays, the following coding structure shall be used:

- (1) Delayed detection of fire — 411
- (2) Delayed reporting of fire — 412
- (3) Alarm system malfunction — 413
- (4) System appropriately shut off — 414
- (5) System inappropriately shut off — 415
- (6) Inability to contact fire department — 421
- (7) Information incomplete or incorrect — 424
- (8) Communications problem; system failure of local, public, or other telephone network — 425
- (9) Blocked roadway due to construction — 431
- (10) Poor access for fire apparatus — 434
- (11) Traffic delay — 435
- (12) Trouble finding location — 436
- (13) Size, height, or other building characteristic delayed access to fire — 437
- (14) Power lines down/arcing — 438
- (15) Hydrant access blocked — 441
- (16) Fire department connection access blocked — 442
- (17) Poor access for fire fighters — 443
- (18) Secured area — 444
- (19) Guard dogs — 445
- (20) Aggressive animals, excluding guard dogs — 446
- (21) Suppression delayed due to evaluation of hazardous or unknown materials at incident scene — 447
- (22) Locked or jammed doors — 448
- (23) Apparatus failure at remote location — 451
- (24) Hydrants inoperative — 452



- (25) Airspace restriction — 461
- (26) Military activity — 462
- (27) Hostile activity — 471
- (28) Closest apparatus unavailable — 481
- (29) Delays not able to be classified further — 400

**9.2.4.5 Protective Equipment (5).** For protective equipment, the following coding structure shall be used:

- (1) Extinguishing system failure — 510
- (2) Standpipe/fire department connection problem — 520
- (3) Water supply: inadequate private — 531
- (4) Water supply: inadequate public — 532
- (5) Electrical power outage — 543
- (6) Failure of rated fire protection assembly — 561
- (7) Protective equipment or systems negated illegally or irresponsibly — 562
- (8) Protective equipment not able to be classified further — 500

**9.2.4.6 Natural Conditions (7).** For natural conditions, the following coding structure shall be used:

- (1) Drought or low fuel moisture — 711
- (2) Humidity: low — 712
- (3) Humidity: high — 713
- (4) Temperature: low — 714
- (5) Temperature: high — 715
- (6) Fog — 721
- (7) Flooding — 722
- (8) Ice — 723
- (9) Rain — 724
- (10) Snow — 725
- (11) Wind — 732
- (12) Earthquake — 741
- (13) Vegetation fuel loading — 760
- (14) Threatened or endangered species — 771
- (15) Timber sale activity — 772
- (16) Fire restriction — 773
- (17) Historic disturbance (past fire history can dictate fire behavior) — 774
- (18) Urban-wildland interface — 775
- (19) Natural conditions not able to be classified further — 700

**9.2.4.7 Egress and Exit Factors (9).** For egress and exit factors, the following coding structure shall be used:

- (1) Occupancy load above legal limit — 911
- (2) Evacuation activity impeded fire department access — 912
- (3) Window type impedes egress — 913
- (4) Windowless wall — 914
- (5) Young occupants — 921
- (6) Elderly occupants — 922
- (7) Physically disabled occupants — 923
- (8) Mentally disabled occupants — 924
- (9) Physically restrained/confined occupants — 925
- (10) Medically disabled occupants — 926
- (11) Special event — 941
- (12) Public gathering — 942
- (13) Egress and exit factors not able to be classified further — 900
- (14) Contributing factors undetermined or not reported — UUU
- (15) Not investigated by a certified fire investigator — NI

### 9.3 Fire Detection and Alarm.

#### 9.3.1 Method of Detection.

**9.3.1.1** The data element “method of detection” is used to identify the first person or system to detect the fire regardless of what action that person or system took toward reporting the fire. This data element allows study of the advantages and disadvantages of different methods of detection. It also allows detection “internal” to the property to be distinguished from detection outside, helping explain delays in detection.

**9.3.1.2** Where the method of detection is to be coded, the coding structure in Table 9.3.1.2 shall be used.

**Table 9.3.1.2 Method of Detection Coding Structure**

1	Building or Property Occupant.
11	Resident.
12	Tenant, permittee.
13	Contractor personnel.
10	Building or property occupant not able to be classified further.
2	Watchman, Guard for the Property on a Full-Time Basis.
21	Building or property guard.
22	Reporting agency fire lookout.
23	Cooperator fire lookout.
24	Reporting agency fire guard.
25	Cooperator fire guard.
20	Watchman, guard not able to be classified further.
3	Roving Police, Guard Patrol.
31	Reporting agency roving fire patrol.
32	Cooperator roving fire patrol.
33	Roving non-fire patrol.
30	Roving police, guard patrol not able to be classified further.
4	Non-Occupant.
41	Non-occupant.
42	Visitor in area.
43	Neighbor.
44	On-duty reporting agency employee (including volunteers).
45	Cooperator or cooperator employee.
40	Non-occupant not able to be classified further.
5	Automatic Suppression System with Alarm.
50	Automatic suppression system with alarm.
6	Automatic Fire, Heat, Smoke Detection System.
60	Automatic fire, heat, smoke detection system.
7	Aerial Detection.
71	Agency fire patrol aircraft.
72	Cooperator fire patrol aircraft.
73	Aircraft in vicinity.
74	Aircraft on regular route passing through area.
75	Infrared detection system.
76	Satellite.
70	Aerial detection not able to be classified further.
8	Fire Detected but No Alarm Given.
81	Detected after self-termination, damage easily visible.
82	Detected after self-termination, damage not easily visible.

(continues)



**Table 9.3.1.2** *Continued*

0	Other Method of Detection.
00	Method of detection not able to be classified further.
UU	Method of detection undetermined or not reported.

**9.3.2 Method of Alarm to the Fire Department.**

**9.3.2.1** The data element for the method of alarm is used to describe the method by which the incident was first brought to the attention of the fire department or appropriate alarm center. It is used to measure the different methods by which alarms are reported. This can determine the use of and accessibility to different communication methods to the fire department, which can be useful in making investment decisions.

**9.3.2.2** Where the method of alarm to the fire department is to be coded, the coding structure in Table 9.3.2.2 shall be used.

**Table 9.3.2.2 Method of Alarm to the Fire Department Coding Structure**

1	911 direct to fire service. The reporting person dials 911 and reaches the fire alarm center.
2	911 direct to other agency with transfer capability. The reporting person dials 911 and reaches some agency other than the fire alarm center, and the call must be transferred to the fire alarm center.
3	Direct to fire service, not 911. The reporting person dials a regular telephone number and reaches the fire alarm center.
4	Direct to other agency with transfer capability, not 911. The reporting person dials a regular telephone number and reaches some agency other than the fire alarm center, and the call must be transferred to the fire alarm center.
5	Radio. Included are fires reported by radio from vehicles on fire department, police department, natural resources department, or citizens band radio frequencies directly to alarm headquarters.
6	Direct contact by person to fire service. Included are fires seen from or reported to a fire station.
7	Municipal fire alarm system. Included are telegraph systems, radio systems, voice signal systems, and auxiliary connections to them.
8	Private fire alarm system. Included are signals received from central stations and remote stations.
0	Method of alarm to the fire department not able to be classified further.
U	Method of alarm to the fire department undetermined or not reported.

**9.3.3 Delay in Alarm.**

**9.3.3.1** When there is a delay in the transmission of an alarm, that delay is often at least partially responsible for the incident

growing in magnitude beyond what might have been easily handled by the fire department. Understanding the reason for the delay can help explain the extent of damage. When evaluated over a number of incidents, the reasons for delays can point to the need for corrective action by the fire department, whether through public education or other actions.

**9.3.3.2** Where the delay in alarm is to be coded, the coding structure in Table 9.3.3.2 shall be used.

**Table 9.3.3.2 Delay in Alarm Coding Structure**

1	Person investigated or took time to verify there was an emergency.
2	Person assumed that the fire department had already been notified.
3	Person was too busy with emergency. Included are trying to rescue other persons or remove property, determining the extent of the emergency, or taking inappropriate actions such as calling the owner or notifying management. Excluded are investigating to determine whether there is an emergency (1) and actual fire fighting (4).
4	Person thought he or she could control fire or emergency by self.
5	Person reporting the fire was unable to get through to the fire department by phone.
6	Person reporting the fire could not convey the correct message. Included are situations where the person discovering the fire was physically or mentally disabled (not fire related) to a degree that the disability interfered with the ability to promptly notify the fire department, as well as situations where the person reporting the emergency could not speak the same language as the alarm operator.
7	Alarm transmission system failure. Included are alarm box malfunctions.
8	No unusual delay.
0	Delay in alarm not able to be classified further.
U	Delay in alarm undetermined or not reported.

**Chapter 10 Detection, Alarm, and Control Equipment****10.1 Administration.**

**10.1.1 Purpose and Application.** The purpose of the data elements outlined in this chapter is to provide a uniform way to identify protection and detection systems and their effectiveness and use. These data elements can be used to identify how occupants are alerted, the type and coverage of automatic extinguishment, the actions of the fire department, and the effectiveness of the various fire defenses. In general, a series of data elements shall be collected for each fire defense measure, including the type of system, the coverage provided by the system, the performance or effectiveness of the system, and the reason for the system's failure.

**10.1.2 Special Definitions.** A list of special terms used in this chapter follows:

(1) Manual. See 3.3.6.4.

**10.2 Limitations.** The data elements describe fire defense features of an occupancy as well as classify the actions of the

protection systems and the effectiveness of those systems during a fire. The incident report classification of protection systems is intended to describe not the design criteria but rather the effectiveness of that system. For example, a building might be equipped with a complete sprinkler system, but that system might not have been designed for the specific hazard it was protecting. The fire officer is not likely to have knowledge of how the system was designed at the time the incident report is completed.

**10.3 Automatic Detection.** The purpose of the collection of these data elements shall be to track systems that are designed to detect fires and trigger an alarm, activate an extinguishing system, or take some other action automatically.

**10.3.1\* Automatic Detector Coverage Coding Structure.** Where the automatic detector coverage is to be coded, the coding structure in Table 10.3.1 shall be used.

**10.3.2\* Detector Type Coding Structure.** Where the detector type is to be coded, the following coding structure shall be used:

- (1) Smoke detector — 1
- (2) Heat detector — 2
- (3) Combination smoke detector and heat detector — 3
- (4) Sprinkler/water flow detection — 4
- (5) More than one type of detection system present — 5
- (6) No detector present — N
- (7) Detector type undetermined or not reported — U

**10.3.3\* Detector Power Supply Coding Structure.** Where the detector power supply is to be coded, the following coding structure shall be used:

- (1) Battery only — 1
- (2) Hard wire only — 2
- (3) Plug-in only — 3
- (4) Hard wire with battery backup — 4
- (5) Plug-in with battery backup — 5
- (6) Mechanical power — 6
- (7) More than one type of power supply (different detectors) — 7
- (8) No detector present — N
- (9) Detector power supplies not able to be classified further — 0
- (10) Detector power supplies undetermined or not reported — U

#### 10.3.4\* Performance of Fire Detection Equipment.

**10.3.4.1 Detector Operation.** Where the detector operation is to be coded, the coding structure in Table 10.3.4.1 shall be used.

**Table 10.3.1 Automatic Detector Coverage Coding Structure**

1	Complete automatic detection coverage. The system complies with the requirements of NFPA 72.
2	Partial automatic detection coverage.
N	No automatic detection.
0	Automatic detection not able to be classified further.
U	Automatic detection undetermined or not reported.

**Table 10.3.4.1 Detector Operation Coding Structure**

1	Fire too small to activate detector.
2	Detector operated.
3	Detector failed to operate.
U	Detector operation undetermined or not reported.

**10.3.4.2 Detector Effectiveness.** Where the detector effectiveness is to be coded, the coding structure in Table 10.3.4.2 shall be used.

**Table 10.3.4.2 Detector Effectiveness Coding Structure**

1	Detector alerted occupants; occupants responded.
2	Detector alerted occupants; occupants failed to respond.
3	There were no occupants.
4	Detector failed to alert occupants.
N	Detector effectiveness not a factor.
U	Detector effectiveness undetermined or not reported.

**10.3.5\* Reason for Detector Failure Coding Structure.** Where the reason for detector failure is to be coded, the following coding structure shall be used.

- (1) Failure of hardwired power supply — 1
- (2) Improper installation or placement of detector — 2
- (3) Defective detector instrument — 3
- (4) Inadequate maintenance — 4
- (5) Battery missing or disconnected — 5
- (6) Battery was discharged — 6
- (7) No detector failure — N
- (8) Reason for detector failure not able to be classified further — 0
- (9) Reason for detector failure undetermined or not reported — U

**10.4\* Automatic Alarm Transmission Coding Structure.** Where the automatic alarm transmission is to be coded, the following coding structure shall be used:

- (1) Remote station system to fire department managed location — 1
- (2) Remote station system to non-fire department-managed location — 2
- (3) Proprietary system — 3
- (4) Central station system — 4
- (5) Auxiliary system with automatic master box — 5
- (6) Manual local — 6
- (7) Manual remote — 7
- (8) No automatic alarm transmission equipment provided — N
- (9) Automatic alarm transmission equipment not able to be classified further — 0
- (10) Automatic alarm transmission equipment undetermined or not reported — U

**10.5 Protection.** This section shall provide the data elements to report data about various fire-suppression systems and their performance.

### 10.5.1 Automatic Extinguishing System.

**10.5.1.1\* Type of Automatic Extinguishing System.** Where the type of automatic extinguishing system present is to be coded, the following coding structure shall be used:

- (1) Wet-pipe sprinkler system — 1
- (2) Dry-pipe sprinkler system — 2
- (3) Other sprinkler system — 3
- (4) Dry chemical system — 4
- (5) Foam system — 5
- (6) Halogen-type system — 6
- (7) Carbon dioxide system — 7
- (8) Water spray system — 8
- (9) Types of automatic extinguishing systems not able to be classified further — 0
- (10) No automatic extinguishing system present — N
- (11) Type of automatic extinguishing system undetermined or not reported — U

**10.5.1.2\* Coverage of Automatic Extinguishing System.** Where the coverage of an automatic extinguishing system is to be coded, the following coding structure shall be used:

- (1) Complete coverage of a building or structure — 1
- (2) Partial coverage of a building or structure — 2
- (3) Total flooding of a room or space protected — 3
- (4) Localized coverage — 4
- (5) Coverage of automatic extinguishing systems not able to be classified further — 0
- (6) Coverage of automatic extinguishing system undetermined or not reported — U

**10.5.1.3\* Number of Automatic Sprinklers That Operated.** The number of automatic sprinklers that operated shall be recorded.

**10.5.1.4\* Performance of Automatic Extinguishing System.** Where the performance of an automatic extinguishing system is to be coded, the coding structure in Table 10.5.1.4 shall be used.

**10.5.1.5\* Reason for Extinguishing System Failure.** Where the reason for extinguishing system failure is to be coded, the following coding structure shall be used:

- (1) Extinguishing system shut off prior to the fire — 1
- (2) Not enough agent discharged to control the fire — 2
- (3) Agent discharged, but did not reach the fire — 3
- (4) Inappropriate system for the type of fire — 4
- (5) System components damaged — 5

**Table 10.5.1.4 Performance of Automatic Extinguishing System Coding Structure**

1	System operated and was effective in controlling or extinguishing the fire.
2	System operated and was not effective in controlling or extinguishing the fire.
3	System was present but fire was too small to require operation.
4	System should have operated but did not.
0	Performance of automatic extinguishing system not able to be classified further.
N	No system present in room or space of fire origin.
U	Performance of automatic extinguishing system undetermined or not reported.

- (6) System components damaged — 6
- (7) Lack of maintenance — 7
- (8) Manual intervention during the fire defeated the system — 8
- (9) Reason for extinguishing system failure not able to be classified further — 0
- (10) No extinguishing system failure — N
- (11) Reason for extinguishing system failure undetermined or not reported — U

### 10.5.2\* Manual Protection Systems or Devices Available.

**10.5.2.1\* Portable Fire Extinguishers.** Where the presence of portable fire extinguishers is to be coded, the coding structure in Table 10.5.2.1 shall be used.

**10.5.2.2\* Occupant Hose.** Where the occupant hose is to be coded, the coding structure in Table 10.5.2.2 shall be used.

**10.5.2.3\* Standpipe System.** Where the standpipe system is to be coded, the coding structure in Table 10.5.2.3 shall be used.

**10.5.2.4 Performance of a Manual Protection System or Device.**

**10.5.2.4.1\* System or device failure shall be recorded.**

**10.5.2.4.2** Where the performance of a manual protection system or device is to be coded, the coding structure in Table 10.5.2.4.2 shall be used.

**10.5.2.5\* Reason for a Manual Protection System or Device Failure Coding Structure.** Where the reason for manual protection system or device failure is to be coded, the following coding structure shall be used:

- (1) Manual system shut off prior to the fire — 1
- (2) System or device not adequate for the situation — 2
- (3) Not enough agent discharged to control the fire — 3
- (4) Agent discharged, but did not reach the fire or was not applied properly — 4
- (5) Inappropriate agent for the type of fire — for example, electrical equipment or combustible metals — 5
- (6) System or device components not installed correctly, damaged, or missing — 6
- (7) Lack of maintenance — 7
- (8) Manual intervention during the fire defeated the system — 8
- (9) No manual protection system or device failure — N

**Table 10.5.2.1 Portable Fire Extinguisher Coding Structure**

1	Complete coverage.
2	Partial coverage.
0	Portable fire extinguishers not able to be classified further.
N	No portable fire extinguishers.
U	Portable fire extinguishers undetermined or not reported.

**Table 10.5.2.2 Occupant Hose Coding Structure**

1	Complete coverage.
2	Partial coverage.
N	No occupant hose.
0	Occupant hose not able to be classified further.
U	Occupant hose undetermined or not reported.

**Table 10.5.2.4.2 Performance of a Manual Protection System or Device Coding Structure**

1	System or device was operated and was effective in controlling or extinguishing the fire.
2	System or device was operated and was not effective in controlling or extinguishing the fire.
3	System or device was present but was not used.
0	Performance of manual protection system or device not able to be classified further.
U	Performance of manual protection system or device undetermined or not reported.

(10) Reason for manual protection system or device failure not able to be classified further — 0

(11) Reason for manual protection system or device failure undetermined or not reported — U

**10.6 Water Supply.**

**10.6.1 Water Supply Type.** Where the water supply type is to be coded, the coding structure in Table 10.6.1 shall be used. Recognized water systems are engineered water main and hydrant systems under pressure.

**10.6.2 Water Supply Flow.** The flow shall reflect the sustained water supply capacity available for a period of 1 hour to apparatus responding on the first alarm. It shall be recorded in gallons per minute (gpm).

**10.7 Performance of Fire Spread Limitation Features.**

**10.7.1** This data element can be used in conjunction with the data elements that define compartment quality (see Section 7.6) to measure the performance of one of the building's fire

**Table 10.5.2.3 Standpipe System Coding Structure**

1	Complete coverage.
2	Partial coverage.
N	No standpipe system.
0	Standpipe system not able to be classified further.
U	Standpipe system undetermined or not reported.

**Table 10.6.1 Water Supply Type Coding Structure**

1	Recognized water system, hydrants within 500 ft (150 m).
2	Recognized water system, hydrants 500 ft to 999 ft (150 m to 299 m) away.
3	Recognized water system, hydrants 1000 ft (300 m) or more away.
4	Outside of recognized water system, other water source available within 500 ft (150 m).
5	Outside of recognized water system, other water source available 500 ft to 999 ft (150 m to 299 m) away.
6	Outside of recognized water system, other water source 1000 ft (300 m) or more away.
N	No water available.
0	Water supply type not able to be classified further.
U	Water supply type undetermined or not reported.

defense measures. Fire spread limitation devices include enclosing walls, doors, dampers, and the like.

**10.7.2** Where the performance of fire spread limitation features is to be coded, the coding structure in Table 10.7.2 shall be used.

**Table 10.7.2 Performance of Fire Spread Limitation Features Coding Structure**

1	Operated satisfactorily.
2	Operated unsatisfactorily.
3	Fire too small to affect performance.
N	No fire spread limitation features.
0	Performance of fire spread limitation features not able to be classified further.
U	Performance of fire spread limitation features undetermined or not reported.

**10.8 Performance of Exit System.**

**10.8.1** The data element “performance of exit system” can be used in conjunction with the data elements that define the exit quality (see Chapter 7), to measure the performance of one of the building's exit systems. The exit system performance shall take into account all building factors relating to the egress of occupants from the building under fire conditions.

**10.8.2** Where the performance of an exit system is to be coded, the coding structure in Table 10.8.2 shall be used.

**Table 10.8.2 Performance of Exit System Coding Structure**

1	Enabled timely egress for all occupants.
2	Restricted egress for one or more occupants.
3	Prevented egress for one or more occupants.
0	Performance of exit system not able to be classified further.
N	No occupants present.
U	Performance of exit system undetermined or not reported.

**Chapter 11 Fire Department Intervention**

**11.1 Purpose.** This chapter describes what the fire department found and did, and with what results. This data is useful in determining workload, effectiveness, training and equipment needs, and firefighter safety.

**11.2 Limitations.** These data elements may be inadequate to describe multiple activities on the fire scene — that is, simultaneous rescue, suppression, and salvage — and even less adequate to describe a hazardous materials incident or a mass casualty incident. Additional documentation will be required to cover these and other incidents of special interest adequately.

**11.3 Incident Type.**

**11.3.1** The data element for incident type is used to describe the most serious situation that occurred. This is generally the type of incident found when emergency personnel arrived at the scene, but if a more serious condition developed after the fire department arrival on the scene, that incident type shall be reported. This data element can be extremely useful in deter-

mining what other data shall be recorded about an incident. This data element helps fire departments document the various types of incidents to which they respond. This information can be used to analyze the frequency of different types of incidents, provide insight on fire and other incident problems, and identify training needs.

**11.3.2\* Incident Type Coding Structure.** Where the incident type is to be coded, the coding structure provided in 11.3.2.1 through 11.3.2.9 shall be used.

**11.3.2.1 Fire or Explosion (1).** For fires or explosions, the following coding structure shall be used:

- (1) Structure fire (11), as follows:
  - (a) Building fire — 111
  - (b) Fire in a structure fire other than in a building — 112
  - (c) Fire involving the contents of a cooking vessel without fire extension beyond the vessel — 113
  - (d) Fires originating in and confined to a chimney or flue — 114
  - (e) Trash or rubbish fire in a structure, with no flame damage to structure or its contents — 118
  - (f) Structure fires not able to be classified further — 110
- (2) Fire in mobile property when used as a structure (12), as follows:
  - (a) Fire in manufactured home used as a fixed residence — 121
  - (b) Fire in a motor home, camper, or recreational vehicle when used as a structure — 122
  - (c) Fire in a portable building, when used at a fixed location — 123
  - (d) Fires in mobile properties when used as fixed structures not able to be classified further — 120
- (3) Fire in mobile property outside a structure (13), as follows:
  - (a) Passenger vehicle fire — 131
  - (b) Road freight or transport vehicle fire — 132
  - (c) Rail vehicle fire — 133
  - (d) Water vehicle fire — 134
  - (e) Aircraft fire — 135
  - (f) Self-propelled motor home or recreational vehicle fire — 136
  - (g) Camper or recreational vehicle (RV) fire, not self-propelled — 137
  - (h) Off-road vehicle or heavy equipment fire — 138
  - (i) Fires in mobile properties outside structures not able to be classified further — 130
- (4) Fire in natural vegetation (14), as follows:
  - (a) Forest, woods, or wildland fire — 141
  - (b) Brush fire or brush-and-grass fire mixture — 142
  - (c) Fire confined to area characterized by grass ground cover — 143
  - (d) Fires in natural vegetation not able to be classified further — 140
- (5) Refuse fire outside (15), as follows:
  - (a) Outside rubbish, trash, or waste fire not in a container or receptacle — 151
  - (b) Garbage dump or sanitary landfill fire — 152
  - (c) Construction or demolition landfill fire — 153
  - (d) Outside trash receptacle fire — 154

- (e) Outside stationary compactor or compacted trash fire — 155
  - (f) Outside rubbish fires not able to be classified further — 150
- (6) Special outside fire [not included in 11.3.2.1(5) or 11.3.2.1(7)] (16), as follows:
    - (a) Outside storage fire on residential or commercial/industrial property, not rubbish — 161
    - (b) Outside equipment fire — 162
    - (c) Outside gas or vapor combustion — 163
    - (d) Outside mailbox fire — 164
    - (e) Mulch — 165
    - (f) Special outside fires not able to be classified further — 160
  - (7) Fire in cultivated vegetation or crop (17) as follows:
    - (a) Cultivated grain or crop fire — 171
    - (b) Cultivated orchard or vineyard fire — 172
    - (c) Cultivated trees or nursery stock fire — 173
    - (d) Fires in cultivated vegetation or crops not able to be classified further — 170
  - (8) Fires or explosions not able to be classified further (10) — 100

**11.3.2.2 Overpressure Rupture, Explosion, Overheat (No Fire) (2).** For overpressure ruptures, explosions, or overheats (no fire), the following coding structure shall be used:

- (1) Overpressure rupture from steam, air, or gas (no fire) (21), as follows:
  - (a) Overpressure rupture of pipe or pipeline — 211
  - (b) Overpressure rupture of boiler — 212
  - (c) Steam rupture of pressure or process vessel — 213
  - (d) Overpressure ruptures from steam, air, or gas not able to be classified further — 21
- (2) Overpressure rupture of pressure or process vessel due to a chemical reaction, with no ensuing fire (23) — 231
- (3) Explosion (no fire) (24), as follows:
  - (a) Munitions or bomb explosion (no fire) — 241
  - (b) Blasting agent explosion (no fire) — 242
  - (c) Fireworks explosion (no fire) — 243
  - (d) Explosion (no fire) not able to be classified further — 240
- (4) Excessive heat, overheat scorch burns with no ignition (25) — 251
- (5) Overpressure rupture, explosion, overheat not able to be classified further (20) — 200

**11.3.2.3 Rescue and Emergency Medical Service Incidents (3).** For rescue and emergency medical service incidents, the following coding structure shall be used:

- (1) Medical assist (31) — 311
- (2) Emergency medical services incident (32), as follows:
  - (a) Cardiac or related cardiovascular system issues — 321
  - (b) Motor vehicle accident with injuries — 322
  - (c) Motor vehicle/pedestrian (MV Ped) accident — 323
  - (d) Motor vehicle accidents with no injuries — 324
  - (e) Trauma not related to motor vehicle — 325
  - (f) Medical illness (including diabetes, seizures, or other internal medical systems illness) — 326
  - (g) Emergency medical incident not able to be classified further — 320
- (3) Lock-in (33) — 331

- (4) Search for lost person (34), as follows:
    - (a) Search for person on land — 341
    - (b) Search for person in water — 342
    - (c) Search for person underground — 343
    - (d) Search for lost person not able to be classified further — 340
  - (5) Extrication rescue (35), as follows:
    - (a) Extrication of victims from a building or structure, such as a building collapse — 351
    - (b) Extrication of victim(s) from vehicle — 352
    - (c) Removal of victim(s) from stalled elevator — 353
    - (d) Trench/below-grade rescue — 354
    - (e) Confined space rescue — 355
    - (f) High-angle rescue — 356
    - (g) Extrication of victim(s) from machinery — 357
    - (h) Extrication, rescue not able to be classified further — 350
  - (6) Water- or ice-related rescue (36), as follows:
    - (a) Swimming/recreational water areas rescue — 361
    - (b) Ice rescue — 362
    - (c) Swift-water rescue — 363
    - (d) Surf rescue — 364
    - (e) Watercraft rescue — 365
    - (f) Water- or ice-related rescue not able to be classified further — 360
  - (7) Electrical hazard rescue (37), as follows:
    - (a) Electrocuting or potential electrocuting — 371
    - (b) Trapped by power lines — 372
    - (c) Electrical hazard rescue not able to be classified further — 370
  - (8) Rescue or EMS standby for hazardous conditions (38) — 381
  - (9) Rescue and emergency medical service incidents not able to be classified further (30) — 300
- 11.3.2.4 Hazardous Condition (No Fire) (4).** For hazardous conditions (no fire), the following coding structure shall be used:
- (1) Flammable or combustible liquid or flammable gas spill or leak (41), as follows:
    - (a) Gasoline or other flammable liquid spill — 411
    - (b) Gas leak (natural gas or LP-Gas) — 412
    - (c) Oil or other combustible liquid spill — 413
    - (d) Flammable or combustible liquid or gas spilled or leaking not able to be classified further — 410
  - (2) Chemical release, chemical reaction, or toxic condition (42), as follows:
    - (a) Chemical hazard (no spill or leak) — 421
    - (b) Chemical spill or leak — 422
    - (c) Refrigeration leak, including ammonia — 423
    - (d) Carbon monoxide incident — 424
    - (e) Chemical release, chemical reaction, or toxic condition not able to be classified further — 420
  - (3) Radioactive condition (43), as follows:
    - (a) Radiation leak, radioactive material — 431
    - (b) Radioactive condition not able to be classified further — 430
  - (4) Electrical wiring or equipment problem (44), as follows:
    - (a) Heat from short circuit (wiring) or arcing from electrical equipment — 441
    - (b) Overheated motor or wiring — 442
    - (c) Breakdown of light ballast — 443
    - (d) Power line down — 444
    - (e) Electrical wiring or equipment problem not able to be classified further — 440
  - (5) Confirmed or suspected biological hazard (45) — 451
  - (6) Accident, potential accident (46), as follows:
    - (a) Building or structure weakened or collapsed — 461
    - (b) Aircraft standby — 462
    - (c) Vehicle accident, general cleanup — 463
    - (d) Accident, potential accident not able to be classified further — 460
  - (7) Explosive hazard present (47) — 471
  - (8) Attempted burning, illegal action (48), as follows:
    - (a) Attempt to burn — 481
    - (b) Threat to burn — 482
    - (c) Attempted burning, illegal action not able to be classified further — 480
  - (9) Hazardous condition, standby not able to be classified further (40) — 400
- 11.3.2.5 Service Call (5).** For service calls, the following coding structure shall be used:
- (1) Person in distress (51), as follows:
    - (a) Lock-out — 511
    - (b) Ring or jewelry removal, without transport to hospital — 512
    - (c) Person in distress not able to be classified further — 510
  - (2) Water problem (52), as follows:
    - (a) Water (not people) evacuation — 521
    - (b) Water or steam leak — 522
    - (c) Water problem not able to be classified further — 520
  - (3) Smoke or odor problem (53) — 531
  - (4) Animal problem or rescue (54), as follows:
    - (a) Animal problem — 541
    - (b) Animal rescue — 542
    - (c) Animal problem or rescue not able to be classified further — 540
  - (5) Public service assistance (55), as follows:
    - (a) Assist to police or other governmental agency — 551
    - (b) Police matter — 552
    - (c) Service to the public — 553
    - (d) Assist to invalid — 554
    - (e) Defective elevator; no occupants — 555
    - (f) Standby special event — 556
    - (g) Public service assistance not able to be classified further — 550
  - (6) Unauthorized burning (56) — 561
  - (7) Cover assignment, standby at fire station, move-up (57) — 571
  - (8) Service call not able to be classified further (50) — 500
- 11.3.2.6 Good Intent Call (6).** For good intent calls, the following coding structure shall be used:
- (1) Incident cleared prior to arrival (61) — 611
  - (2) No emergency found (62), as follows:
    - (a) Wrong location — 621
    - (b) No incident on arrival at dispatched address — 622
    - (c) Lines other than power lines down — 623
  - (3) Controlled burning (63), as follows:



- (a) Authorized controlled burning — 631
- (b) Prescribed fire — 632
- (4) Vicinity alarm (incident at another location) (64) — 641
- (5) Steam, other gas mistaken for smoke (65), as follows:
  - (a) Smoke scare, odor of smoke, not steam — 651
  - (b) Steam, vapor, fog, or dust thought to be smoke — 652
  - (c) Smoke from barbecue or tar kettle — 653
  - (d) Steam, other gas mistaken for smoke not able to be classified further — 650
- (6) EMS call where injured parties have been transported by a non-fire service agency or have left the scene prior to arrival (66) — 661
- (7) Hazardous materials release investigation, with no hazardous condition found (67), as follows:
  - (a) Hazardous materials release investigation, with no hazardous condition found — 671
  - (b) Biological hazard investigation with no hazard condition found — 672
- (8) Good intent call not able to be classified further (60) — 600

**11.3.2.7 False Alarm or False Call (7).** For false alarm or false calls, the following coding structure shall be used:

- (1) Malicious or mischievous false call (71), as follows:
  - (a) Malicious or mischievous false alarm 711
  - (b) Malicious or mischievous false call not able to be classified further 710
- (2) Bomb scare, no bomb (72) — 721
- (3) System or detector malfunction (73), as follows:
  - (a) Sprinkler activated due to the failure or malfunction of the sprinkler system 731
  - (b) Extinguishing system activation due to malfunction 732
  - (c) Smoke detector activation due to malfunction 733
  - (d) Heat detector activation due to malfunction 734
  - (e) Alarm system sounded because of malfunction 735
  - (f) Carbon monoxide detector activation due to malfunction 736
  - (g) System or detector malfunction not able to be classified further 730
- (4) Unintentional system or detector operation with no fire (74), as follows:
  - (a) Sprinkler alarm activation, no fire — unintentional 741
  - (b) Extinguishing system activation 742
  - (c) Smoke detector activation, no fire — unintentional 743
  - (d) Heat detector activation, no fire — unintentional 744
  - (e) Alarm system sounded, no fire — unintentional 745
  - (f) Carbon monoxide detector activation, but no carbon monoxide detected with test equipment 746
  - (g) Unintentional system or detector operation with no fire not able to be classified further 740
- (5) False alarm or false call not able to be classified further (70) — 700

**11.3.2.8 Natural Condition (8).** For natural conditions, the following coding structure shall be used:

- (1) Severe weather and natural disaster (81), as follows:

- (a) Earthquake damage assessment where no rescue or other service is rendered — 811
- (b) Flood assessment — 812
- (c) Storm damage assessment — 813
- (d) Lightning strike (no fire) — 814
- (e) Severe weather or natural disaster standby — 815
- (f) Severe weather or natural disaster not able to be classified further — 800

**11.3.2.9 Special Incident Types (9).** For special incident types, the following coding structure shall be used:

- (1) Code or ordinance violation (91) — 911
- (2) Special incident type not able to be classified further (90), as follows:
  - (a) Special incident type not able to be classified further — 900
  - (b) Undetermined incident type — U
  - (c) Undetermined incident type — UU
  - (d) Undetermined incident type — UUU

**11.4\* Condition of Fire on Arrival.** Where the condition of fire on arrival is to be coded, the coding structure in Table 11.4 shall be used.

#### 11.5 Type of Action Taken.

**11.5.1** The data element “type of action taken” is used to describe the type of duties performed at the incident scene by the responding fire department and emergency personnel. This data element, together with the data element “incident type,” provides some indication of the specific types of services provided by the fire department.

#### 11.5.2 Type of Action Taken.

**11.5.2.1\* Type of Action Taken Coding Structure.** Where the type of action taken by emergency services is to be coded, the coding structure provided in 11.5.2.1.1 through 11.5.2.1.10 shall be used.

**11.5.2.1.1 Fire Control or Extinguishment (1).** For fire control or extinguishment, the following coding structure shall be used:

- (1) Extinguishment by fire service personnel — 11
- (2) Salvage and overhaul — 12
- (3) Establish fire lines around wildland fire perimeter — 13
- (4) Manage prescribed fire in wildland — 17
- (5) Fire control or extinguishment not able to be classified further — 10

**Table 11.4 Condition of Fire on Arrival Coding Structure**

1	Fire out on arrival.
2	No fire or smoke showing.
3	Smoke showing.
4	Fire showing.
5	Fully involved.
6	Fire spread to exposures.
0	Condition of fire on arrival not able to be classified further.
U	Condition of fire on arrival undetermined or not reported.



**11.5.2.1.2 Search and Rescue Activity (2).** For search and rescue activity, the following coding structure shall be used:

- (1) Search for lost or missing person — 21
- (2) Rescue, remove from harm — 22
- (3) Extrication or disentangling of a person — 23
- (4) Recovery of body or body parts — 24
- (5) Assign rapid intervention team (RIT)/rapid intervention crew (RIC) — 25
- (6) Search and rescue activity not able to be classified further — 20

**11.5.2.1.3 Administer Emergency Medical Services (EMS) (3).** For administering emergency medical services (EMS), the following coding structure shall be used:

- (1) Provide first aid and check for injuries — 31
- (2) Provide basic life support — 32
- (3) Provide advanced life support (ALS) — 33
- (4) Transport of person from scene in fire service ambulance or apparatus — 34
- (5) Control bleeding — 39
- (6) Administer emergency medical services not able to be classified further — 30

**11.5.2.1.4 Mitigate Hazardous Conditions (4).** For mitigating hazardous conditions, the following coding structure shall be used:

- (1) Identification, analysis of hazardous materials — 41
- (2) Monitor hazardous materials — 42
- (3) Hazardous materials spill control and confinement — 43
- (4) Hazardous materials leak control and containment — 44
- (5) Remove hazard — 45
- (6) Decontaminate persons or equipment — 46
- (7) Decontamination of occupancy or area exposed to hazardous materials — 47
- (8) Remove hazardous materials — 48
- (9) Mitigate hazardous conditions not able to be classified further — 40

**11.5.2.1.5 Support Actions (5).** For support actions, the following coding structure shall be used:

- (1) Ventilation — 51
- (2) Forcible entry — 52
- (3) Evacuate area — 53
- (4) Determine the materials released to be nonhazardous — 54
- (5) Establish safe area — 55
- (6) Provide air supply — 56
- (7) Provide light or electrical power — 57
- (8) Utility control — 58
- (9) Fire extinguishment, rescue, and hazardous condition mitigation support not able to be classified further — 50

**11.5.2.1.6 Restore Systems or Provide Services (6).** For restoring systems or providing services, the following coding structure shall be used:

- (1) Restore utilities — 61
- (2) Restore sprinkler or fire protection system — 62
- (3) Restore fire alarm system — 63
- (4) Shut down system — 64
- (5) Secure property — 65
- (6) Remove water or control flooding condition — 66
- (7) Restore systems or provide services not able to be classified further — 60

**11.5.2.1.7 Provide Assistance (7).** For providing assistance, the following coding structure shall be used:

- (1) Assist physically disabled — 71
- (2) Assist animal — 72
- (3) Provide manpower or additional assistance — 73
- (4) Provide apparatus — 74
- (5) Provide equipment, where equipment is used by another agency — 75
- (6) Provide water — 76
- (7) Control crowd — 77
- (8) Control traffic — 78
- (9) Assess damage from severe weather or the results of a natural disaster — 79
- (10) Provide assistance not able to be classified further — 70

**11.5.2.1.8 Provide Information, Investigate, or Enforce Codes or Regulations (8).** For providing information, investigating, or enforcing codes or regulations, the following coding structure shall be used:

- (1) Incident command — 81
- (2) Notify other relevant agencies — 82
- (3) Provide information to the public or media — 83
- (4) Refer to proper authorities — 84
- (5) Enforce fire code and other codes — 85
- (6) Investigate — 86
- (7) Investigate, fire origin and cause — 87
- (8) Provide information, investigate, or enforce codes or regulations not able to be classified further — 80

**11.5.2.1.9 Fill-In or Standby (9).** For fill-in or standby, the following coding structure shall be used:

- (1) Fill in, move up to another fire station — 91
- (2) Stand by — 92
- (3) Canceled en route — 93
- (4) Fill-in, standby not able to be classified further — 90

**11.5.2.1.10 Other Actions Taken (10).** For other actions taken, the following coding structure shall be used:

- (1) Type of action taken not able to be classified further — 00
- (2) Type of action taken undetermined or not reported — UU

**11.5.2.2** Where more than one action is applicable, all applicable actions shall be recorded with time stamps as determined by the AHJ.

**11.6\* Fire Suppression Factors.** Where fire suppression factors are to be coded, the coding structure in Table 11.6 shall be used.

## 11.7 Method of Extinguishment.

**11.7.1** The “method of extinguishment” data element shall be used to describe the mechanism by which the fire was finally extinguished.

Table 11.6 Fire Suppression Factors Coding Structure

1	Building Construction or Design.
100	Building construction or design, other.
112	Roof, ceiling, or wall collapse.
113	Roof assembly combustible.
115	Solar panels.
125	Holes or openings in walls or ceilings.
132	Difficult to ventilate.
134	Combustible interior finish.
137	Balloon construction.
138	Internal arrangement of partitions.
139	Internal arrangement of stock or contents.
151	Lack of fire barrier walls or doors.
153	Transoms.
161	Attic undivided.
166	Insulation combustible.
173	Stairwell not enclosed.
174	Elevator shaft.
176	Ducts: vertical.
177	Chute: rubbish, garbage, laundry.
181	Supports unprotected.
182	Composite plywood I-beam construction.
183	Composite roof/floor sheathing construction.
185	Wood truss construction.
186	Metal truss construction.
	Fixed burglar protection assemblies (bars, grills
187	on windows or doors).
	Quick-release failure of bars on windows or
188	doors.
192	Previously damaged by fire.
2	Act or Omission.
200	Act or omission, other.
213	Doors left open or outside door unsecured.
214	Fire doors blocked or did not close properly.
218	Violation of fire, building or life safety code.
222	Illegal and clandestine drug operation.
232	Intoxication, drugs or alcohol.
253	Riot or civil disturbance, including hostile acts.
254	Person(s) interfered with operations.
283	Accelerant used.
3	On-site Materials.
300	On-site materials, other.
311	Aisles blocked or improper width.
	Significant/unusual fuel load structure
312	components.
313	Significant/unusual fuel load from contents.
	Significant/unusual fuel load outside from
314	natural.
	Significant/unusual fuel load from man-made
315	condition.
316	Storage, improper.
321	Radiological hazard on-site.
322	Biological hazard on-site.
323	Cryogenic hazard on-site.
324	Hazardous chemical, corrosive material, or
	oxidizer.
325	Flammable/combustible liquid hazard.
327	Explosives hazard present.
331	Decorations; included are crepe paper, garland.

(continues)

Table 11.6 Continued

341	Natural or other lighter-than-air gas present.
342	Liquefied petroleum (LPG) gas present.
361	Combustible storage > 12 ft (3.7 m).
362	High rack storage.
4	Delays.
400	Delays, other.
411	Delayed detection of fire.
412	Delayed reporting of fire.
413	Alarm system malfunction.
414	Alarm system shut off for valid reason.
415	Alarm system inappropriately shut off.
421	Unable to contact fire department.
424	Information incomplete or incorrect.
425	Communications problem.
431	Blocked or obstructed roadway.
434	Poor or no access for fire department
	apparatus.
435	Traffic delay.
436	Trouble finding location.
437	Size, height, or other building characteristic.
438	Power lines down/arcing.
443	Poor access for firefighters.
444	Secured area.
445	Guard dogs.
446	Aggressive animals, excluding guard dogs.
447	Suppression delayed due to evaluation of
	hazmat.
448	Locked or jammed doors.
451	Apparatus failure before arrival at incident.
452	Hydrants inoperative.
461	Airspace restriction.
462	Military activity.
481	Closest apparatus unavailable.
5	Protective Equipment.
500	Protective equipment, other.
510	Automatic fire suppression system problem.
520	Automatic sprinkler; standpipe connection
	problem.
531	Water supply inadequate: private.
532	Water supply inadequate: public.
543	Electrical power outage.
561	Failure of rated fire protection assembly.
562	Protective equipment negated illegally or
	irresponsibly.
6	Egress/Exit.
600	Egress/exit problem, other.
611	Occupancy load above legal limit.
612	Evacuation activity impeded FD access.
613	Window type impeded egress.
614	Windowless wall.
621	Young occupants.
622	Elderly occupants.
623	Physically disabled occupants.
624	Mentally disabled occupants.
625	Physically restrained/confined occupants.
626	Medically disabled occupants.
641	Special event.
642	Public gathering.

(continues)

**Table 11.6** *Continued*

7	Natural Conditions.
700	Natural conditions, other.
711	Drought or low fuel moisture.
712	Humidity, low.
713	Humidity, high.
714	Temperature, low.
715	Temperature, high.
721	Fog.
722	Flooding.
723	Ice.
724	Rain.
725	Snow.
732	Wind, including hurricanes or tornadoes.
741	Earthquake.
760	Unusual vegetation fuel loading.
771	Threatened or endangered species.
772	Timber sale activity.
773	Fire restriction.
774	Historic disturbance.
775	Urban-wildland interface area.
0	Fire suppression factor, other.
NNN	None.
UUU	Undetermined (conversion only).

**11.7.2\* Method of Extinguishment Coding Structure.** Where the method of extinguishment is to be coded, the following coding structure shall be used:

- (1) Self-extinguished — 1
- (2) Makeshift aids — 2
- (3) Portable extinguisher — 3
- (4) Automatic extinguishing system — 4
- (5) Water carried on apparatus initially assigned to the incident (first-alarm units) — 5
- (6) Water from hydrant, draft, or standpipe — 6
- (7) Water from tanker shuttle regardless of where tankers are refilled — 7
- (8) Water carried on apparatus initially assigned to the incident (first-alarm units) — 8
- (9) Water from hydrant, draft, or standpipe — 0
- (10) Water from tanker shuttle regardless of where tankers are refilled — U

## **11.8 Fire Service Resources.**

**11.8.1** Fire service resources shall be used to classify the types of emergency response resources used by fire and emergency medical providers.

**11.8.2** Where fire service resources are to be coded, the coding structure in Table 11.8.2 shall be used.

## **11.9 Outside Fire Service Assistance.**

**11.9.1** The “outside fire service assistance” data element shall describe the conditions under which fire service agencies exchange assistance with each other.

**11.9.1.1** Mutual aid shall be assistance provided to a fire department upon request by one or more fire departments.

**11.9.1.2** Automatic aid shall be predetermined and preauthorized two-way assistance rendered between fire departments under the terms of a written agreement.

**Table 11.8.2 Fire Services Resources Coding Structure**

1	Fire Suppression Apparatus.
11	Engine.
12	Aerial or ladder truck apparatus.
13	Combination engine/aerial apparatus (quint).
14	Special extinguishing (foam) agent apparatus.
15	Aircraft rescue firefighting (ARFF) apparatus.
16	Brush or wildland fire apparatus.
10	Fire suppression apparatus not able to be classified further.
2	Heavy Ground Equipment.
21	Dozer.
22	Tractor-plow.
23	Construction equipment.
24	Water tender or tanker.
20	Heavy ground equipment not able to be classified further.
3	Aircraft.
31	Air tanker.
32	Helitanker.
33	Helicopter for transport.
30	Aircraft not able to be classified further.
4	Marine Vessels.
41	Fire boat.
42	Boat.
40	Marine vessels or equipment not able to be classified further.
5	Operations Support Equipment.
51	Breathing apparatus support units, power generation and lighting units, or combinations thereof.
53	Special extinguishing agent resupply apparatus.
54	Equipment transport vehicle.
55	Passenger transport vehicle.
56	Fuel or maintenance tender.
57	Logistical support units.
50	Operations support equipment not able to be classified further.
6	Medical Care or Rescue Apparatus.
61	Heavy rescue unit.
62	Ambulance.
63	Paramedic (ALS intercept) unit.
60	Medical care or rescue apparatus not able to be classified further.
7	Other Suppression Resources.
71	Wildland Type I hand crew.
72	Wildland Type II hand crew.
73	Helitack crew.
70	Other suppression resources not able to be classified further.
9	Other Resources.
91	Fire investigation unit.
92	Explosives or ordnance disposal unit (bomb squad).
93	Hazardous materials (Hazmat) unit.
94	Command support apparatus.
95	Chief officer vehicle.
98	Privately owned vehicle.

(continues)

**Table 11.8.2** *Continued*

00	Fire service resource type not able to be classified further.
UU	Fire service resource type undetermined or unreported.

**11.9.1.3** Other aid shall be emergency service provided by a fire department to another jurisdiction or locale that has no fire department.

**11.9.2** Where outside fire assistance is to be coded, the coding structure in Table 11.9.2 shall be used.

**Table 11.9.2** Outside Fire Assistance Coding Structure

1	Mutual aid received.
2	Automatic aid received.
3	Mutual aid given.
4	Automatic aid given.
5	Other aid given.
6	Contractual fire protection services provided in accordance with contract — not mutual or automatic aid.
0	Outside fire services assistance not able to be classified further.
N	No outside fire service assistance given or received.
U	Outside fire service assistance undetermined or not reported.

## Chapter 12 Demographic Data

### 12.1\* Administration.

**12.1.1 Purpose.** The purpose of the data elements in this chapter is to describe the characteristics of persons, both civilians and fire fighters, who were involved with the incident.

**12.2 Date of Birth.** Date of birth shall be recorded using the month, day, and year, in that order.

**12.3 Gender.** Where the gender is to be coded, the coding structure in Table 12.3 shall be used.

**12.4\* Race and Origin Coding Structure.** Where race and origin are to be coded, the following coding structure shall be used:

- (1) White — 1
- (2) Black or African American — 2
- (3) American Indian or Alaska native — 3
- (4) Asian — 4
- (5) Native Hawaiian or other Pacific Islander — 5
- (6) Other, includes multiracial — 0
- (7) Race undetermined or not reported — U

**Table 12.3** Sex Coding Structure

1	Male (M).
2	Female (F).
U	Gender undetermined or not reported.

**12.5\* Ethnicity Coding Structure.** Where ethnicity is to be coded, the following coding structure shall be used:

- (1) Hispanic, Spanish, or Latino — 1
- (2) Not Hispanic, Spanish, or Latino — 0
- (3) Ethnicity undetermined or not reported — U

### 12.6 Affiliation.

**12.6.1** The “affiliation” data element shall be used to describe the occupational status of the person as it relates to the incident.

**12.6.2\*** Where the affiliation of a person is to be coded, the following coding structure shall be used:

- (1) Fire service personnel — 10
- (2) EMS personnel not fire service — 20
- (3) Law enforcement — 30
- (4) Other emergency personnel — 40
- (5) Civilian — 50
- (6) Affiliation not able to be classified further — 00
- (7) Affiliation undetermined or not reported — UU

### 12.7 Relationships.

**12.7.1** The “relationships” data element shall be used to establish the identity of individuals or entities that are included in the report of an incident.

**12.7.2** Where the relationship is to be coded, the coding structure in Table 12.7.2 shall be used.

### 12.8 Familiarity with the Incident Area.

**12.8.1** The “familiarity with the incident area” data element shall be used to identify the familiarity of the person with the incident area.

**12.8.2** Where familiarity with the incident area is to be coded, the coding structure in Table 12.8.2 shall be used.

### 12.9 Factors Preventing Escape.

**12.9.1** The “factors preventing escape” data element shall be used to describe the most significant factor(s) or condition(s) preventing a person’s escape.

**12.9.2** Where factors preventing escape are to be coded, the coding structure in Table 12.9.2 shall be used.

### 12.10 Mobility of Occupant.

**12.10.1** The “mobility of occupant” data element shall be used to identify whether the occupants in the area are mobile, nonmobile, or impaired.

**12.10.2** Where mobility of occupant is to be coded, the coding structure in Table 12.10.2 shall be used.

**Table 12.7.2 Relationship Coding Structure**

1	Direct Relative.
11	Husband.
12	Wife.
13	Father or grandfather.
14	Mother or grandmother.
15	Son or grandson.
16	Daughter or granddaughter.
17	Brother.
18	Sister.
10	Direct relative not able to be classified further.
2	Indirect or Casual Relationship.
21	Aunt, uncle, cousin.
22	In-laws.
23	Roommate.
24	Friend.
25	Acquaintance.
26	Neighbor.
20	Indirect or casual relationship not able to be classified further.
3	Business Relationship.
31	Owner.
32	Occupant or tenant.
33	Employer.
34	Employee.
35	Provider or caretaker.
36	Patient.
37	Vendor.
38	Guest or visitor.
30	Business relationship not able to be classified further.
4	Financial Relationship.
41	Insurance company.
42	Adjuster.
43	Additional insurer.
44	Mortgagee.
45	Payee.
46	Agent.
40	Financial relationship not able to be classified further.
5	Government Relationship.
51	Fire department personnel.
52	Police department personnel.
53	EMS provider.
54	Public works employee.
55	State employee.
56	Arrestee.
57	Suspect.
58	Federal employee.
50	Government relationship not able to be classified further.
6	Involvement.
61	Victim.
62	Casualty.
63	Suspected casualty.
64	Trespasser.
65	Witness.
66	Passerby.

(continues)

**Table 12.7.2 Continued**

67	Reporting party.
60	Involvement not able to be classified further.
7	Mobile Equipment.
71	Driver.
72	Passenger.
73	Shipper.
74	Spiller.
75	Transporter.
70	Mobile equipment not able to be classified further.
0	Other Relationship.
00	Relationship not able to be classified further.
UU	Relationship undetermined or not reported.

**Table 12.8.2 Familiarity with the Incident Area Coding Structure**

1	Short-term visitor.
2	Long-term visitor.
3	Short-term seasonal resident, employee.
4	Long-term seasonal resident, employee.
5	New permanent resident, employee, student.
6	Established permanent resident, employee, student.
0	Familiarity with incident area not able to be classified further.
U	Familiarity with incident area undetermined or not reported.

**Table 12.9.2 Factors Preventing Escape Coding Structure**

1	No time.
2	Fire between person and exit.
3	Locked doors, windows.
4	Bars, grates, grills.
5	Clothing on person burning.
6	Person moved too slowly or inappropriately.
7	Person incapacitated prior to ignition.
N	No factors or conditions prevented escape, or not a factor.
0	Factors preventing escape not able to be classified further.
U	Factors preventing escape undetermined or not reported.

**Table 12.10.2 Mobility of Occupant Coding Structure**

1	All mobile with at least one responsible person awake.
2	All mobile — all asleep.
3	Mobile and nonmobile or impaired, with at least one responsible mobile person awake.
4	Mobile and nonmobile or impaired, all asleep.
5	All nonmobile or impaired.
6	Dead before ignition.
N	No occupants.
0	Mobility of occupant not able to be classified further.
U	Mobility of occupant undetermined or not reported.

## Chapter 13 Property and Human Loss

### 13.1 Administration.

**13.1.1 Purpose.** The purpose of this chapter is to provide a means of summarizing the losses that occur as a result of a fire.

**13.1.2 Application.** Data elements are used to measure direct and indirect property loss and casualties to civilians, fire service personnel, and other emergency response personnel.

**13.2 Limitations.** The data elements in this chapter shall provide summaries of the property and human loss only.

**13.3 Summary Data.** The data elements in this section shall summarize the property and human loss resulting from an incident.

#### 13.3.1 Number of Fatalities.

**13.3.1.1** The “number of firefighter fatalities” data element shall be recorded separately from the number of civilian fatalities.

**13.3.1.2\*** Persons who are not firefighters but who are at the scene in an emergency capacity shall be included in the civilian fatality count.

#### 13.3.2 Number of Injuries.

**13.3.2.1** The “number of fire fighter injuries” data element shall be recorded separately from the number of civilian injuries.

**13.3.2.2\*** Persons who are not fire fighters but who are at the scene in an emergency capacity shall be included in the civilian injury count.

**13.3.3 Number of Persons Assisted.** The “number of persons assisted” data element shall include those assisted in leaving the building by action of the fire department and indicate the workload of the fire department on arrival.

**13.3.4 Number of Persons Rescued.** The “number of persons rescued” data element shall record the number of persons who had to be physically removed from the danger area by firefighters by way of carrying, wheeling the bed or chair to which the person is confined to, or providing an avenue not normally available.

**13.3.5 Number of Persons Temporarily Displaced.** The “number of persons temporarily displaced” data element shall include those who could not reside in their domicile the night after the incident.

**13.3.6 Number of Businesses Made Unusable.** The “number of businesses made unusable” data element shall include businesses that could not operate over 60 percent of their facility the first working day following the fire.

**13.3.7\* Area Burned.** The “area burned” data element shall be used to quantify the area in acres within the fire line perimeter.

**13.3.7.1** Areas larger than one acre shall be recorded as an integer value.

**13.3.7.2** The area burned must be qualified by a unit of measure.

**13.3.7.3** The area burned shall be coded using the coding structure in Table 13.3.7.3.

**Table 13.3.7.3 Area Burned Unit of Measure**

1	Acres
2	Square feet
3	Square miles
4	Hectares
5	Square meters
6	Square kilometers

### 13.4 Extent of Damage.

**13.4.1** The “extent of damage” data element shall be used to describe the extent of damage from fire and the effects of the fire and its suppression.

**13.4.2** The extent of fire damage shall be coded using the coding structure in Table 13.4.2.

**Table 13.4.2 Extent of Damage Coding Structure**

1	Confined to the object of origin.
2	Confined to the room of origin.
3	Confined to floor of origin.
5	Confined to the building of origin.
6	Beyond the building of origin.

**13.4.2.1** The code that defines the largest area of the structure damaged shall be used.

## Chapter 14 Casualty Data

### 14.1 Purpose and Application.

**14.1.1** This chapter shall provide data elements and the coding structures used to identify information about fire service casualties.

**14.1.2** All civilian and firefighter casualties that result when a fire incident occurs shall be reported.

#### 14.2 Case Severity.

**14.2.1** The “case severity” data element shall be used to describe the overall severity or seriousness of the injury or illness.

**14.2.2** Where case severity is to be coded, the coding structure in Table 14.2.2 shall be used.

**Table 14.2.2 Case Severity Coding Structure (Civilian)**

1	Report only, no medical care necessary.
2	Minor, first aid only.
3	Moderate severity, treated by physician or health care practitioner.
5	Severe, potentially life threatening.
6	Life threatening, death is imminent.
7	Death.
U	Case severity undetermined or not reported.

### 14.3 Apparent Symptom(s).

**14.3.1** The “apparent symptom(s)” data element shall be used to identify the preliminary condition(s) chiefly responsible for the patient’s need for emergency medical services.

#### 14.3.2 Apparent Symptoms Coding Structure.

**14.3.2.1\*** Where apparent symptom(s) are to be coded, the following coding structure shall be used:

- (1) Smoke inhalation — 01
- (2) Hazardous fumes inhalation — 02
- (3) Breathing difficulty or shortness of breath — 03
- (4) Burns and smoke inhalation — 11
- (5) Burns only: thermal — 12
- (6) Burn: scald — 13
- (7) Burn: chemical — 14
- (8) Burn: electric — 15
- (9) Cut or laceration — 21
- (10) Stab wound/puncture wound: penetrating — 22
- (11) Gunshot wound, projectile wound — 23
- (12) Contusion, bruise, minor trauma — 24
- (13) Abrasion — 25
- (14) Dislocation — 31
- (15) Fracture — 32
- (16) Strain or sprain — 33
- (17) Swelling — 34
- (18) Crushing — 35
- (19) Amputation — 36
- (20) Cardiac symptoms — 41
- (21) Cardiac arrest — 42
- (22) Stroke — 43
- (23) Respiratory arrest — 44
- (24) Chills — 51
- (25) Fever — 52
- (26) Nausea — 53
- (27) Vomiting — 54
- (28) Numbness or tingling, paresthesia — 55
- (29) Paralysis — 56
- (30) Frostbite — 57
- (31) Sickness, other — 50
- (32) Miscarriage — 61
- (33) Obstetrics — delivery — 62
- (34) Eye trauma, avulsion — 63
- (35) Drowning — 64
- (36) Foreign body obstruction — 65
- (37) Electric shock — 66
- (38) Poison — 67
- (39) Convulsion or seizure — 71
- (40) Internal trauma — 72
- (41) Hemorrhaging, bleeding internally — 73
- (42) Diabetic shock — 74
- (43) Diabetic coma — 75
- (44) Disorientation — 81
- (45) Dizziness/fainting/weakness — 82
- (46) Exhaustion/fatigue, including heat exhaustion — 83
- (47) Heat stroke — 84
- (48) Dehydration — 85
- (49) Allergic reaction — 91
- (50) Drug overdose — 92
- (51) Alcohol impairment — 93
- (52) Emotional/psychological stress — 94
- (53) Mental disorder — 95
- (54) Shock — 96
- (55) Unconscious — 97

- (56) Pain only — 98
- (57) Apparent symptom not able to be classified further — 00
- (58) No apparent symptom — NN
- (59) Apparent symptom undetermined or not reported — UU

**14.3.2.2** The coding in 14.3.2.1 shall apply to both civilian and fire service casualties.

#### 14.4 Part(s) of Body.

**14.4.1\*** The “part(s) of the body” data element shall describe the part(s) of the body affected by the apparent symptoms.

**14.4.2** Where the part(s) of the body is to be coded, the coding structure in Table 14.4.2 shall be used.

#### 14.5 Casualty Type by Situation Found.

**14.5.1** The “casualty type by situation found” data element shall be used to describe the situation or activity at the scene that caused the injuries.

**14.5.2\* Casualty Type by Situation Found Coding Structure.** Where casualty type by situation found is to be coded, the following coding structure shall be used:

- (1) Vehicle related (1), as follows:
  - (a) Aviation incident — 11
  - (b) Boat accident — 12
  - (c) Train accident — 13
  - (d) Motor vehicle accident — 14
  - (e) Motorcycle, moped accident — 15
  - (f) Other motorized vehicle accident — 16
  - (g) Bicycle accident — 17
  - (h) Nonmotorized vehicle accident — 18
  - (i) Vehicle related not able to be classified further — 10
- (2) Natural activity related (2), as follows:
  - (a) Exposure to weather — 21
  - (b) Insect sting — 22
  - (c) Snake bite — 23
  - (d) Animal bite — 24
  - (e) Sports accident, supervised — 25
  - (f) Sports accident, unsupervised — 26
  - (g) Pedestrian struck by vehicle — 27
  - (h) Natural activity related not able to be classified further — 20

**Table 14.4.2 Part[s] of the Body Coding Structure**

1	Head.
2	Neck and Shoulders.
3	Thorax.
4	Abdominal Area.
5	Spine.
6	Upper Extremities.
7	Lower Extremities.
8	Internal.
9	Multiple Body Parts.
91	Multiple body parts — upper part of body.
92	Multiple body parts — lower part of body.
93	Multiple body parts — whole body.
00	Body part not able to be classified further.
NN	No part of body.
UU	Part of body undetermined or not reported.



- (3) Fire, explosive, fireworks related (3), as follows:
  - (a) Structure fire injury — 31
  - (b) Vehicle fire injury — 32
  - (c) Grass, brush, woodlands fire injury — 33
  - (d) Flammable gas, flammable liquid, or chemical fire injury outside — 34
  - (e) Outside fire injury [not included in 14.6.2(3)(c) or 14.6.2(3)(d)] — 35
  - (f) Explosives injury — 36
  - (g) Fireworks injury — 37
  - (h) Fire, explosive, or fireworks related not able to be classified further — 30
- (4) Inflicted injury related (4), as follows:
  - (a) Altercation (fistfight) — 41
  - (b) Physical abuse — 42
  - (c) Thermal burn not associated with hostile fire [see 14.6.2(3)] — 43
  - (d) Gunshot — 44
  - (e) Rape, sexual assault — 45
  - (f) Knifing, cutting, stabbing — 46
  - (g) Mugging — 47
  - (h) Struck by thrown or falling object — 48
  - (i) Inflicted injury related not able to be classified further — 40
- (5) Miscellaneous injury related (5), as follows:
  - (a) Building collapse — 51
  - (b) Cave-in — 52
  - (c) Construction accident — 53
  - (d) Hand tool mishap — 54
  - (e) Lawn mower mishap — 55
  - (f) Power tool mishap — 56
  - (g) Minor slip or fall — 57
  - (h) Major slip or fall — 58
- (6) Miscellaneous injury related continued (6), as follows:
  - (a) Body part stuck in or caught in machinery — 61
  - (b) Hazardous materials or chemical burn — 62
  - (c) Electrical shock — 63
  - (d) Motor vehicle repair accident — 64
  - (e) Radiation, exposure to — 65
  - (f) Smoke or gas inhalation (other than when related to a fire) — 66
  - (g) Exposure to hazardous materials [not included in 14.6.2(6)(b), 14.6.2(6)(c), or 14.6.2(6)(f)] — 67
  - (h) Miscellaneous injury related not able to be classified further — 60
- (7) General type sickness related (7)
- (8) Other medical situation related (8), as follows:
  - (a) Alcoholic overdose — 81
  - (b) Unconsciousness, stupor — 82
  - (c) Childbirth or pregnancy problem — 83
  - (d) Drowning — 84
  - (e) Drug overdose, legal drugs — 85
  - (f) Drug overdose, illegal drugs — 86
  - (g) Suicide or attempted suicide — 88
  - (h) Other medical situation related not able to be classified further — 80
- (9) No casualty found (9), as follows:
  - (a) Person seen, but not in need of medical care — 91
  - (b) Patient not seen, unable to determine situation — 92
  - (c) Stand-by at scene or crew used at a fire incident — 93

- (d) Manpower assist to another EMS vehicle — 94
- (e) Nothing found at location given, not suspect — 95
- (f) Suspected false alarm — 96
- (g) Casualty type by situation found not able to be classified further — 00
- (h) Casualty type by situation found undetermined or not reported — UU

#### 14.6 Human Factors Contributing to Injury or Death.

**14.6.1** The “human factors contributing to injury or death” data element shall be used to measure the human factors that contributed to the injury, death, or the condition or apparent condition of a person as a result of the incident.

**14.6.2\*** Where human factors contributing to injury or death are to be coded, the following coding structure shall be used:

- (1) Asleep, no known impairment — 1
- (2) Unconscious — 2
- (3) Possibly impaired by alcohol — 3
- (4) Possibly impaired by other drug or chemical — 4
- (5) Possibly mentally impaired — 5
- (6) Physically impaired — 6
- (7) Physically restrained — 7
- (8) Unattended or unsupervised person — 8
- (9) Human factor contributing to injury not able to be classified further — 0
- (10) No human factor contributing to injury — N
- (11) Human factor contributing to injury undetermined or not reported — U

#### 14.7 Situational Factors Contributing to Injury or Death.

**14.7.1\*** The “situational factors contributing to injury or death” data element shall be used to measure the situational factors that were present that affected a person who was injured or died in the incident.

**14.7.2\* Situational Factors Contributing to Injury or Death Coding Structure.** Where situational factors contributing to injury or death are to be coded, the coding structure provided in 14.7.2.1 through 14.7.2.7 shall be used.

**14.7.2.1 Egress Problem (1).** For egress problems, the following coding structure shall be used:

- (1) Crowd situation, limited exits — 11
- (2) Mechanical obstacles to exit — 12
- (3) Locked exit or other problem with exit — 13
- (4) Problem with quick-release burglar or security bar — 14
- (5) Permanently locked or installed burglar or security bar, intrusion barrier — 15
- (6) Window type or size impeded egress — 16
- (7) Egress problem not able to be classified further — 10

**14.7.2.2 Fire Pattern (2).** For fire patterns, the following coding structure shall be used:

- (1) Exits blocked by flame — 21
- (2) Exits blocked by smoke — 22
- (3) Vision blocked or impaired by smoke — 23
- (4) Trapped above fire — 24
- (5) Trapped below fire — 25
- (6) Fire pattern not able to be classified further — 20

**14.7.2.3 Escape (3).** For escapes, the following coding structure shall be used:

- (1) Unfamiliar with exits — 31
- (2) Excessive travel distance to nearest clear exit — 32

- (3) Chose inappropriate exit route — 33
- (4) Reentered building — 34
- (5) Clothing caught fire while escaping — 35
- (6) Escape not able to be classified further — 30

**14.7.2.4** For collapses, the following coding structure shall be used:

- (1) Roof collapse — 41
- (2) Wall collapse — 42
- (3) Floor collapse — 43
- (4) Collapse not able to be classified further — 40

**14.7.2.5 Vehicle-Related Factors (5).** For vehicle-related factors, the following coding structure shall be used:

- (1) Trapped in/by vehicle — 51
- (2) Vehicle collision, roll-over — 52
- (3) Vehicle-related not able to be classified further — 50

**14.7.2.6 Equipment-Related Factors (6).** For equipment-related factors, the following coding structure shall be used:

- (1) Unvented heating equipment — 61
- (2) Improper use of heating equipment — 62
- (3) Improper use of cooking equipment — 63
- (4) Equipment-related factors not able to be classified further — 60

**14.7.2.7 Other (9).** For other factors, the following coding structure shall be used:

- (1) Clothing burned, not while escaping — 91
- (2) Overexertion — 92
- (3) Multiple situational factors contributing to injury — 99
- (4) Situational factor contributed to injury not able to be classified further — 00
- (5) No situational factor contributing to injury — NN
- (6) Situational factor contributing to injury undetermined or not reported — UU

**14.8 Medical Care for Casualty.** Medical care for casualty shall be denoted by three data elements.

#### **14.8.1 Affiliation of Person Providing On-Scene Care.**

**14.8.1.1** The “affiliation of person providing on-scene care” data element shall identify what agency with whom the person providing the treatment is affiliated.

**14.8.1.2** Where the affiliation of person providing on-scene care is to be coded, the coding structure in Table 14.8.1.2 shall be used.

#### **14.8.2 Training Level of On-Scene Care Provider.**

**14.8.2.1** The “training level of on-scene care provider” data element shall identify the level of medical training the person treating the casualty on the scene has achieved.

**14.8.2.2** Where the training level of on-scene care provider is to be coded, the coding structure in Table 14.8.2.2 shall be used.

#### **14.8.3\* Disposition of Casualty.**

**14.8.3.1** The “disposition of casualty” data element shall record where the casualty was taken if further treatment or observation was necessary.

**Table 14.8.1.2 Affiliation of Person Providing On-Scene Care Coding Structure**

1	Fire department.
2	Police department.
3	Emergency medical department.
4	Other municipal or county agency not included in 1, 2, or 3.
5	State agency.
6	Federal agency, including the military.
7	Private provider.
8	Bystander.
0	Affiliation of person providing on-scene treatment not able to be classified further.
U	Affiliation of person providing on-scene treatment undetermined or not reported.

**Table 14.8.2.2 Training Level of On-Scene Care Provider Coding Structure**

1	First responder/emergency medical responder.
2	EMT-B.
3	EMT-I.
4	EMT-P.
	Other.

**14.8.3.2\*** Where disposition of casualty is to be coded, the following coding structure shall be used:

- (1) Hospital or emergency care facility — 1
- (2) Non-emergency health care facility — 4
- (3) Morgue or funeral home — 5
- (4) Residence — 6
- (5) Station, quarters, assigned work location — 7
- (6) Treatment at scene and release — 8
- (7) Treatment refused — 9
- (8) Disposition of casualty not able to be classified further — 0
- (9) Disposition of casualty undetermined or not reported — U

#### **14.9 Activity at Time of Injury.**

**14.9.1** The “activity at time of injury” data element shall be used to describe the activity of the person at the time he or she was injured.

**14.9.2\*** Where activity at time of injury is to be coded, the following coding structure shall be used:

- (1) Escaping — 1
- (2) Rescue attempt — 2
- (3) Fire control attempt — 3
- (4) Return to vicinity of fire before it is controlled — 4
- (5) Return to vicinity of fire after it is controlled — 5
- (6) Sleeping, no known impairment — 6
- (7) Inability to act — 7
- (8) Irrational action — 8
- (9) Activity at time of injury not able to be classified further — 0
- (10) Activity at time of injury undetermined or not reported — U

**14.10 Physical Condition at Time of Injury.** Where physical condition at time of injury is to be coded, the coding structure in Table 14.10 shall be used.

**14.11 Status of Injured Prior to Alarm at Which Injury Occurred.**

**14.11.1** The “status of injured prior to alarm at which injury occurred” data element shall be used to determine, if possible, whether the person was awake or asleep immediately prior to the injury and whether that has a relationship to the degree of injury.

**14.11.2** Where status of the injured person prior to the alarm at which injury occurred is to be coded, the coding structure in Table 14.11.2 shall be used.

**14.12 Activity at Time of Fire Service Injury or Accident.**

**14.12.1** The “activity at time of fire service injury or accident” data element shall be used to describe the activity being performed by an injured firefighter at the time the injury occurred.

**14.12.2\* Activity at Time of Fire Service Injury or Accident Coding Structure.** Where activity at time of fire service injury or accident is to be coded, the coding structure provided in 14.12.2.1 through 14.12.2.9 shall be used.

**14.12.2.1 Boarding, Driving, or Riding on a Vehicle (1).** For boarding, driving, or riding on a vehicle, the following coding structure shall be used:

- (1) Boarding fire department vehicle — 11
- (2) Driving fire department vehicle — 12
- (3) Tillering fire department vehicle — 13
- (4) Riding fire department vehicle — 14
- (5) Exiting fire department vehicle — 15
- (6) Driving/riding non-fire department vehicle — 16
- (7) Boarding/exiting non-fire department vehicle — 17

**Table 14.10 Physical Condition at Time of Injury Coding Structure**

1	Rested.
2	Fatigued.
3	Impaired by drugs or alcohol.
4	Impaired by illness or another injury.
0	Physical condition at time of injury not able to be classified further.
U	Physical condition at time of injury undetermined or not reported.

**Table 14.11.2 Status of Injured Prior to Alarm at Which Injury Occurred Coding Structure**

1	Asleep.
2	Awake.
0	Status of injured prior to alarm at which injury occurred not able to be classified further.
U	Status of injured prior to alarm at which injury occurred undetermined or not reported.

- (8) Driving or riding on a vehicle not able to be classified further — 10

**14.12.2.2 Operating Fire Department Apparatus (2).** For operating fire department apparatus, the following coding structure shall be used:

- (1) Operating an engine or pumper — 21
- (2) Operating an aerial ladder or elevating platform — 22
- (3) Operating an EMS vehicle — 23
- (4) Operating a hazardous materials vehicle — 24
- (5) Operating a rescue vehicle — 25
- (6) Operating fire department apparatus not able to be classified further — 20

**14.12.2.3 Extinguishing Fire or Neutralizing Incident (3).** For extinguishing fire or neutralizing an incident, the following coding structure shall be used:

- (1) Handling charged hose lines — 31
- (2) Using hand extinguishers — 32
- (3) Operating master stream device — 33
- (4) Using hand tools in extinguishment activity — 34
- (5) Removing power lines — 35
- (6) Removing flammable liquids or chemicals — 36
- (7) Shutting off utilities, gas lines, and the like — 37
- (8) Extinguishing fire or neutralizing incident not able to be classified further — 30

**14.12.2.4 Suppression Support Operations (4).** For suppression support operations, the following coding structure shall be used:

- (1) Forcible entry — 41
- (2) Ventilation with power tools — 42
- (3) Ventilation with hand tools — 43
- (4) Salvage — 44
- (5) Overhaul — 45
- (6) Suppression support not able to be classified further — 40

**14.12.2.5 Access or Egress Using Ladders (5).** For access or egress using ladders, the following coding structure shall be used:

- (1) Carrying ground ladder — 51
- (2) Raising ground ladder — 52
- (3) Lowering ground ladder — 53
- (4) Climbing ladder — 54
- (5) Scaling — 55
- (6) Escaping fire or hazard — 56
- (7) Moving or lifting a patient with carrying device — 57
- (8) Moving or lifting a patient without carrying device — 58
- (9) Access or egress not able to be classified further — 50

**14.12.2.6 Rescue or EMS (6).** For rescue or EMS, the following coding structure shall be used:

- (1) Searching for victim — 61
- (2) Rescue of fire victim — 62
- (3) Rescue of nonfire victim — 63
- (4) Water rescue — 64
- (5) Providing emergency medical care — 65
- (6) Diving operations — 66
- (7) Extraction with power tools — 67
- (8) Extraction with hand tools — 68
- (9) Rescue or EMS not able to be classified further — 60

**14.12.2.7 Miscellaneous Incident Scene Activity (7).** For miscellaneous incident scene activity, the following coding structure shall be used:

- (1) Directing traffic — 71
- (2) Catching hydrant — 72
- (3) Laying hose — 73
- (4) Moving tools or equipment around scene — 74
- (5) Picking up tools, equipment, hose on scene — 75
- (6) Setting up lighting — 76
- (7) Operating portable pump — 77
- (8) Miscellaneous incident scene activity not able to be classified further — 70

**14.12.2.8 Station Activity (8).** For station activity, the following coding structure shall be used:

- (1) Moving about station, alarm sounding — 81
- (2) Moving about station, normal activity — 82
- (3) Station maintenance — 83
- (4) Vehicle maintenance — 84
- (5) Equipment maintenance — 85
- (6) Physical fitness activity: supervised — 86
- (7) Physical fitness activity: unsupervised — 87
- (8) Training activity or drill — 88
- (9) Station activity not able to be classified further — 80

**14.12.2.9 Other Activity (9).** For other activity, the following coding structure shall be used:

- (1) Incident investigation: during incident — 91
- (2) Incident investigation: after incident — 92
- (3) Inspection activity — 93
- (4) Administrative work — 94
- (5) Communication work — 95
- (6) Activity at time of fire service injury or accident not able to be classified further — 00
- (7) Activity at time of fire service injury or accident undetermined or not reported — UU

### 14.13 Where Fire Service Injury Occurred.

**14.13.1 Location During Injury.** The “general location where injury occurred” and “specific location where injury occurred” data elements shall be used to describe the location where the firefighter was when injured.

**14.13.2\* General Location Where Injury Occurred.** Where the general location where injury occurred is to be coded, the following coding structure shall be used:

- (1) En route to fire department location — 1
- (2) At fire department location — 2
- (3) En route to incident or assignment — 3
- (4) En route to medical facility — 4
- (5) At scene, in or on structure — 5
- (6) At scene, outside structure — 6
- (7) At medical facility — 7
- (8) Returning from incident or assignment — 8
- (9) Returning from medical facility — 9
- (10) General location where injury occurred not able to be classified further — 0
- (11) General location where injury occurred undetermined or not reported — U

**14.13.3\* Specific Location Where Injury Occurred.** Where the specific location where injury occurred is to be coded, the following coding structure shall be used:

- (1) Outside at grade — 22

- (2) On roof — 23
- (3) On aerial ladder or in basket — 24
- (4) On ground ladder — 25
- (5) On vertical surface or ledge — 26
- (6) On fire escape or outside stairway — 27
- (7) On steep grade — 28
- (8) In open pit — 31
- (9) In ditch or trench — 32
- (10) In quarry or mine — 33
- (11) In ravine — 34
- (12) In well — 35
- (13) In water — 36
- (14) In attic, crawl space, or other confined structural space — 45
- (15) In structure at or above grade — 46
- (16) In structure, below grade — 47
- (17) In tunnel — 53
- (18) In sewer — 54
- (19) In or on motor vehicle — 61
- (20) In or on rail vehicle — 63
- (21) In or on boat, ship, or barge — 64
- (22) In or on aircraft — 65
- (23) Specific location where injury occurred not able to be classified further — 00
- (24) Specific location where injury occurred undetermined or not reported — UU

### 14.13.4 Fire Response Vehicle Type.

**14.13.4.1** The “fire response vehicle type” data element shall be used to identify the vehicle type in which the firefighter was injured.

**14.13.4.2** Where the fire response vehicle type is to be coded, the coding structure in Table 14.13.4.2 shall be used.

### 14.14 Cause of Injury.

**14.14.1 General.** The “cause of civilian injury” and “cause of firefighter injury” data elements shall describe the action or lack of action that directly resulted in the injury to the casualty.

**14.14.2\* Cause of Civilian Injury.** Where the cause of civilian injury is to be coded, the following coding structure shall be used:

- (1) Exposure to fire products, such as flame, heat, smoke, and gas — 1
- (2) Exposure to hazardous materials or toxic fumes other than smoke — 2
- (3) Jump in escape attempt — 3
- (4) Fall, slip, or trip — 4
- (5) Caught or trapped — 5
- (6) Structural collapse — 6
- (7) Struck by or contact with object — 7
- (8) Overexertion or strain — 8
- (9) Multiple causes — 9

**Table 14.13.4.2 Fire Response Vehicle Type Coding Structure**

1	Suppression vehicle.
2	EMS vehicle.
3	Other fire department vehicle.
4	Non-fire department vehicle (includes POV).
U	Vehicle type undetermined.
N	None.

- (10) Cause of civilian injury not able to be classified further — 0
- (11) Cause of civilian injury undetermined or not reported — U

**14.14.3\* Cause of Firefighter Injury.** Where the cause of firefighter injury is to be coded, the following coding structure shall be used:

- (1) Fall — 1
- (2) Jump — 2
- (3) Slip or trip — 3
- (4) Exposure to hazard, including exposure to heat, smoke, or toxic agents — 4
- (5) Struck or assaulted by person, animal, or moving object — 5
- (6) Contact with object (firefighter moved into or onto object) — 6
- (7) Overexertion or strain — 7
- (8) Cause of firefighter injury not able to be classified further — 0
- (9) Cause of firefighter injury undetermined or not reported — U

#### 14.15 Factor Contributing to Injury.

**14.15.1** The “factor contributing to injury” data element shall describe the factors that contributed to the injury and provide additional information on how an injury occurred.

**14.15.2** Where the factor contributing to injury is to be coded, the coding structure in Table 14.15.2 shall be used.

**Table 14.15.2 Factor Contributing to Injury Coding Structure**

1	Collapse or Falling Object.
11	Roof collapse.
12	Wall collapse.
13	Floor collapse.
14	Ceiling collapse.
15	Stair collapse.
16	Falling objects.
17	Cave-in (earth).
10	Collapse or falling object not able to be classified further.
2	Fire Development.
21	Fire progress, including smoky conditions.
22	Backdraft.
23	Flashover.
24	Explosion.
20	Fire development not able to be classified further.
3	Lost, Caught, Trapped, or Confined.
31	Person physically caught or trapped.
32	Lost in building.
33	Operating in confined structural areas.
34	Operating under water or ice.
30	Lost, caught, trapped, or confined not able to be classified further.
4	Holes.
41	Unguarded hole in structure.
42	Hole burned through roof.
43	Hole burned through floor.
40	Holes not able to be classified further.

(continues)

**Table 14.15.2 Continued**

5	Slippery or Uneven Surfaces.
51	Icy surface.
52	Wet surface.
53	Loose material on surface.
54	Uneven surface.
50	Slippery or uneven surfaces not able to be classified further.
6	Vehicle or Apparatus.
61	Vehicle left road or overturned.
62	Vehicle collided with another vehicle.
63	Vehicle collided with nonvehicular object.
64	Vehicle stopped too fast.
65	Seat belt not fastened.
66	Firefighter standing on apparatus.
60	Vehicle or apparatus not able to be classified further.
9	Other Contributing Factors.
91	Civil unrest.
92	Hostile acts.
00	Factor contributing to injury not able to be classified further.
NN	No factor contributing to injury.
UU	Factor contributing to injury undetermined or not reported.

#### 14.16 Object Involved in Injury.

**14.16.1** The “object involved in injury” data element shall provide additional information on how an injury occurred.

**14.16.2\*** Where the object involved in injury is to be coded, the following coding structure shall be used:

- (1) Coupling — 11
- (2) Uncharged hose — 12
- (3) Charged hose — 13
- (4) Water from master stream — 14
- (5) Water from hose line — 15
- (6) Water that is not from a hose — 16
- (7) Steam — 17
- (8) Extinguishing agent, not water — 18
- (9) Aerial ladder, elevating platform — 21
- (10) Ground ladder — 22
- (11) Tools or equipment — 23
- (12) Knife, scissors — 24
- (13) Syringe — 25
- (14) Fire department vehicle or apparatus — 26
- (15) Fire department vehicle door — 27
- (16) Station sliding pole — 28
- (17) Structural component, other — 30
- (18) Curb — 31
- (19) Door in building — 32
- (20) Fire escape — 33
- (21) Ledge — 34
- (22) Stairs — 35
- (23) Wall or other vertical surfaces such as cliffs — 36
- (24) Window — 37
- (25) Roof — 38
- (26) Floor or ceiling — 39
- (27) Asbestos — 41
- (28) Dirt, stones, or debris — 42
- (29) Glass — 43

- (30) Nails — 45
- (31) Splinters — 46
- (32) Embers — 47
- (33) Hot tar — 48
- (34) Hot metal — 49
- (35) Biological agents — 51
- (36) Chemicals — 52
- (37) Fumes, gases, or smoke — 53
- (38) Poisonous plants — 54
- (39) Insects — 55
- (40) Radioactive materials — 56
- (41) Electricity — 61
- (42) Extreme weather — 62
- (43) Utility flames, flares, torches — 63
- (44) Heat or flame — 64
- (45) Person, other — 90
- (46) Person: victim — 91
- (47) Property and structure contents — 92
- (48) Animal — 93
- (49) Non-fire department vehicle — 94
- (50) Guns — 95
- (51) Object involved not able to be classified further — 00
- (52) No object involved in injury — NN
- (53) Object involved in injury undetermined or not reported — UU

#### 14.17 Protective Equipment.

**14.17.1 General.** The data elements in this section shall be used together to record the failure of protective clothing or equipment being used by fire service personnel when the failure contributes to injury.

**14.17.2 Protective Equipment Failure.** When protective clothing or equipment fails, the following information shall be recorded about that piece of protective equipment:

- (1) Manufacturer of the protective clothing
- (2) Model or style of protective clothing
- (3) Serial number or lot number of protective clothing
- (4) Laboratory certification or listing on protective clothing that the equipment complies with a national standard

**14.17.3 Protective Equipment Type.** Where the protective equipment type is to be coded, the coding structure in Table 14.17.3 shall be used.

**Table 14.17.3 Protective Equipment Type Coding Structure**

1	Head or Face Protection.
11	Helmet.
12	Full face protector.
13	Partial face protector.
14	Goggles or eye protection.
15	Hood.
16	Ear protector.
17	Neck protector.
10	Head or face protection not able to be classified further.
2	Coat, Shirt, or Trousers.
21	Protective coat (sometimes known as a turnout coat or bunker coat).
22	Protective trousers (sometimes known as turnout pants or bunker pants).

(continues)

**Table 14.17.3 Continued**

23	Uniform shirt.
24	Uniform t-shirt.
25	Uniform trousers.
26	Uniform coat or jacket.
27	Coveralls.
28	Apron or gown.
20	Coat, shirt, or trousers not able to be classified further.
3	Boots or Shoes.
31	Knee-length boots with steel baseplate and steel toes.
32	Knee-length boots with steel toes only.
33	Three-quarter length boots with steel baseplate and steel toes.
34	Three-quarter length boots with steel toes only.
35	Boots without steel baseplate or steel toes.
36	Safety shoes with steel baseplate and steel toes.
37	Safety shoes with steel toes only.
38	Non-safety shoes.
30	Boots or shoes not able to be classified further.
4	Respiratory Protection.
41	Self-contained open-circuit demand-type breathing apparatus.
42	Self-contained open-circuit positive-pressure breathing apparatus.
43	Self-contained closed-circuit-type breathing apparatus.
44	Non-self-contained breathing apparatus.
45	Cartridge respirator.
46	Dust or particle mask.
40	Respiratory protection not able to be classified further.
5	Hand Protection.
51	Firefighter gloves with wristlets.
52	Firefighter gloves without wristlets.
53	Work gloves.
54	Hazardous materials gloves.
55	Medical gloves.
50	Hand protection not able to be classified further.
6	Special Equipment.
61	Proximity suit for entry.
62	Proximity suit for non-entry.
63	Totally encapsulated, reusable chemical suit.
64	Totally encapsulated, disposable chemical suit.
65	Partially encapsulated, reusable chemical suit.
66	Partially encapsulated, disposable chemical suit.
67	Flash protection suit.
68	Flight or jump suit.
69	Brush suit.
71	Exposure suit.
72	Self-contained underwater breathing apparatus (SCUBA).
73	Life preservers.
74	Life belt, ladder belt.
75	Personal alert safety system (PASS).
76	Radio distress device.
77	Personal lighting.

(continues)

Table 14.17.3 *Continued*

78	Fire shelter or tent.
79	Vehicle safety belt.
70	Special equipment not able to be classified further.
9	Other Protective Equipment.
98	Protective equipment not a factor.
00	Protective equipment type not able to be classified further.
UU	Protective equipment type undetermined or not reported.

**14.17.4 Protective Equipment Problem.** Where the protective equipment problem when the injury occurred is to be coded, the coding structure in Table 14.17.4 shall be used.

Table 14.17.4 Protective Equipment Problem Coding Structure

11	Burned.
12	Melted.
21	Fractured, cracked, or broke.
22	Punctured.
23	Scratched.
24	Knocked off.
25	Cut or ripped.
31	Trapped steam or hazardous gases.
32	Insufficient insulation.
33	Object fell in or onto equipment item.
41	Failed under impact.
42	Facepiece or hose detached.
43	Exhalation valve inoperative or damaged.
44	Harness detached or separated.
45	Regulator failed to operate.
46	Regulator damaged by contact.
47	Problem with admissions valve.
48	Alarm failed to operate.
49	Alarm damaged by contact.
51	Supply cylinder or valve failed to operate.
52	Supply cylinder or valve damaged by contact.
53	Supply cylinder contained insufficient air or oxygen.
94	Did not fit properly.
95	Not properly serviced or stored prior to use.
96	Not used for designed purpose.
97	Not used as recommended by manufacturer.
98	No failure of protective equipment.
00	Protective equipment problem not able to be classified further.
UU	Protective equipment problem undetermined or not reported.

## Chapter 15 Prehospital Care

**15.1 Administration.**

**15.1.1 Purpose and Application.** The purpose of this chapter is to provide data elements and classifications for identifying the prehospital condition of a person and the care provided by emergency service personnel.

**15.1.2 Special Definitions.** A list of special terms used in this chapter follows:

- (1) Emergency Medical Responder (EMR). See 3.3.18.
- (2) Emergency Rescue Vehicle. See 3.3.19.
- (3) Emergency Medical Services (EMS). See 3.3.21.
- (4) Emergency Medical Technician (EMT). See 3.3.22.
- (5) Mobile Intensive Care Unit. See 3.3.68.
- (6) Paramedic. See 3.3.80.

**15.2 Emergency Medical Responder.**

**15.2.1 Type of Unit Handling Medical Incident.** Where the type of unit handling the medical incident is to be coded, the coding structure in Table 15.2.1 shall be used.

Table 15.2.1 Type of Unit Handling Medical Incident Coding Structure

1	Ambulance, rescue unit.
2	Mobile intensive care unit, medic/heart unit.
3	Rescue vehicle.
4	Fire department apparatus not included in 1, 2, or 3.
5	Air transport unit.
6	Mobile integrated health care/community paramedic unit.
0	Type of unit handling medical emergency not able to be classified further.
U	Type of unit handling medical emergency undetermined or not reported.

**15.2.2 Affiliation of Responder.** Where the affiliation of the persons responding to handle the medical emergency are to be coded, the coding structure in Table 15.2.2 shall be used.

Table 15.2.2 Affiliation of Responder Coding Structure

1	Fire department.
2	Police department.
3	Emergency medical department.
4	Other municipal or county agency not included in 1, 2, or 3.
5	State agency.
6	Federal agency, including the military.
7	Private provider.
0	Affiliation of responder not able to be classified further.
U	Affiliation of responder undetermined or not reported.



**15.2.3 Responder Medical Training Level.** Where the level of training for the individual(s) who provided patient care is to be coded, the coding structure in Table 15.2.3 shall be used.

**Table 15.2.3 Responder Medical Training Level Coding Structure**

1	None.
2	Basic first aid.
3	Advanced first aid.
4	Emergency medical responder (EMR).
5	Basic emergency medical technician (EMT-B).
6	Advanced life support or paramedic (EMT-I).
7	Nurse.
8	Physician's assistant.
9	Doctor; physician.
U	Responder medical training level undetermined or not reported.

### 15.3 Patient Physical Condition.

**15.3.1 Lung Sounds.** Where lung sounds are to be coded, the coding structure in Table 15.3.1 shall be used.

**Table 15.3.1 Lung Sounds Coding Structure**

1	Clear.
2	Stridor.
3	Rales — includes wheezes, rhonchi.
4	Diminished breath sounds.
5	Absent breath sounds.
U	Lung sounds undetermined or not reported.

**15.3.2 Lung Sound Location.** Where lung sound location is to be coded, the coding structure in Table 15.3.2 shall be used.

**Table 15.3.2 Lung Sound Location Coding Structure**

1	Bilaterally equal.
2	Right.
3	Left.
N	None.
U	Lung sound location undetermined or not reported.

**15.3.3 Skin Color.** Where skin color is to be coded, the coding structure in Table 15.3.3 shall be used.

**Table 15.3.3 Skin Color Coding Structure**

1	Normal.
2	Cyanotic.
3	Pale, ashen.
4	Flushed.
U	Skin color undetermined or not reported.

**15.3.4 Skin Temperature.** Where skin temperature is to be coded, the coding structure in Table 15.3.4 shall be used.

**Table 15.3.4 Skin Temperature Coding Structure**

1	Normal.
2	Hot and dry.
3	Hot and moist.
4	Cool and dry.
5	Cool and moist.
U	Skin temperature undetermined or not reported.

**15.3.5 Pupil Size.** Where pupil size is to be coded, the coding structure in Table 15.3.5 shall be used.

**Table 15.3.5 Pupil Size Coding Structure**

1	Equal.
2	Unequal.
3	Medical or surgical anomaly.
U	Pupil size undetermined or not reported.

**15.3.6 Pupil Reactivity.** Where pupil reactivity is to be coded, the coding structure in Table 15.3.6 shall be used.

**Table 15.3.6 Pupil Reactivity Coding Structure**

1	Reactive.
2	Not reactive.
U	Pupil reactivity undetermined or not reported.

**15.3.7 Pupil Position.** Where pupil position is to be coded, the coding structure in Table 15.3.7 shall be used.

**Table 15.3.7 Pupil Position Coding Structure**

1	Midposition.
2	Dilated.
3	Constricted.
U	Pupil position undetermined or not reported.

**15.3.8 Pulse Character.** Where pulse character is to be coded, the coding structure in Table 15.3.8 shall be used.

**Table 15.3.8 Pulse Character Coding Structure**

1	Strong and regular.
2	Strong and irregular.
3	Weak and regular.
4	Weak and irregular.
N	None.
U	Pulse character undetermined or not reported.

**15.3.9 Respiration Character.** Where respiration character is to be coded, the coding structure in Table 15.3.9 shall be used.

**Table 15.3.9 Respiration Character Coding Structure**

1	Regular rhythm and normal depth.
2	Regular rhythm and deep depth.
3	Regular rhythm and shallow depth.
4	Irregular rhythm and normal depth.
5	Irregular rhythm and deep depth.
6	Irregular rhythm and shallow depth.
N	None.
U	Respiration character undetermined or not reported.

**15.3.10 Patient Status.** Where patient status is to be coded, the coding structure in Table 15.3.10 shall be used.

**Table 15.3.10 Patient Status Coding Structure**

1	Conscious.
2	Semiconscious.
3	Unconscious.
4	Apparently dead.
U	Patient status undetermined or not reported.

**15.3.11 Patient Behavior.** Where patient behavior is to be coded, the coding structure in Table 15.3.11 shall be used.

**Table 15.3.11 Patient Behavior Coding Structure**

1	Normal (for the situation).
2	Acutely depressed, disturbed, upset.
3	Confused, disoriented, stuporous.
4	Hallucinating.
5	Homicidal.
6	Impaired by drugs or alcohol.
7	Uncontrollable, unduly aggressive, unruly.
8	Suicidal.
0	Patient behavior not able to be classified further.
U	Patient behavior undetermined or not reported.

#### 15.4 Cardiac Condition/Assessment.

**15.4.1** The “cardiac condition/assessment” data element shall be used to record and code data on the assessment of the cardiac condition of a patient.

**15.4.2** Where cardiac condition/assessment is to be coded, the coding structure in Table 15.4.2.

**Table 15.4.2 Cardiac Condition/Assessment Coding Structure**

1	Sinus.
11	N.S.R. (normal sinus rhythm).
12	Sinus tachy (sinus tachycardia).
13	Sinus brady (sinus bradycardia).
14	Sinus arrhythmia.
15	S.A. arrest (sinoatrial arrest).

(continues)

**Table 15.4.2 Continued**

2	Atrial.
21	Wandering pacemaker.
22	P.A.C.s (premature atrial contractions).
23	P.A.T.s (paroxysmal atrial tachycardia).
24	Atrial flutter.
25	Atrial fibrillation.
3	Nodal Junction.
31	P.N.C.s (premature nodal contractions).
32	Nodal rhythm/junctional.
33	AV nodal tach — SVT (atrial-ventricular nodal tachycardia— supraventricular tachycardia).
4	Blocks.
41	1st A.V. block (first-degree atrial-ventricular block).
42	2nd A.V. block T-1 (second-degree atrial-ventricular block, Type 1).
43	2nd A.V. block T-2 (second-degree atrial-ventricular block, Type 2).
44	3rd A.V. block (third-degree atrial-ventricular block).
5	Ventricular.
51	PVC — 5 or less per minute (premature ventricular contractions).
52	PVC — 6 or more per minute.
53	PVC — on T-wave.
54	PVC — Bigeminy.
55	PVC — Trigeminy.
56	V tach (ventricular tachycardia).
57	V fib (ventricular fibrillation).
6	Nonproductive.
61	Asystole.
62	Idioventricular rhythm.
63	EMD (electromechanical dissociation).
9	Other.
00	Cardiac condition/assessment not able to be classified further.
UU	Cardiac condition/assessment undetermined or not reported.

#### 15.5 Prehospital Care Provided.

**15.5.1** The “prehospital care provided” data element shall define the care and treatment provided prior to the patient’s transport to the hospital.

**15.5.2\*** Where prehospital care provided is to be coded, the following coding structure shall be used:

- (1) Antishock trousers — 01
- (2) Aspirate (suction) — 02
- (3) Blood drawn — 03
- (4) Cardiopulmonary resuscitation (CPR) — 04
- (5) Cervical collar — 05
- (6) Control bleeding — 06
- (7) Defibrillation — 07
- (8) Demand valve ventilation (inhalation) — 08
- (9) Dress wound — 09
- (10) EKG transmitted — 10
- (11) Esophageal obturator airway — 11
- (12) Extricate patient — 12
- (13) Ice pack — 13
- (14) Irrigate with water or saline — 14

- (15) OB delivery — 15
- (16) Oropharyngeal airway — 16
- (17) Orthopedic stretcher — 17
- (18) Positive pressure ventilation (resuscitation) — 18
- (19) Psychiatric intervention — 20
- (20) Restrain patient — 21
- (21) Rotating tourniquet — 22
- (22) Sandbags — 23
- (23) Sling — 24
- (24) Spine board [3 ft (1 m)] — 25
- (25) Spine board [6 ft (2 m)] — 26
- (26) Splint — 27
- (27) Thrust — abdomen or chest — 28
- (28) Tourniquet — 29
- (29) Tracheal intubation — 30
- (30) Traction splint — 31
- (31) Valsalva maneuver — 32
- (32) Prearrival instruction given by dispatcher via telephone based on predetermined instruction — 41
- (33) No treatment given — NN
- (34) Prehospital treatment undetermined or not reported — UU

### 15.6 Medication.

**15.6.1\* Drugs or Fluids Administered.** Where drugs or fluids administered to the patient are to be coded, the following coding structure shall be used:

- (1) Activated charcoal — 01
- (2) Atropine — 02
- (3) Calcium chloride or gluconate — 03
- (4) Corticosteroids — 04
- (5) Dextrose in water (D5W) with glucose — 05
- (6) Diazepam — 06
- (7) Diphenhydramine HCl — 07
- (8) Dopamine — 08
- (9) Epinephrine — 09
- (10) Furosemide — 10
- (11) Intravenous fluids — 11
- (12) Ipecac — 12
- (13) Isoproterenol — 13
- (14) Lidocaine HCl — 14
- (15) Metaraminol — 15
- (16) Naloxone — 16
- (17) Narcotic — 17
- (18) Nitroglycerine (NTG) — 18
- (19) Nitrous oxide (NO<sub>2</sub>) — 19
- (20) Sodium bicarbonate — 21
- (21) Drugs or fluids administered not able to be classified further — 00
- (22) Drugs or fluids administered undetermined or not reported — UU

**15.6.2 Medication Route.** Where the medication route used to administer the drug or fluid to the patient is to be coded, the coding structure in Table 15.6.2 shall be used.

**Table 15.6.2 Medication Route Coding Structure**

01	Endotracheal.
02	Intramuscular.
03	Subcutaneous.
04	Oral.

(continues)

**Table 15.6.2 Continued**

05	Sublingual.
06	Suppository.
07	IV bolus (push).
08	IV infusion (drip).
09	Inhalation.
00	Medication route not able to be classified further.
UU	Medication route undetermined or not reported.

### 15.7 Patient Disposition.

**15.7.1** The “patient disposition” data element shall indicate the transportation aspects of the emergency medical service run for this patient.

**15.7.2** Where patient disposition is to be coded, the coding structure in Table 15.7.2 shall be used.

**Table 15.7.2 Patient Disposition Coding Structure**

1	Transported patient under emergency conditions.
2	Transported patient under non-emergency conditions.
3	Treatment given but patient not transported.
4	Patient refused service or EMS crew declined to transport.
5	Patient transported by other means.
6	Good intent call — no patient transported.
7	Nothing found at location given.
8	Proven or suspected false call.
9	Standby at other than EMS incident.
U	Patient disposition undetermined or not reported.

### 15.8 Patient Transport Services.

**15.8.1** The “patient transport services” data element shall be used to record the government affiliation of the agency that transported the patient and whether fire service personnel were required to augment the personnel regularly assigned to the transport service.

**15.8.2** Where patient transport services is to be coded, the coding structure in Table 15.8.2 shall be used.

**Table 15.8.2 Patient Transport Services Coding Structure**

1	Transported by the fire service, without the need to augment personnel involved in the transport.
2	Transported by the fire service, with additional fire service personnel augmenting the transport staff.
3	Transported by the other governmental agency, without the need to augment personnel involved in the transport.
4	Transported by the other governmental agency, with fire service personnel augmenting the transport staff.
5	Transported by the private agency, without the need to augment personnel involved in the transport.
6	Transported by the private agency, with fire service personnel augmenting the transport staff.
8	Patient not transported.

(continues)

Table 15.8.2 *Continued*

0	Patient transport service not able to be classified further.
U	Patient transport service undetermined or not reported.

## Chapter 16 Hazardous Materials Data

### 16.1 Administration.

**16.1.1 Purpose.** The purpose of the data elements outlined in this chapter is to provide a uniform way of collecting information on the release or potential release of hazardous materials.

### 16.1.2 Application.

**16.1.2.1** The data elements in this chapter are to be used to account for the utilization of resources, determine the hazard to the public and to fire service personnel, provide a basis for prevention measures, substantiate the need for changes in regulations, and aid recovery of public mitigation costs by documenting responsible persons.

**16.1.2.2** Additional data elements, such as location of incident and the times that resources are dispatched, used, and released, will also be necessary to complete information on the incident and utilization of resources.

**16.2 Limitations.** Classifications contained in this chapter are intended only for the collection of hazardous materials incident data.

**16.3 Discussion and Examples.** In order to reconstruct significant information about a hazardous materials incident, several data element groups must be collected to the fullest extent possible.

### 16.4 Hazardous Materials Identification.

**16.4.1 Chemical or Trade Name.** The common chemical name of the product or the name assigned by the manufacturer to the product. At this time there is no unique way to describe every chemical, compound, mixture, and product that is a hazardous material. Therefore, the name used in conjunction with other established codes, such as the United States Department of Transportation Hazardous Material Identification Number, the United Nations Hazard Class Number, and the Chemical Abstract Service number, will assist in uniquely identifying the hazardous material involved.

**16.4.2 DOT Identification Number.** The DOT number is a four-digit identification number assigned to the hazardous material by the United States Department of Transportation (DOT). This number can be obtained from the most recent edition of the *Emergency Response Guidebook* (DOT P5800.6) or its successor as published from time to time.

### 16.4.3 United Nations Class.

**16.4.3.1** The United Nations (UN) class is a combination of a class number and a division number within the class. This classification is used to describe the primary hazard associated with the material released. Additional information on these classes and divisions can be found in 49 CFR 173, Subparts C, D, and I.

**16.4.3.2** Where the UN hazard class and division of the material is to be coded, the coding structure in Table 16.4.3.2 shall be used.

**16.4.4 CAS Number.** The Chemical Abstract Services (CAS) number is a nine-digit number that classifies chemicals for identification purposes. Even though these numbers are not totally unique, they provide the best current method of classifying chemicals.

Table 16.4.3.2 UN Hazard Class and Division of the Material Coding Structure

1	Class 1, Explosives.
11	Class 1, Division 1.1, Explosives with a mass explosion hazard.
12	Class 1, Division 1.2, Explosives with projectile hazard.
13	Class 1, Division 1.3, Explosives with a predominant fire hazard.
14	Class 1, Division 1.4, Explosives with no significant blast hazard.
15	Class 1, Division 1.5, Very insensitive explosives; blasting agents.
16	Class 1, Division 1.6, Extremely insensitive detonating substances.
2	Class 2, Gases.
21	Class 2, Division 2.1, Flammable gases.
22	Class 2, Division 2.2, Nonflammable, nonpoisonous compressed gas.
23	Class 2, Division 2.3, Poisonous gas.
24	Class 2, Division 2.4, Corrosive gases (Canada).
3	Class 3, Flammable Liquids [and Combustible Liquids (US)].
30	Class 3, Flammable liquids and combustible liquids.
4	Class 4, Flammable Solids, Spontaneously Combustible Materials, and Dangerous When Wet Materials.
41	Class 4, Division 4.1, Flammable solids.
42	Class 4, Division 4.2, Spontaneously combustible materials.
43	Class 4, Division 4.3, Dangerous when wet materials.
5	Class 5, Oxidizers and Organic Peroxides.
51	Class 5, Division 5.1, Oxidizers.
52	Class 5, Division 5.2, Organic peroxides.
6	Class 6, Toxic Materials and Infectious Substances.
61	Class 6, Division 6.1, Poisonous material.
62	Class 6, Division 6.2, Infectious substances (etiologic agent).
7	Class 7, Radioactive Materials.
70	Class 7, Radioactive material.
8	Class 8, Corrosive Materials.
80	Class 8, Corrosive material.
9	Class 9, Miscellaneous Dangerous Goods.
90	Class 9, Miscellaneous hazardous material.
91	Division 9.1, Miscellaneous dangerous goods (Canada).
92	Division 9.2, Environmentally hazardous substances (Canada).
93	Division 9.3, Dangerous wastes (Canada).
UU	UN hazard classification undetermined or not reported.

#### 16.4.5 Physical State of Hazardous Material.

**16.4.5.1** The data element “physical state of hazardous material” describes the physical state of a material under various conditions. It can be used to classify the physical state while a material is stored or when it has been released. With many hazardous materials, changes in physical state will occur upon release and require different methods to handle the material. It is recommended that the physical state of the hazardous material be recorded both as it was in its container and as it was after its release.

**16.4.5.2** The designations in Table 16.4.5.2 shall be used to code data about the physical state of a hazardous material.

#### 16.4.6 Personnel Identifying Hazardous Material.

**16.4.6.1** The data element “personnel identifying hazardous material” describes a variety of personnel who could be onscene or offscene but who were responsible for identifying the hazardous material. This data element is best used with the data element “reference material used” (see 16.4.7), since the combination shows who identified the material and what they used for resources.

**16.4.6.2** The designations in Table 16.4.6.2 shall be used to code data about the personnel who identified the hazardous material.

#### 16.4.7 Reference Material Used.

**16.4.7.1** The data element “reference material used” describes a variety of informational sources that can assist in identifying a hazardous material. This data element is best used with the data element “personnel identifying hazardous material” (see 16.4.6), since the combination shows who identified the material and what they used for resources.

**16.4.7.2** The designations in Table 16.4.7.2 shall be used to code data about the reference material used to identify the hazardous material.

#### 16.4.8 Hazardous Materials (Hazmat) Actions Taken.

**16.4.8.1** The data element “hazmat actions taken” describes the actions taken by the emergency forces to mitigate the release of the hazardous material or to contain the spill or leak. This data element is intended to supplement the data element “type of action taken” (see Section 11.5) by identifying specialized actions taken by specially trained hazmat personnel. More than one significant action is often taken by emergency forces at a hazmat incident, and it is recommended that reporting systems allow for the collection of multiple hazmat actions taken. This data can be used to establish training needs and to guide future efforts at incident management.

**16.4.8.2** The designations in Table 16.4.8.2 shall be used to code data about the actions taken by the emergency personnel.

**Table 16.4.5.2 Physical State of Hazardous Material Coding Structure**

1	Solid.
2	Liquid.
3	Gas.
U	Physical state of hazardous material undetermined or not reported.

**Table 16.4.6.2 Personnel Identifying Hazardous Material Coding Structure**

1	On-Site Fire Department Personnel.
11	Hazardous materials team personnel.
12	Fire service personnel not specifically trained in hazardous materials. Excluded are hazardous materials team personnel (11) and hazardous materials specialists and technicians (13).
13	Hazardous materials specialist, technician.
14	Chemist, toxicologist.
15	Medical doctor.
17	Laboratory personnel.
10	On-site fire department personnel not able to be classified further.
2	Off-Site Fire Department Personnel.
21	Hazardous materials team personnel.
22	Fire service personnel not specifically trained in hazardous materials. Excluded are hazardous materials team personnel (11) and hazardous materials specialists and technicians (13).
23	Hazardous materials specialist, technician.
24	Chemist, toxicologist.
25	Medical doctor.
26	Dispatch center personnel.
27	Laboratory personnel.
20	Off-site fire department personnel not able to be classified further.
3	On-Site Non-Fire Service Personnel.
31	Brigade, hazardous materials response team.
32	Responsible owner, manager, supervisor.
33	Driver of transporting vehicle.
34	Chemist, toxicologist.
35	Medical doctor.
37	Laboratory personnel.
41	Hazardous materials response team personnel. Excluded are hazardous materials clean-up personnel (48).
43	Hazardous materials specialist. Excluded are hazardous materials clean-up personnel (48).
48	Hazardous materials clean-up personnel.
40	On-site non-fire service personnel not able to be classified further.
5	Off-Site Non-Fire Service Personnel.
51	Hazardous materials response team personnel.
52	Responsible owner, manager.
54	Chemist, toxicologist. Excluded are toxic or poison center (58) and university (61).
55	Medical doctor. Excluded are medical center and hospital (62).
56	Dispatcher.
57	Laboratory personnel.
58	Toxic center.
59	Chemtrec, industrial expert.
61	University.
62	Medical center/hospital.

(continues)

Table 16.4.6.2 *Continued*

	Excluded are medical doctors (55).
63	Hazardous materials specialist, consultant.
60	Off-site non-fire service personnel not able to be classified further.
9	Other Personnel.
00	Personnel identifying hazardous material not able to be classified further.
UU	Personnel identifying hazardous material undetermined or not reported.

Table 16.4.7.2 Reference Material Used Coding Structure

1	On-Site Reference Materials.
11	Department of Transportation (DOT) manual.
12	Chemical Hazards Response Information System (CHRIS) manual.
13	Material safety data sheet (MSDS).
14	Placards or signs on building, room, container, vehicle.
15	Labels.
16	Computer software.
17	Shipping papers and inventory listings.
18	Handbooks, textbooks, reference books.
	Excluded are the DOT manual (11) and the CHRIS manual (12).
10	On-site reference materials not able to be classified further.
2	Off-Site Reference Materials.
21	Department of Transportation (DOT) manual.
22	Chemical Hazards Response Information System (CHRIS) manual.
23	Material safety data sheet (MSDS).
24	(This subdivision not used in this edition.)
25	Contractual information services.
26	Computer software.
27	Shipping papers and inventory listings.
28	Handbooks, textbooks, reference books.
	Excluded are the DOT manual (21) and the CHRIS manual (22).
20	Off-site reference materials not able to be classified further.
9	Other Reference Material Used.
98	No reference material used.
00	Reference material used not able to be classified further.
UU	Reference material used undetermined or not reported.

## 16.5 Container Description.

### 16.5.1 Container Type.

**16.5.1.1** The data element "container type" describes the type or configuration of the container used to hold the hazardous material.

Table 16.4.8.2 Hazardous Materials (Hazmat) Actions Taken Coding Structure

1	Hazardous Condition.
11	Identify, analyze hazardous materials.
12	Hazardous material detection, monitoring, sampling, and analysis. Included are actions to detect, monitor, and sample hazardous materials using a variety of detection instruments, including combustible gas indicators or explosimeter; oxygen monitors, calorimetric tubes, specific chemical monitors, and others.
13	Hazardous material spill control and confinement. Included are confining the product release to a limited area by using absorbents, damming or diking, diversion of liquid runoff, dispersion, retention, or vapor suppression.
14	Hazardous material leak control and containment. Included are actions to keep a material within its container by plugging or patching operations, neutralization, pressure isolation or reduction, solidification, and vacuuming.
15	Remove hazard or hazardous materials. Included are removing hazardous materials from a damaged container or contaminated area, product offloading or transfer, controlled burning or product flaring, venting, and overpacking the container.
16	Decontaminate persons or equipment. Included are actions taken to prevent the spread of contaminants from the "hot zone" to the "cold zone"; and gross, technical, or advanced personal decontamination of victims, emergency responders, and equipment.
2	Isolation and Evacuation.
	Included are actions taken to isolate the contaminated area or evacuate those persons affected by a hazardous materials release or potential release.
21	Determine the materials released to be nonhazardous, through product identification and environmental monitoring.
22	Isolate area and establish hazard control zones. Included are actions taken to isolate the affected area, deny entry to unprotected persons, and establish hazard control zones (hot, warm, and cold).
23	Provide apparatus. Included is providing apparatus to conduct evacuation efforts.
24	Provide equipment. Included are providing equipment for evacuation efforts and the care of evacuees.
25	Provide water. Included are actions taken to provide water supply for exposure protection or fire control efforts.
26	Control crowd.

(continues)

Table 16.4.8.2 *Continued*

	Included are actions taken by fire department personnel to control crowds and onlookers.
27	Control traffic. Included are actions taken by fire department personnel to control traffic along evacuation routes.
28	Protect-in-place operations. Included are actions taken to protect civilians in their homes, schools, or places of work, without evacuating them from a potentially hazardous area.
3	Information, Investigation, and Enforcement. Included are actions taken to disseminate information about a hazardous materials incident for the purposes of notifying the public, requesting mutual aid from local, state, or federal agencies, and conducting investigation or enforcement operations.
31	Refer to proper authority. Included are actions taken to "hand off" the incident from emergency response personnel to cleanup crews or other agencies responsible for restoring the facility and environment to a pre-incident condition.
32	Notify other agencies. Included are actions taken to ensure that other agencies are involved or notified of the incident so that they may provide assistance or fulfill their legally mandated responsibilities.
33	Provide information to the public or media. Included are actions taken to provide information to the public through media resources or through alerting systems such as the Emergency Broadcast System. Also included are sounding of horns, klaxons, and other warning devices located at fixed facilities and used for evacuation purposes.
34	Investigate. Included are investigating the cause of a hazardous materials release, identifying the financially responsible party, and enabling cost-recovery efforts.
35	Standby. Included is ensuring that sufficient resources are available on standby for possible use at a hazardous materials incident.
9	Other Actions Taken.
00	Hazardous materials action taken not able to be classified further.
UU	Hazardous materials action taken undetermined or not reported.

**16.5.1.2** The designations in Table 16.5.1.2 shall be used to code data about the type of container. For incident reporting, a barrel is a unit of measure. (See 16.5.4.) Containers commonly referred to as barrels shall be classified in subdivision 11 (drums).

Table 16.5.1.2 Container Type Coding Structure

1	Portable Container. A container designed to be transported to a location and left there until emptied, when it can be disposed of or returned to a vendor for refill and reuse.
11	Drum. A cylindrical container used to hold non-bulk quantities of product typically in the 55-gallon (208 L) range. Drums can be of closed- or open-head design and be constructed of a range of materials, including metal, plastic, or fiberboard. Drums can be used for liquid or solid materials, including flammable liquids or solvents, corrosives, poisons, and other hazardous materials.
12	Cylinder. A container used for storing pressurized, liquefied, and dissolved gases. The three types of cylinders include aerosol containers, uninsulated containers, and cryogenic/insulated containers. Cylinders are usually constructed of metal, but some aerosol containers can be plastic or glass. Cylinders have a wide range of service pressures from a few pounds per square inch to several thousand pounds per square inch. Some examples of materials stored in cylinders include acetylene, oxygen, carbon dioxide, nitrogen, and propane. Large cylinders known as "ton containers" are used to store chlorine.
13	Can or bottle. A container used to store quantities of liquids or solids often intended for household or laboratory use. Cans and bottles can be constructed of metal, glass, plastic, or ceramic. Flammable liquids, solvents, corrosives, and other hazardous materials can be stored in these containers.
14	Carboy. A glass or plastic container used to store moderate amounts [up to over 20 gallons (7.6 L)] of liquids in industrial or laboratory settings. Carboys are usually shipped in an outer packaging of polystyrene or wood.
15	Boxes and cartons. Rigid packages that completely enclose their contents, they can be constructed of metal, plastic, fiberboard, or wood. Boxes or cartons can be used to store liquids or solids and can contain a wide range of hazardous materials. They can also be used as exterior packaging around bottles or cans and can contain radioactive or infectious materials packaged for use in medical facilities or laboratories.
16	Bag or sack.

(continues)



Table 16.5.1.2 *Continued*

	Most commonly used for the storage of solid materials, bags or sacks are versatile packaging that can also be used for liquids. Bags and sacks can be constructed of cloth, paper, plastic, or a combination of materials in sizes ranging from a few to 100 pounds of material. Flexible intermediate bulk containers (FIBCs), known as “supersacks,” can contain from 119 gal to 793 gal (450 L to 3000 L) of product.
17	Casks. Specially designed, tested, and certified containers, casks are designed to transport highly radioactive materials. They are constructed to withstand high impacts and have a very low potential of container failure.
18	Hose. A portable, flexible tube used to transfer liquid product from one location to another.
10	Portable container not able to be classified further. Included are containers other than those classified in 11 through 18 that meet the definition of a portable container.
2	Fixed Container. A container, designed and built in a fixed location, that is not intended to be moved or transported from that location.
21	Tanks and silos. These containers can hold a wide range of liquid or solid materials in quantities ranging from several pounds or gallons, to bulk storage tanks that can hold thousands of gallons of product. They are usually constructed of metal and might or might not be pressurized.
22	Pipe or pipeline. Pipes are used to transport liquids or gases from one location to another. They can be constructed of metal, polyvinylchloride (PVC), or plastic. Pipes can begin and end within a fixed facility or travel some distance as part of a pipeline.
23	Bin. Used to store any quantity of solid or granular materials at a fixed facility, bins can be open or closed and are often used for materials that are insensitive to moisture or minimally reactive.
24	Machinery or process equipment. Equipment used for the manufacture of chemical compounds at a fixed facility. Process equipment can include a variety of containers that are combined together to facilitate the reaction of chemicals into different compounds.
28	Hose.

(continues)

Table 16.5.1.2 *Continued*

	A fixed, flexible hose that can be permanently attached to a storage vessel or can be used to transport materials from one location to another within a facility.
20	Fixed container not able to be classified further. Included are containers other than those classified in 21 through 28 that meet the definition of a fixed container.
3	Natural Containment. Any feature that is part of the permanent topography of the area. Natural containment areas can be manmade in origin (for example, a manmade lake or pond).
31	Sump or pit. A depression created in the ground that forms a containment area for the storage of liquid or solid materials. Included are sewage treatment or sludge pits.
32	Pond or surface impoundment. A natural containment feature used to hold liquid or solid materials, such as a manure pond at a farm or water storage areas at a wastewater treatment facility.
33	Well. A well is a deep hole in the ground that was originally intended to provide access to groundwater. Dry wells can be used for the storage of hazardous materials.
34	Dump site or landfill. A location where various articles of trash and rubbish are routinely deposited (legally or otherwise). Dump sites and landfills can contain a wide variety of hazardous substances.
30	Natural container not able to be classified further. Included are containers other than those classified in 31 through 34 that meet the definition of a natural container.
4	Mobile Container. A container designed to be transported from one location to another, intended to store quantities of product that can be offloaded at intermediate locations, or for the use of the transporting vehicle itself.
41	Vehicle fuel tank and associated piping. Vehicle fuel tanks are mobile tanks that can hold from a few gallons to several thousand gallons of product, as in the case of a typical diesel-electric locomotive. Vehicle fuel tanks are intended to provide fuel solely for the operation of the vehicle.
42	Product tank on or towed by vehicle. These mobile containers can be on the vehicle or towed behind it and are usually intended to transport product from one location to another for offloading or storage. Included are semi-trailers, trailers, or vehicles specially designed for the transport of a commodity such as home heating oil or propane.

(continues)

**Table 16.5.1.2** *Continued*

43	Piping associated with mobile product tank loading or offloading. The piping and associated loading/offloading hardware that is attached to the mobile container.
48	Hose. A flexible hose used for loading or offloading mobile containers after it is attached to a discharge pipe or outlet.
40	Mobile container not able to be classified further. Included are containers other than those classified in 41 through 48 that meet the definition of a mobile container.
9	Other Containers.
91	Rigid intermediate bulk container (RIBC). RIBCs can contain from 119 gal to 793 gal (450 L to 3000 L) of liquid or solid product. They are used in industry for the transport and storage of a wide variety of materials and can be constructed of steel or aluminum, but are often formed from rigid polyethylene. RIBCs are transported to a fixed facility where they are used until they are emptied of product, after which they are returned to a vendor for refill and reuse.
00	Container type not able to be classified further.
NN	No container.
UU	Container type undetermined or not reported.

**16.5.2 Container Material.**

**16.5.2.1** The data element “container material” identifies the material of construction of the container that was the apparent source of failure in a hazardous materials release.

**16.5.2.2** The designations in Table 16.5.2.2 shall be used to code data about the container’s material of construction.

**16.5.3 Special Container Features.**

**16.5.3.1** The data element “special container features” is used to identify those special features of a container that are designed to keep the contents of that container in the appropriate state or to protect the container from accidentally releasing the contents.

**16.5.3.2** The designations in Table 16.5.3.2 shall be used to code data about any special features of the container.

**Table 16.5.2.2 Container Material Coding Structure**

1	Iron, steel, and other iron alloys.
2	Aluminum, aluminum alloys.
3	Copper, brass, bronze, and other copper alloys.
4	Plastic/fiberglass, rigid.
5	Plastic or rubber, flexible.
6	Wood, paper, textile, and other cellulose products.
7	Glass, pottery, and clay.
8	No container.
0	Container material not able to be classified further.
U	Container material undetermined or not reported.

**16.5.4 Container Capacity and Units of Measure.**

**16.5.4.1** It is recommended that the design capacity of the container be recorded. The design capacity is more useful than the actual quantity of material in the container because this data element will help assess the total release potential for this container. The actual capacity of the container in pounds, gallons, cubic feet, or some other unit of measurement shall be recorded, and the units of measure specified. (See 16.5.4.2 for appropriate classifications of units of measure.)

**16.5.4.2** The data element “units of measure” can be used to record the units in which the capacity of a container or the amount of hazardous material released is measured. The designations in Table 16.5.4.2 shall be used to code units of measure.

**16.6 Release Information.**

**16.6.1 Quantity Released.** The amount of hazardous material released shall be recorded using the common measurement for

**Table 16.5.3.2 Special Container Features Coding Structure**

1	Insulated.
2	Pressurized.
3	Armored. Included are special features added to prevent the failure of the primary container.
4	Insulated and pressurized.
5	Insulated and armored.
6	Insulated, armored, and pressurized.
7	Armored and pressurized.
8	No special container features.
0	Special container features not able to be classified further.
U	Special container features undetermined or not reported.

**Table 16.5.4.2 Container Capacity and Units of Measure Coding Structure**

1	Volumetric Units.
11	Ounce (liquid).
12	Gallon.
13	Barrel [42 gal (159 L)].
14	Liter.
15	Cubic foot.
16	Cubic meter.
2	Weight Units.
21	Ounce (weight).
22	Pound.
23	Gram.
24	Kilogram.
3	Airborne Units.
31	Parts per billion.
32	Parts per million.
33	Micro roentgen.
34	Milli roentgen.
35	Roentgen.
36	RAD.
37	REM.
38	Curie.

the particular material. However, it is important to know the units in which the quantity is being expressed (for example, pounds, gallons, cubic feet, etc.). (See 16.5.4.2 for classifications for units of measure.)

**16.6.2 Extent of Hazardous Materials Release.** The “extent of hazardous materials release” and the “area contaminated, unit of measure” data elements shall quantify the physical scope of confinement or the size of the physical area encompassed by the released material.

**16.6.2.1** The area contaminated shall be qualified by a unit of measure.

**16.6.2.2** Where the extent of hazardous material release is to be coded, the coding structure in Table 16.6.2.2 shall be used.

**Table 16.6.2.2 Extent of Hazardous Material Release Coding Structure**

1	Confined to vehicle/equipment of origin.
2	Confined to room of origin.
3	Confined to story of origin.
4	Confined to structure of origin.
5	Confined to specific property use of origin.
6	Confined to general property use of origin.
7	Released beyond general property use of origin.
N	No release.
0	Extent of hazardous materials release not able to be classified further.
U	Extent of hazardous materials release undetermined or not reported.

**16.6.2.3** Where the area contaminated, unit of measure, is to be coded, the coding structure in Table 16.6.2.3 shall be used.

**Table 16.6.2.3 Area Contaminated, Unit of Measure Coding Structure**

1	Acres
2	Square feet
3	Square miles
4	Hectares
5	Square meters
6	Square kilometers

**16.6.3 Environmental Contamination.** The data element “environmental contamination” is used to record and code data about the actual or suspected areas of environmental contamination. The designations in Table 16.6.3 shall be used to code data about the environmental contamination.

**Table 16.6.3 Environmental Contamination Coding Structure**

1	Air.
2	Water.
3	Ground.
4	Water and ground.
5	Air and ground.
6	Water and air.
7	Air, water, and ground.

(continues)

**Table 16.6.3 Continued**

N	No environmental impact.
0	Environmental contamination not able to be classified further.
U	Environmental contamination undetermined or not reported.

#### 16.6.4 Cause of Release.

**16.6.4.1** The data element “cause of release” describes the reason the hazardous material was released or spilled. It reports a primary cause for the release. Information on the cause of release is essential as a guide to spill and release prevention efforts. It can indicate whether a release is potentially preventable through public education, code enforcement, investigations, or another strategy. More detailed information shall be collected about the factors contributing to the release, using 16.6.5.2.

**16.6.4.2** The designations in Table 16.6.4.2 shall be used to code data about the cause of the hazardous material release.

**Table 16.6.4.2 Cause of Release Coding Structure**

1	Intentional release.
2	Unintentional release.
3	Container or containment failure.
4	Act of nature.
5	Cause of release under investigation.
U	Cause of release undetermined after investigation.

#### 16.6.5 Hazardous Materials Release Factors.

**16.6.5.1** The data element “hazardous materials release factors” describes the factors present at the time and place of the incident that caused or contributed to the release or threatened release of a hazardous material. The data will assist in the development and targeting of prevention measures.

**16.6.5.2\*** The designations in Table 16.6.5.2 shall be used to code data about factors that caused or contributed to the hazardous material release.

**Table 16.6.5.2 Hazardous Materials Release Factor Coding Structure**

1	(This division not used in this edition.)
2	(This division not used in this edition.)
3	Failure to Control Hazardous Material.
31	Abandoned, discarded hazardous material. Excluded are falling asleep (33), impairment by drugs or alcohol (37), or other impairments (38).
32	Failure to maintain proper storage or use temperature.
33	Falling asleep and losing control of operations.
34	Inadequate control of hazardous materials. Included are improper transfer and overfilling of a container. Excluded is accidental release due to improper container (45).

(continues)

Table 16.6.5.2 *Continued*

35	<i>(This subdivision not used in this edition.)</i>
36	<i>(This subdivision not used in this edition.)</i>
37	Person possibly impaired by drugs or alcohol while controlling hazardous materials. Included are people who fall asleep as a result of drugs or alcohol. Excluded are people who simply fall asleep (33).
38	Person otherwise impaired. Included are unconsciousness and mental or physical impairment. Excluded are people who simply fall asleep (33).
30	Failure to control hazardous materials not able to be classified further.
4	Misuse of Hazardous Materials.
41	<i>(This subdivision not used in this edition.)</i>
42	Improper mixing technique. Included are mixing and compounding of chemicals. Excluded are hazardous materials spills (34).
43	Hazardous materials used improperly. Included are chemicals used for the wrong purpose.
44	<i>(This subdivision not used in this edition.)</i>
45	Improper container. Included are containers not designed for the hazardous material contained.
46	Improper movement of hazardous materials containers.
47	Improper storage procedures. Included is storage near heating equipment and moving parts.
48	Children playing with hazardous materials and having no knowledge of the dangers of hazardous materials.
40	Misuse of hazardous materials not able to be classified further.
5	Mechanical Failure, Malfunction. Where there is human failure to control, this should be classified in division 3.
51	Automatic control failure.
52	Manual control failure.
53	Short circuit, ground fault.
54	Other part failure, leak, break.
55	Other electrical failure.
56	Lack of maintenance, worn out. Included are failures to maintain hazardous materials handling equipment. Excluded are short circuits or ground fault (53) and failure to clean (75).
50	Mechanical failure, malfunction not able to be classified further.
6	Design, Construction, Installation Deficiency.
61	Design deficiency. Included are structures and containers improperly designed for the specific hazardous material.
62	Construction deficiency. Included are improperly built structures and containers.

(continues)

Table 16.6.5.2 *Continued*

63	<i>(This subdivision not used in this edition.)</i>
64	Installation deficiency. Included is the improper installation of equipment for handling or processing hazardous materials.
60	Design, construction, installation deficiency not able to be classified further.
7	Operational Deficiency. Misuse of hazardous materials should be classified in division 4. Misuse of equipment should be classified in division 7.
71	Collision, overturn, knockdown. Included are automobiles and other vehicles.
72	Accidentally turned on, not turned off.
73	Equipment unattended.
74	Equipment overload.
75	Failure to clean equipment.
76	Improper startup, shutdown procedures.
77	Equipment used for purpose not intended. Excluded is overloaded equipment (74).
78	Equipment not being operated properly. Included are situations where safety or control devices are bypassed.
70	Operational deficiency not able to be classified further.
8	Natural Condition. For use where the natural condition in the following subdivisions changed a normally safe operation into an unsafe one.
81	High wind.
82	Earthquake.
83	High water, flood.
84	Lightning.
85	Low humidity.
86	High humidity.
87	Low temperature.
88	High temperature.
80	Natural condition not able to be classified further.
9	Other Release Factors.
91	Animal.
92	Secondary release following previous release.
93	Reaction with other chemical.
94	Explosion and fire. Included are releases of hazardous material as a result of an explosion and fire. Excluded are releases where there is an explosion only (95) and fire only (96).
95	Explosion only, no after-fire.
96	Fire only, no explosions. Included are releases of hazardous materials by the fire or during firefighting operations.
97	Failure to use ordinary care under the circumstances, other than as classified above.
NN	No release.
00	Hazardous materials release factor not able to be classified further.
UU	Hazardous materials release factor undetermined or not reported.

### 16.6.6 Factors Affecting Mitigation.

**16.6.6.1** The data element “factors affecting mitigation” captures the factors that were present at the time and location of the incident that affected the ability of the fire department to mitigate the release or threatened release of a hazardous material. Information on factors affecting or impeding the mitigation of a release can be used to guide training efforts, resource planning and deployment, incident management, and prevention efforts.

**16.6.6.2** The designations in Table 16.6.6.2 shall be used to code data about the factors affecting the mitigation of the hazardous materials release.

**Table 16.6.6.2 Factors Affecting Mitigation Coding Structure**

1	Site Factors.
11	Released into water table.
12	Released into sewer system.
13	Released into wildland or wetland area.
14	Released in residential area.
15	Released in occupied building.
16	Air release in confined area.
17	Released, slick on waterway.
18	Released on major roadway.
10	Site factor not able to be classified further.
2	Release Factors.
21	Release of extremely dangerous agent, including chemical or biohazard agent; population at risk.
22	Threatened release of extremely dangerous agent, chemical, or biohazard; population at risk.
23	Combination of release and fire impeded mitigation of hazmat incident.
24	Multiple chemicals released, unknown potential effects.
25	Release of unidentified chemicals, unknown potential effects.
20	Release factor not able to be classified further.
3	Impediment or Delay Factor.
31	Access to release area.
32	Hazmat apparatus unavailable.
33	Hazmat apparatus failure.
34	Traffic delay.
35	Trouble finding location.
36	Communications delay.
37	Hazmat-trained crew unavailable or delayed.
30	Impediment or delay factor not able to be classified further.
4	Natural Conditions Factor.
41	High wind.
42	Storm.
43	High water, including floods.
44	Earthquake.
45	Extreme high temperature.
46	Extreme low temperature.
47	Ice or snow conditions.
48	Lightning.
49	Animal.

(continues)

**Table 16.6.6.2 Continued**

40	Natural condition factor not able to be classified further.
0	Other Factor Affecting Mitigation.
00	Factor affecting mitigation not able to be classified further.
NN	No factors affecting mitigation.
UU	Factor affecting mitigation undetermined or not reported.

### 16.7 Responsible Persons.

**16.7.1 Witness Identification.** It is helpful to record the name, address, and telephone numbers of each person who witnessed the release of hazardous materials or the accident that led to the release.

**16.7.2 Driver's License Number and State.** The driver's license number of the person operating the vehicle at the time of the incident and the state of the registration on the driver's license are useful in identifying an important witness to the incident if further information is needed at a later time.

**16.7.3 ICC/DOT Number.** The “ICC/DOT Number” identifies the commercial carrier by either the Interstate Commerce Commission (ICC) or the Department of Transportation (DOT) registration. From this number, detailed information on the responsible parties involved in the incident can be obtained.

### 16.8 Disposition of Incident.

**16.8.1** The disposition of incident describes how the fire service participation in a hazardous materials incident ended. Disposition data provides a link to other agencies and their data to establish the sequence of events from release through complete restoration of the area if possible. Information regarding disposition of the incident will further assist the fire service in better understanding the extent to which it is fully resolving the incident and the extent to which other agencies are providing assistance in incident mitigation.

**16.8.2** The numbers in Table 16.8.2 shall be used to code data about the disposition of the hazardous materials release incident.

**Table 16.8.2 Disposition of Incident Coding Structure**

1	Incident completed by fire service only.
2	Incident completed while fire service was present. Included are incidents where assistance was provided by non-fire service agencies.
3	Incident scene released for disposition to local agency.
4	Incident scene released for disposition to county agency.
5	Incident scene released for disposition to state agency.
6	Incident scene released for disposition to federal agency.
7	Incident scene released for disposition to private agency.
8	Incident scene released for disposition to property owner/manager.

(continues)

**Table 16.8.2** *Continued*

0	Disposition of incident not able to be classified further.
U	Disposition of incident undetermined or not reported.

## Chapter 17 Fire Origin and Cause Investigation

### 17.1 Administration.

**17.1.1\*** The purpose of the data elements identified by this chapter is to provide for the collection, compilation, and analysis of data associated with fires that are completed by a fire investigator meeting the minimum qualification requirements of the NFPA 1033.

**17.1.2** The investigation will apply the scientific method as defined by Figure A.1.1.3 for all data collected.

### 17.2 Case Management.

**17.2.1\* Agency Referral.** Where the agency referral is to be coded, the coding structure in Table 17.2.1 shall be used.

#### 17.2.2 Laboratory Used.

**17.2.2.1\*** The “laboratory used” data element shall provide the means for the collection and analysis of all data associated with a specific incident.

**17.2.2.2** Where data on the laboratory used is to be coded, the coding structure in Table 17.2.2.2 shall be used.

### 17.3 Personal Factors.

**17.3.1\* Motivation Factors.** Where data on motivation factors is to be coded, the coding structure in Table 17.3.1 shall be used.

**17.3.2\* Group Involvement.** Where data on group involvement is to be coded, the coding structure in Table 17.3.2 shall be used.

**17.4 Incendiary Devices.** The data elements in this section shall be used to track the designs and fuels used in incendiary devices for later analysis and linking of cases.

**Table 17.2.1 Agency Referral Coding Structure**

1	Local
2	State
3	Federal

**Table 17.2.2.2 Laboratory Used Coding Structure**

Code	Description
1	Local.
2	State.
3	ATF.
4	FBI.
5	Other federal laboratory.
6	Private.
N	None.

**Table 17.3.1 Suspected Motivation Factor Coding Structure**

1	Vandalism.
11	Willful and malicious mischief.
12	Peer or group pressure.
2	Excitement.
21	Thrill seeking.
22	Attention seeking.
23	Recognition.
24	Sexual gratification or perversion.
3	Revenge.
31	Personal retaliation.
32	Societal retaliation.
33	Institutional retaliation.
34	Group retaliation.
4	Crime Concealment.
41	Murder concealment.
42	Burglary concealment.
43	Destruction of records or documents.
5	Profit.
51	Fraud to collect insurance.
52	Fraud to liquidate property.
53	Fraud to dissolve a business.
54	Fraud to conceal a loss or liquidate inventory.
55	Employment.
56	Parcel property clearance.
57	Competition.
6	Extremism.
61	Terrorism.
62	Riot or civil disturbance.
00	Motivational factor not able to be classified further.
UU	Motivational factor undetermined or not reported.

**Table 17.3.2 Group Involvement Coding Structure**

Code	Description
1	International terrorist.
2	Gang.
3	Anti-government group.
4	Outlaw motorcycle organization.
5	Organized crime.
6	Racial/ethnic hate group.
7	Religious hate group.
8	Sexual preference hate group.
9	Domestic terrorist.
N	None; acted alone.
0	Apparent group involvement not able to be classified further.
U	Apparent group involvement undetermined or not reported.

### 17.4.1 Container Type.

**17.4.1.1** The “container type” data element shall describe the container used as part of the incendiary device.

**17.4.1.2\*** Where data on the container type is to be coded, the following coding structure shall be used:

- (1) Bottle, glass 11
- (2) Bottle, plastic 12
- (3) Jug 13
- (4) Pressurized container 14
- (5) Can 15
- (6) Gasoline or liquid fuel can 16
- (7) Box 17
- (8) No container NN
- (9) Container type not able to be classified further 00
- (10) Container type undetermined or not reported UU

#### 17.4.2 Ignition/Delay Device.

**17.4.2.1** The “ignition/delay device” data element shall describe how the incendiary device was ignited.

**17.4.2.2** Where an ignition/delay device is to be coded, the coding structure in Table 17.4.2.2 shall be used.

#### 17.4.3 Incendiary Device Fuel.

**17.4.3.1** The “incendiary device fuel” data element shall describe the type of fuel used in the incendiary device.

**17.4.3.2** Where data on the incendiary device fuel is to be coded, the coding structure in Table 17.4.3.2 shall be used.

**17.5 Ignition.** Ignition, as it applies to fires only, shall be reported as the following three data elements:

- (1) Cause of ignition
- (2) Physical factors contributing to ignition
- (3) Human factors contributing to ignition

**Table 17.4.2.2 Ignition/Delay Device Coding Structure**

Code	Description
11	Wick or fuse.
12	Candle.
13	Cigarette and matchbook.
14	Electronic component.
15	Mechanical device.
16	Remote control.
17	Road flare/fuse.
18	Chemical component.
19	Trailer/streamer.
20	Open flame source.
NN	No device.
00	Ignition/delay device not able to be classified further.
UU	Ignition/delay device undetermined or not reported.

**Table 17.4.3.2 Incendiary Device Fuel Coding Structure**

Code	Description
11	Ordinary combustibles.
12	Flammable gas.
14	Ignitable liquid.
15	Ignitable solid.
16	Pyrotechnic material.
17	Explosive material.
00	Incendiary device not able to be classified further.
UU	Incendiary device fuel undetermined or not reported.

#### 17.5.1 Cause of Ignition.

**17.5.1.1\*** The cause of ignition shall identify how the heat of ignition and the material first ignited combined to cause a fire.

**17.5.1.2\*** Where the cause of ignition is to be coded, the following coding structure shall be used:

- (1) Intentional — 1
- (2) Unintentional — 2
- (3) Failure of equipment or heat source — 3
- (4) Act of nature — 4
- (5) Cause under investigation — 5
- (6) Cause undetermined after investigation — U

#### 17.5.2\* Physical Factors Contributing to Ignition.

**17.5.2.1\*** The physical factors contributing to ignition shall identify situations, actions, or omissions that contributed to allowing the heat source and combustible material to combine to ignite the fire.

**17.5.2.2\* Physical Factors Contributing to Ignition Coding Structure.** Where the factors contributing to ignition are to be coded, the coding structure provided in 17.5.2.2.1 through 17.5.2.2.8 shall be used.

**17.5.2.2.1 Misuse of Material or Product (1).** For misuse of material or product, the following coding structure shall be used:

- (1) Abandoned or discarded materials or products — 11
- (2) Heat source and combustibles too close to each other — 12
- (3) Cutting, welding too close to combustible — 13
- (4) Flammable liquid or gas spilled, released accidentally — 14
- (5) Improper fueling technique — 15
- (6) Flammable liquid used to kindle fire — 16
- (7) Washing part or material, cleaning, refinishing, or painting with flammable liquid — 17
- (8) Improper container or storage procedure — 18
- (9) Playing with heat source — 19
- (10) Misuse of materials or products not able to be classified further — 10

**17.5.2.2.2 Mechanical Failure or Malfunction (2).** For mechanical failure or malfunction, the following coding structure shall be used:

- (1) Automatic control failure — 21
- (2) Manual control failure — 22
- (3) Leak or break, part failure — 23
- (4) Worn out, lack of maintenance — 25
- (5) Backfire — 26
- (6) Improper fuel used — 27
- (7) Mechanical failure or malfunction not able to be classified further — 20

**17.5.2.2.3 Electrical Failure or Malfunction (3).** For electrical failure or malfunction, the following coding structure shall be used:

- (1) Water-caused short-circuit arc — 31
- (2) Short circuit, ground fault, or arc from mechanical damage — 32
- (3) Short circuit, ground fault, or arc from defective, worn insulation — 33
- (4) Unspecified short circuit, ground fault, or arc — 34
- (5) Arc from faulty contact, broken conductor — 35



- (6) Arc or spark from operating equipment, switch, or electric fence — 36
- (7) Fluorescent-light ballast or transformer — 37
- (8) Electrical failure or malfunction not able to be classified further — 30

#### 17.5.2.2.4 Design, Manufacturing, or Installation Deficiency

(4). For design, manufacturing, or installation deficiency, the following coding structure shall be used:

- (1) Design deficiency — 41
- (2) Construction deficiency — 42
- (3) Installation deficiency — 43
- (4) Manufacturing deficiency — 44
- (5) Design, manufacturing, or installation deficiencies not able to be classified further — 40

**17.5.2.2.5 Operational Deficiency (5).** For operational deficiency, the following coding structure shall be used:

- (1) Collision, overturn, knockdown, run over — 51
- (2) Accidentally turned on, not turned off — 52
- (3) Equipment unattended — 53
- (4) Equipment overloaded — 54
- (5) Failure to clean — 55
- (6) Improper startup or improper shutdown procedures — 56
- (7) Equipment used for purpose not intended — 57
- (8) Equipment not being operated properly — 58
- (9) Operational deficiencies not able to be classified further — 50

**17.5.2.2.6 Natural Condition (6).** For a natural condition, the following coding structure shall be used:

- (1) High wind — 61
- (2) Storm — 62
- (3) High water, including floods — 63
- (4) Earthquake — 64
- (5) Volcanic action — 65
- (6) Animal — 66
- (7) Natural conditions not able to be classified further — 60

**17.5.2.2.7 Fire Spread or Control (7).** For fire spread or control, the following coding structure shall be used:

- (1) Exposure fire — 71
- (2) Rekindle from a previous fire — 72
- (3) Outside or open fire or debris or waste disposal — 73
- (4) Outside or open fire for warming or cooking — 74
- (5) Agricultural or land management burns — 75
- (6) Fire spread or control not able to be classified further — 70

**17.5.2.2.8 Other Factor Contributing to Ignition (0).** For any other factor contributing to ignition, the following coding structure shall be used:

- (1) Physical factors contributing to ignition not able to be classified further — 00
- (2) No factor contributing to ignition — NN
- (3) Factor contributing to ignition undetermined or not reported — UU

### 17.5.3 Human Factors Contributing to Ignition.

**17.5.3.1\*** The data element “human factors contributing to ignition” shall identify the human-related conditions or situations that allowed the heat source and combustible material to combine to ignite the fire.

**17.5.3.2\*** Where the human factors contributing to ignition are to be coded, the following coding structure shall be used:

- (1) Person fell asleep — 1
- (2) Person possibly impaired by drugs or alcohol — 2
- (3) Unattended or unsupervised person — 3
- (4) Person possibly mentally impaired — 4
- (5) Person physically impaired — 5
- (6) Multiple persons involved — 6
- (7) Age was a factor — 7
- (8) Gender was a factor — 8
- (9) No human factors contributing to ignition — N
- (10) Human factors contributing to ignition undetermined or not reported — U

**17.6 Flame Development.** The identification of the materials on which the flames developed and spread, as well as the factors that contributed to flame travel, is useful in understanding how the fire advanced through the structure. Fire spread not only contributes to increased monetary loss, but also cuts off avenues of escape or creates unsafe structural conditions that then affect firefighting operations.

#### 17.6.1 Materials Involved.

**17.6.1.1** Often, there is not just one significant path of flame travel. Consideration shall be given to providing multiple fields for recording materials involved in flame development and spread. If only one material or path is to be reported, it shall be that which had the most impact on life safety or, if that was not a factor, the one that significantly allowed the fire to spread.

**17.6.1.2** When materials involved in flame development and spread are classified, both the form of the material (its use) and the type of material (its composition) shall be identified. The classification numbers in Section 8.6 for material identification shall be used to classify materials involved in fire spread.

#### 17.6.2 Factors Contributing to Flame Travel.

**17.6.2.1** Factors contributing to flame travel identify the conditions or avenue that allowed rapid, unusual, or intense flame spread (char) in or beyond the room or area of origin.

**17.6.2.2\* Factors Contributing to Flame Travel Coding Structure.** Where the factors contributing to flame travel are to be coded, the coding structure provided in 17.6.2.2.1 through 17.6.2.2.7 shall be used.

**17.6.2.2.1 Interior Finish (1).** For interior finish, the following coding structure shall be used:

- (1) Combustible ceiling finish, covering — 11
- (2) Combustible wall finish, covering — 12
- (3) Combustible floor finish, covering — 13
- (4) Combustible ceiling and wall finish, covering — 14
- (5) Combustible ceiling and floor finish, covering — 15
- (6) Combustible wall and floor finish, covering — 16
- (7) Combustible ceiling, wall, floor finish — 17
- (8) Interior finishes allowing fire spread not able to be classified further — 19

**17.6.2.2.2 Structural Factor Allowing Vertical Travel (2).** For a structural factor allowing vertical travel, the following coding structure shall be used:

- (1) Nonenclosed stairwell, elevator shaft — 21
- (2) Inadequate firestopping — 22
- (3) Air-handling ducts — 23
- (4) Utility shaft, pipe shaft — 24

- (5) Failure of a rated assembly — 25
- (6) Exterior spread — 26
- (7) Floor, ceiling — 27
- (8) Structural factors allowing vertical travel not able to be classified further — 29

**17.6.2.2.3 Structural Factor Allowing Horizontal Travel (3).** For a structural factor allowing horizontal travel, the following coding structure shall be used:

- (1) Air-handling duct — 31
- (2) Attic space, ceiling, concealed space — 32
- (3) Door burned through — 33
- (4) Door open — 34
- (5) Corridor, excessive open area — 35
- (6) Utility opening, pipe opening — 36
- (7) Window — 37
- (8) Wall — 38
- (9) Structural factors allowing horizontal travel not able to be classified further — 39

**17.6.2.2.4 Physical Transfer of Material Ignited (4).** For the physical transfer of material ignited, the following coding structure shall be used:

- (1) Human being, animal — 41
- (2) Conveyor, special materials handling equipment — 42
- (3) Gravity (burning material fell onto unburned material) — 43
- (4) Wind — 44
- (5) Pipeline, material transfer system — 45
- (6) Physical transfer of materials ignited not able to be classified further — 49

**17.6.2.2.5 Building Contents (5).** For building contents, the following coding structure shall be used:

- (1) Decoration — 51
- (2) Furniture, fixture — 52
- (3) Flammable liquid not properly handled or contained — 53
- (4) Flammable gas not properly handled or contained — 54
- (5) Flammable dust, solid chemical — 55
- (6) Explosive, fireworks — 56
- (7) Stored material — 57
- (8) Building contents not able to be classified further — 59

**17.6.2.2.6 Environmental Factors (6).** For environmental factors, the following coding structure shall be used:

- (1) Slope — 61
- (2) Wind providing oxygen flow — 62
- (3) Flash fuels — 63
- (4) Ladder fuels — 64
- (5) No separation between vegetation and structure — 65

**17.6.2.2.7 Other Flame Travel Factor (9).** For other flame travel factors, the following coding structure shall be used:

- (1) No important factor contributing to flame travel — 98
- (2) Factors contributing to flame travel not able to be classified further — 00
- (3) Factors contributing to flame travel undetermined or not reported — UU

**17.6.3 Extent of Flame Spread.** The extent of the flame damage is the area actually burned or charred and does not include the area receiving only heat, smoke, or water damage. In combination with other information, this element describes the magnitude or seriousness of the fire. Smoke and flame

extent shall be coded separately, since the extent of each component could vary significantly.

**17.6.3.1** The data element for extent of flame spread is used to describe how far the damage extended in the structure.

**17.6.3.2** Where the extent of flame spread is coded, the coding structure in Table 17.6.3.2 shall be used.

**17.7 Smoke Development.** The identification of the materials that contributed to the smoke development and spread, as well as the avenue the smoke traveled, is useful in understanding why persons are injured by smoke or have trouble escaping from areas of the structure not directly affected by flames. Smoke spread not only contributes to increased monetary loss, but also cuts off avenues of escape or creates toxic or lethal destructive atmospheres in areas remote from the fire.

#### 17.7.1 Materials Involved.

**17.7.1.1** Often, there is not just one significant material involved in smoke development or one avenue of smoke travel. Consideration should be given to providing multiple fields for recording materials involved in smoke development and avenues of spread. If only one material or path is to be reported, it should be that which had the most impact on life safety. Normally, smoke development for reporting purposes is not significant unless there is significant smoke beyond the room of origin. However, in large rooms such as are found in warehouses, significant smoke development and spread can occur in the room of origin.

**17.7.1.2** When materials involved in smoke development and spread are classified, both the form of the material (its use) and the type of material (its composition) should be identified. The classification numbers in Section 8.6 for material identification should be used to classify materials involved in smoke spread.

#### 17.7.2 Avenue of Smoke Travel.

**17.7.2.1** The avenue of smoke travel identifies how the smoke traveled beyond the room or area of origin.

**17.7.2.2** Where the avenue of smoke travel is to be coded, the coding structure in Table 17.7.2.2 should be used.

**17.7.3 Extent of Smoke Spread Within the Structure.** The extent does not include areas that received only heat or water damage. In combination with other information, this element describes the magnitude or seriousness of the fire.

**17.7.3.1** The data element for extent of smoke spread is used to describe how far the damage extended in the structure.

**17.7.3.2** Where the extent of smoke spread is coded, the coding structure in Table 17.6.3.2 shall be used.

**Table 17.6.3.2 Extent of Flame or Smoke Spread Coding Structure**

1	Confined to object of origin.
2	Confined to room of origin.
3	Confined to floor of origin.
4	Confined to building of origin.
5	Beyond building of origin.
6	Beyond area of origin.

**Table 17.7.2.2 Avenue of Smoke Travel Coding Structure**

1	Air-handling duct, plenums.
2	Corridor.
3	Elevator shaft.
4	Stairwell.
5	Open construction. Included are floor space, ceiling space, and atriums. Excluded are spaces used as plenums (1).
6	Utility opening.
7	Doorway, passageway. Included are normal openings between rooms. Excluded is smoke travel in corridors (2) and stairwells (4).
0	Avenue of smoke travel not able to be classified further.
U	Avenue of smoke travel undetermined or not reported.

**17.8 Weather Information.** Weather condition data is important to assess the effects of weather on response time, control of incidents, functioning of equipment, and type of equipment required.

**17.8.1 Type of Weather.** Where the type of weather is to be coded, the coding structure in Table 17.8.1 shall be used.

**Table 17.8.1 Type of Weather Coding Structure**

1	Clear.
2	Cloudy.
3	Rain.
4	Snow.
5	Hail, sleet, ice storm.
6	Electrical storm.
7	Fog.
8	High winds, hurricane, tornado.
0	Type of weather not able to be classified further.
U	Type of weather undetermined or not reported.

**17.8.2 Air Temperature.** Air temperature is the amount of heat in the air. Air temperature is useful because extreme temperatures have a negative effect on the environment, personnel, and equipment. Temperature shall be recorded by its actual value and expressed in degrees using either the Fahrenheit (F) scale or the Celsius (C) scale. The scale must be included as part of the reading. In addition, when expressing a value (degrees) below zero, a negative sign (-) must be placed before the number. For example, five degrees below zero Celsius shall be recorded as -5°C, and 75 degrees Fahrenheit as 75°F.

**17.8.3 Relative Humidity.** Relative humidity is the ratio of the moisture that the air in a given volume of space contains to the total moisture that a volume would contain if it were saturated. Relative humidity shall be recorded as a numeric value between 1 and 100 percent.

**17.8.4 Wind Direction.** Where the wind direction is to be coded, the coding structure in Table 17.8.4 shall be used.

**Table 17.8.4 Wind Direction Coding Structure**

1	North.
2	Northeast.
3	East.
4	Southeast.
5	South.
6	Southwest.
7	West.
8	Northwest.
9	Shifting winds.
N	No wind blowing, conditions calm.
U	Wind direction undetermined or not reported.

**17.8.5 Wind Speed.** Wind speed can be recorded as a direct numeric entry showing the actual speed in miles per hour, or, for most purposes, recording the wind speed class is sufficient. Where the wind speed is to be coded, the coding structure in Table 17.8.5 shall be used.

**Table 17.8.5 Wind Speed Coding Structure**

1	Less than 1 mph (2 km/hr). Smoke rises vertically.
2	1 mph to 4 mph (2 km/hr to 6 km/hr). Direction of wind is shown by smoke drift but not by weather vanes.
3	5 mph to 8 mph (7 km/hr to 13 km/hr). Wind is felt on face; leaves rustle; ordinary vanes are moved by wind.
4	9 mph to 14 mph (14 km/hr to 22 km/hr). Leaves and small twigs are in constant motion; wind extends light flag.
5	15 mph to 20 mph (23 km/hr to 32 km/hr). Wind raises dust and loose papers; small branches are moved.
6	21 mph to 25 mph (33 km/hr to 40 km/hr). Small trees and leaves begin to sway; crested wavelets form on inland waters.
7	26 mph to 31 mph (41 km/hr to 50 km/hr). Large branches are in motion; whistling is heard on wires; umbrellas are used with difficulty.
8	32 mph to 46 mph (51 km/hr to 74 km/hr). Whole trees are in motion; small twigs break off trees; walking against the wind is impeded.
9	Over 46 mph (over 74 km/hr). Slight to heavy structural damage occurs; branches break; trees are uprooted above 60 mph (96 km/hr and up).
U	Wind speed undetermined or not reported.

## 17.9 Scene Information.

**17.9.1 Property Ownership.** This data element identifies the owner of the property involved in the arson.

**17.9.2** Where data on property ownership is identified, the coding structure in Table 17.9.2 shall be used.

**17.9.3 Extent of Fire Involvement on Arrival.** This data element indicates the fire department's observation of the extent of the fire's involvement when at the incident scene.

**Table 17.9.2 Property Ownership**

Code	Description
1	Private.
2	City, town, village, local.
3	County or parish.
4	State or province.
5	Federal.
6	Foreign.
7	Military.
0	Other.

**17.9.4** Where data on the extent of fire involvement is to be coded, the coding structure in Table 17.9.4 shall be used.

**Table 17.9.4 Extent of Fire Involvement**

Code	Description
1	No flame or smoke showing.
2	Smoke only showing.
3	Flame and smoke showing.
4	Fire through roof.
5	Fully involved.

**17.9.5 Availability of Material Ignited.** Understanding firesetting methods and trends can assist in the development of prevention and intervention strategies.

**17.9.6** Where data on availability of material ignited is to be coded, the coding structure in Table 17.9.6 shall be used.

**Table 17.9.6 Availability of Material Ignited Coding Structure**

Code	Description
1	Transported to scene.
2	Available at scene.
0	Availability of material ignited not able to be classified further.
U	Availability of material ignited undetermined or not reported.

**17.9.7 Entry Method.** Information on how the subject gained entry to the property could provide data to support public education efforts to improve building security and to link similar cases.

**17.9.8** Where data on entry method is to be coded, the coding structure in Table 17.9.8 shall be used.

**17.9.9 Property Security.** The security of the property when the fire department arrived at the scene is useful to fire investigators in understanding circumstances of the fire. This data element identifies important observations made at the incident scene relating to the security of the property or circumvention of security systems if present.

**17.9.10** Where data on property security is to be coded, the coding structure in Table 17.9.10 shall be used.

**Table 17.9.8 Entry Method Coding Structure**

Code	Description
11	Door, open or unlocked.
12	Door, forced open or broken.
13	Window, open or unlocked.
14	Window, forced open or broken.
15	Gate, open or unlocked.
16	Gate, forced open or broken
17	Locks, pried.
18	Locks, cut.
19	Floor entry.
21	Vent.
22	Attic/roof.
23	Key.
24	Help from inside.
25	Wall.
26	Crawl space.
27	Hide in/on premises.
00	Entry method not able to be classified further.
UU	Entry method undetermined or not reported.

**Table 17.9.10 Property Security Coding Structure**

Code	Description
1	Windows ajar.
2	Doors ajar.
3	Doors locked.
4	Doors unlocked.
5	Fire department forced entry.
6	Entry forced prior to fire department arrival.
7	Security system was activated.
8	Security system was present but not activated.
0	Property security not able to be classified further.
U	Property security undetermined or not reported.

**17.9.11 Other Investigative Factors.** Other investigative information pertinent to the case that could be useful to the investigator may include circumstances surrounding the investigation.

**17.9.12** Where data on other investigative factors is to be coded, the coding structure in Table 17.9.12 shall be used.

**Table 17.9.12 Other Investigative Factors Coding Structure**

Code	Description
1	Code violations.
2	Structure for sale.
3	Structure vacant.
4	Other crimes involved.
5	Illicit drug activity.
6	Change in insurance.
7	Financial problem.
8	Criminal/civil actions pending.
0	Other investigative factors not able to be classified further.
U	Other investigative factors undetermined or not reported.

**17.10 Juvenile Firesetter.** The data elements in this section can be used to record information on subjects under 18 years of age who may have been involved in deliberately starting fires. The data elements for juvenile firesetter are used to document juvenile fire-sets, whether determined to be intentional, unintentional, or under investigation. This data will permit the analysis of juvenile firesetting trends, including the success of intervention strategies. Other data elements that would be useful would include age (*see Section 12.2*), sex (*see Section 12.3*), and race and origin (*see Section 12.4*).

**17.10.1 Family Type.** The information on family type can assist researchers in determining those risk factors that may be a predictor of juvenile firesetting, delinquency, and adult arson.

**17.10.2** Where data on family type is to be coded, the coding structure in Table 17.10.2 shall be used.

**Table 17.10.2 Family Type Coding Structure**

Code	Description
1	Single-parent family.
2	Foster parent(s).
3	Two-parent family.
4	Extended family. Includes multigenerational.
N	No family unit.
0	Family type not able to be classified further.
U	Family type undetermined or not reported.

**17.10.3\* Risk Factors.** This data element shall describe the stimulus or risk factors that were present for the subject(s) to burn, or attempt to burn, any real or personal property.

**17.10.4** Where data on risk factors is to be coded, the coding structure in Table 17.10.4 shall be used.

**Table 17.10.4 Risk Factor Coding Structure**

Code	Description
1	Mild curiosity about fire.
2	Moderate curiosity about fire.
3	Extreme curiosity about fire.
4	Diagnosed (or suspected) ADD/ADHD.
5	History of trouble outside school.
6	History of stealing or shoplifting.
7	History of physically assaulting others.
8	History of fireplay or firesetting.
9	Transiency.
0	Motivation/risk factor not able to be classified further.
U	Motivation/risk factor undetermined or not reported.

**17.10.5 Disposition of Juvenile Firesetter.** This data element describes how the juvenile firesetter was handled after the incident. It permits analysis of how juvenile offenders are handled in relation to repeat offenders.

**17.10.6** Where data on disposition of juvenile firesetter is to be coded, the coding structure in Table 17.10.6 shall be used.

**Table 17.10.6 Disposition of Juvenile Firesetter Coding Structure**

Code	Description
1	Handled within department (e.g., released with warning).
2	Released to parent or guardian.
3	Referred to other authority (e.g., social services, prosecuting attorney, juvenile court, probation).
4	Referred to treatment/counseling program (e.g., diversion program, inpatient or outpatient treatment program).
5	Arrested, charged as adult.
6	Referred to firesetter intervention program.
0	Disposition of juvenile firesetter not able to be classified further.
U	Disposition of juvenile firesetter undetermined or not reported.

## Annex A Explanatory Material

*Annex A is not a part of the requirements of this NFPA document but is included for informational purposes only. This annex contains explanatory material, numbered to correspond with the applicable text paragraphs.*

**A.1.1.3** Per 4.7.1 of NFPA 1033, a fire report must accurately reflect the investigative findings, be concise, express the investigator's opinion, contain the facts and data that the investigator used to render the opinion, contain the reasoning by which the investigator reached the opinion, and meet the needs or requirements of the intended audience. Similarly, Rule 26(a) (2)(B) of the Federal Rules of Civil Procedure requires that a written report must identify what the witness requested, list the documents reviewed, state the methodology and activities undertaken, itemize the opinions and their bases, and provide background on the expert's qualifications.

Fire investigations must be carefully documented in accordance with present-day guidelines and professional standards (Icove and Henry, 2010). This annex provides suggested guidance for preparing a written narrative report per NFPA, ASTM, US Department of Justice, and other related standards of care.

In preparing the written narrative report, a self-peer review of the complete investigation might be beneficial (Icove and Haynes, 2007). Table A.1.1.3 contains a peer review summary of the essential elements that must be addressed, as well as cited references. Figure A.1.1.3 outlines the scientific method.

### Cited references:

Icove, D. J. and Haynes, G. A. "Guidelines for Conducting Peer Reviews of Complex Fire Investigations." *Fire and Materials Conference*, San Francisco, CA, January 29–31, 2007.

Icove, D. J. and Henry, B. P. "Expert Report Writing: Best Practices for Producing Quality Reports." *International Symposium on Fire Investigation Science and Technology*, College Park, MD, September 27–29, 2010.

### Cited fire reporting guidelines and standards:

ASTM E620, *Standard Practice for Reporting Opinions of Technical Experts*, 2011 edition.

ASTM E678, *Standard Practice for Evaluation of Scientific or Technical Data*, 2013 edition.

ASTM E860, *Standard Practice for Examining and Preparing Items that Are or May Become Involved in Criminal or Civil Litigation*, 2013 edition.

ASTM E1020, *Standard Practice for Reporting Incidents That May Involve Criminal or Civil Litigation*, 2013 edition.

ASTM E1188, *Standard Practice for Collection and Preservation of Information and Physical Items by a Technical Investigator*, 2011 edition.

ASTM E1459, *Standard Guide for Physical Evidence Labeling and Related Documentation*, 2013 edition.

ASTM E1492, *Standard Practice for Receiving, Documenting, Storing, and Retrieving Evidence in a Forensic Science Laboratory*, 2011 edition.

NFPA 921, *Guide for Fire and Explosion Investigations*, 2017 edition.

NFPA 1033, *Standard for Professional Qualifications for Fire Investigator*, 2014 edition.

US Department of Justice, Federal Bureau of Investigation (FBI). "Definitions and Guidelines for the Use of Imaging Technologies in the Criminal Justice System." *Forensic Science Communications* 1 (October 1999): No. 3.

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US Department of Justice, National Institute of Justice, Technical Working Group on Fire/Arson Scene Investigation (TWGFASI). *Fire and Arson Scene Evidence: A Guide for Public Safety Personnel*. Washington, DC: 2000.

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US Department of Justice, National Institute of Justice. *Eyewitness Evidence: A Trainer's Manual for Law Enforcement*. Washington, DC: September 2003 (designed to accompany *Eyewitness Evidence: A Guide for Law Enforcement*).

US Department of Justice, National Institute of Justice. *Forensic Examination of Digital Evidence: A Guide for Law Enforcement*. Washington, DC: April 2004.

**A.3.3.5 Backfire.** Using backfires on a small scale and with closer control, in order to consume patches of unburned fuel and aid control line construction, is known as "burning out."

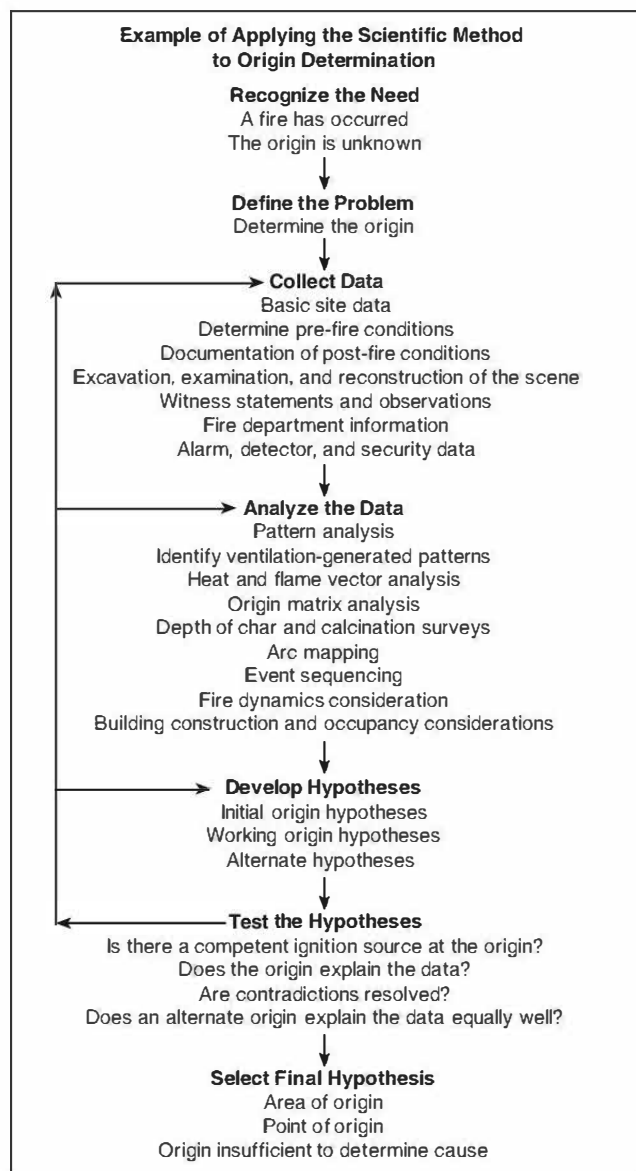
**A.3.3.15 Confine a Fire.** Wildland suppression action may be minimal and limited to surveillance under appropriate conditions.

**Table A.1.1.3 Essential Elements of Information in a Narrative Fire Report**

Instructions: Check the appropriate boxes as applicable to indicate the presence or absence of the following information.

YES	NO	
<input type="checkbox"/>	<input type="checkbox"/>	Scene secured (NFPA 1033, 4.2.1)
<input type="checkbox"/>	<input type="checkbox"/>	Scene safety assessment conducted (OSHA, 29 CFR Section 1910)
<input type="checkbox"/>	<input type="checkbox"/>	Exterior survey conducted (NFPA 1033, 4.2.2)
<input type="checkbox"/>	<input type="checkbox"/>	Interior survey conducted (NFPA 1033, 4.2.3)
<input type="checkbox"/>	<input type="checkbox"/>	Burn patterns interpreted (NFPA 1033, 4.2.4)
<input type="checkbox"/>	<input type="checkbox"/>	Burn patterns correlated (NFPA 1033, 4.2.5)
<input type="checkbox"/>	<input type="checkbox"/>	Fire debris examined & removed (NFPA 1033, 4.2.6, ASTM E1188, ASTM E1459)
<input type="checkbox"/>	<input type="checkbox"/>	Area(s) of origin reconstructed (NFPA 1033, 4.2.7)
<input type="checkbox"/>	<input type="checkbox"/>	Building performance inspected (NFPA 1033, 4.2.8)
<input type="checkbox"/>	<input type="checkbox"/>	Effects of explosions discriminated from other damage (NFPA 1033, 4.2.9)
<input type="checkbox"/>	<input type="checkbox"/>	Scene diagrammed (NFPA 1033, 4.3.1)
<input type="checkbox"/>	<input type="checkbox"/>	Scene photographed (NFPA 1033, 4.3.2; ASTM E1188)
<input type="checkbox"/>	<input type="checkbox"/>	Investigative notes taken and preserved (NFPA 1033, 4.3.3)
<input type="checkbox"/>	<input type="checkbox"/>	Eyewitness evidence identified, preserved, collected, and packaged (NIJ Eyewitness Evidence Guide)
<input type="checkbox"/>	<input type="checkbox"/>	Evidence (physical, electronic, and digital) identified, preserved, collected, and packaged (NFPA 1033, 4.4.1, 4.4.2; ASTM E620; ASTM E860; ASTM E1188; ASTM E1459; NIJ Electronic Crime Scene Investigation Guide; FBI Guidelines for Imaging Technologies)
<input type="checkbox"/>	<input type="checkbox"/>	Evidence properly selected for analysis (NFPA 1033, 4.4.3; ASTM E620; ASTM E1492)
<input type="checkbox"/>	<input type="checkbox"/>	Chain of custody documented (NFPA 1033, 4.4.4)
<input type="checkbox"/>	<input type="checkbox"/>	Evidence properly disposed of (NFPA 1033, 4.4.5)
<input type="checkbox"/>	<input type="checkbox"/>	Interview plan developed (NFPA 1033, 4.5.1)
<input type="checkbox"/>	<input type="checkbox"/>	Interviews/interrogations properly conducted (NFPA 1033, 4.5.2)
<input type="checkbox"/>	<input type="checkbox"/>	Investigative information properly inventoried
<input type="checkbox"/>	<input type="checkbox"/>	Investigative information properly analyzed/correlated (NFPA 1033, 4.5.3; ASTM E620)
<input type="checkbox"/>	<input type="checkbox"/>	Investigative information properly obtained/documentated (NFPA 1033, 4.6.1)
<input type="checkbox"/>	<input type="checkbox"/>	Investigative information in file is interpreted/corroborated (NFPA 1033, 4.6.2)
<input type="checkbox"/>	<input type="checkbox"/>	Investigative information on victims/casualties documented (NFPA 906.5, NIJ Death Investigation Guide)
<input type="checkbox"/>	<input type="checkbox"/>	Investigative information needed for fire modeling documented (NFPA 921, ASTM E1355, ASTM E1472, ASTM E1591, ASTM E1895)
<input type="checkbox"/>	<input type="checkbox"/>	Investigative information needed to determine occurrence of room flashover documented (NFPA 555)
<input type="checkbox"/>	<input type="checkbox"/>	Expert resources matched to needs and causation (NFPA 1033, 4.6.3)
<input type="checkbox"/>	<input type="checkbox"/>	Motive/opportunity evidence established (NFPA 1033, 4.6.4)
<input type="checkbox"/>	<input type="checkbox"/>	Person(s)/product(s) identified for responsibility (NFPA 1033, 4.6.5)
<input type="checkbox"/>	<input type="checkbox"/>	Concise written report prepared (NFPA 1033, 4.7.1; ASTM E620; ASTM E678; ASTM E1020; ASTM E1188; ASTM E1492; ASTM E1459; ASTM E1546)
<input type="checkbox"/>	<input type="checkbox"/>	Investigative findings verbally presented (NFPA 1033, 4.7.2)
<input type="checkbox"/>	<input type="checkbox"/>	Testimony clearly presented at legal proceedings (NFPA 1033, 4.7.3)
<input type="checkbox"/>	<input type="checkbox"/>	Public informational presentations are accurate (NFPA 1033, 4.7.4)





**FIGURE A.1.1.3 Example of Scientific Method Application to Determine Origin of Fire. [921:Figure 18.2]**

**A.3.3.25 Exposure Fire.** A fire spreading between occupancies within a single building is not an exposure fire. A fire that spreads from one fire jurisdiction to another is also considered an exposure fire.

**A.3.3.28 Fire Area.** The fire area is characterized by identifying the border between damaged and undamaged areas, which are distinguishable by fire effects and patterns created by flame, heat, and smoke.

**A.3.3.33 Fire Damage.** Damage from smoke, water, backfires, construction of firebreaks, and fire control are all aspects of fire damage.

**A.3.3.40 Fire Under Control.** With a wildland fire, the fire is considered under control when any unburned areas adjacent to the fire side of the control lines are burned out, and all hot spots that are immediate threats to the control line are cooled

down, until the lines can reasonably be expected to hold under foreseeable conditions.

**A.3.3.57 Incident.** “Walk-ins” treated at the station should be recorded as an incident. An incident can have more than one response. A rekindle is a separate incident.

**A.3.3.59 Incident Report.** For understanding and legal purposes, the incident report should be in the preparer’s own words. For summarization purposes, the information on this report can be classified into broad categories. The incident report is always part of the incident record or file.

**A.3.3.60 Industrialized Unit.** An industrialized unit is an assembly of materials or products manufactured in such manner that its structural, plumbing, electrical, environmental control, or fire protection elements or components are concealed and are not readily accessible for inspection at the site of its intended use, without disassembly, damage, or destruction. Industrialized units include, but are not limited to, modular or panelized constructed units. Manufactured homes constructed to the federal Manufactured Home Construction Safety Standards are not considered industrialized units.

**A.3.3.66 Material First Ignited.** To be meaningful, both the type and form of material should be identified.

**A.3.3.74 Occupancy.** The specific property use as it pertains to a building is the occupancy.

**A.3.3.75 Occupied.** A hotel (general property use) could be occupied, but the restaurant (specific property use) not occupied; likewise, the restaurant could be occupied, but its store-room (area of origin) not occupied.

**A.3.3.78 Overheat.** Overheat is the stage before ignition. Removal of the heat source will stop the destruction.

**A.3.3.82 Rekindle.** Fire service response to a rekindle should be treated as a separate incident.

**A.3.3.85 Scorch.** When scorching is occurring, removal of the heat source will stop the destruction.

**A.3.3.90 Structure.** Structures include, but are not limited to, buildings, open platforms, bridges, roof assemblies over open storage or process areas, tents, air-supported structures, and grandstands.

**A.3.3.91 Structure Fire.** An automobile on fire in a garage or tunnel, food burning on the stove, or fire at a leaking flange in a refinery tower are all structure fires.

**A.3.3.95 Wildland Fire.** A prescribed fire is not a wildland fire.

**A.4.4.2.1** The contents of the record will depend on the complexity of the incident and on the amount of follow-up information needed to understand the incident.

**A.4.4.4** The report should reflect what was actually seen or done at the incident. The report can be written in the person’s own words, coded using the data element classifications in this document, or a combination of both. The classification of the data can be done by the person completing the report or by a central coding office.

**A.4.5.2** Other data for a pre-incident data file could be available from various municipal offices such as the assessor’s office, the building department, other inspection service offices, and



the licensing board. Census identification, if available, can be added.

A well-maintained property file can assist the fire service agency in planning and prioritizing fire prevention activities, and provide tactical information at the time of an incident. Data collected prior to an incident can also be useful during an investigation in understanding the condition of the property before the incident.

**A.4.5.3** Additional data might become available from department personnel, such as safety officers, fire investigators, or training officers or other sources such as hospital personnel and insurance adjusters. In both cases, an updated report should be filed. Information from these reports is also useful in keeping property information current.

**A.4.6** A complete incident report has many potential uses. It should, at minimum, meet the informational needs of all the sectors of the local fire service, including those required both from a legal standpoint and for strategic and tactical planning.

A specific use of the report could be providing information to company officers on their specific parts of the protected community. A more general use of the report could be spotting trends in fire and other emergency incidents and providing information for program evaluation and corrective action on a chief officer level. A small fire department might have too few incidents to provide meaningful statistical trends on a local basis. Data combined from surrounding jurisdictions could show trends or allow for regional planning. As the database grew, the company officer, fire service manager, and chief of the department could accumulate useful information to use in managing their local problem. Regional and national agencies could also extract useful information by combining and analyzing the data.

Another vital function of a reporting system could also be providing input to those designing and marketing new products and equipment (i.e., potential ignition sources) and those designing and providing interior finishes and furnishings (i.e., potential available fuels) in an effort to focus prevention efforts on real potential fire problems. Other standard-setting and enforcement agencies could use this information to evaluate the effectiveness of their work.

A reporting system is also essential in meeting accreditation organizations' reporting requirements. Each time a fire protection system works well and the fire loss and danger are confined to a small area, a documented success will increase the confidence in that particular system. Conversely, each time a fire protection fails, as indicated by an expensive loss, injuries, or death, the failure must be accurately documented so that confidence in that particular system is reduced. On a broader scale, industry personnel, educators, medical personnel, architects, research scientists, fire protection engineers, and fire service managers can work as a team to reduce fire problems and similar demands for emergency services.

**A.4.8.1** While the "number of personnel that responded" is obviously an integer, "acres burned" is often reported to the nearest tenth of an acre. To accommodate commonly encountered fractions (e.g.,  $\frac{1}{4}$  or 0.25 acre), two digits beyond the decimal point might be provided. The level of precision will vary by data element but should be made clear to those who record the data.

Special consideration should be given to cases in which numeric information is not available or is not reported. These types of situations must be clearly distinguished from those in which the reported numeric value is zero. A response to an incident with zero personnel is different than a response to an incident with an unreported number of personnel. If both responses are recorded as "zero" personnel, without further distinction, incorrect conclusions could be drawn from aggregated incident data (e.g., sums and averages).

Note that some data elements contain only digits but should not be considered numeric. In the case of ZIP codes, for example, the data element should be treated as text (*see* 4.8.2) because no useful arithmetic calculations can be performed with ZIP codes, and leading zeros that have meaning in ZIP codes have no significance in numeric information and are usually dropped.

**A.4.8.2** Examples of such elements that cannot be classified by or reduced to numbers include not only data such as names and addresses, but also text that supplements coded data with further details. For example, in the case of "equipment involved in ignition," the classifications that designate the type of equipment involved can be supplemented with text that specifies the make and model of the equipment. This information can be useful in equipment recalls at the federal level.

**A.5.4.1.1** For example, January 1, 2020, is formatted as 20200101.

**A.5.4.1.2** For example, midnight is formatted as 000000.

**A.5.4.2.9** There can be significant hot spots within the perimeter yet to be extinguished.

**A.5.5.1.1** The street address is generally the basis of identification for a property. It is important to identify a suite, room, apartment number, or specific building as part of the address.

**A.5.5.2** Further information on geographical coordinates used in the United States is as follows:

- (1) *Latitude and Longitude.* Latitude lines run east to west and are parallel to the equator. Values range from 0 degrees at the equator to 90 degrees at the North Pole and South Pole. The United States and Canada are in the northern hemisphere. Longitude lines run north to south, are parallel at the equator, and converge at the poles. Values range from 0 degrees at Greenwich, England (near London, at the Royal Naval Observatory), to 180 degrees at the International Date Line west of Hawaii. Most of the United States and all of Canada are in the western hemisphere. Minutes and seconds for both latitude and longitude range from 0 to 59.
- (2) *Zones.* There are 60 zones that span the world, one every 6 degrees of longitude. Zone 1 lies east of the International Date Line, which has a western boundary of 180 degrees longitude in the Pacific Ocean. Zones are numbered starting in the east around to Zone 60, which adjoins Zone 1 to the east.
- (3) *Universal Transverse Mercator (UTM) Coordinates.* The UTM grid uses a rectangular grid, measured in meters, overlaid on each zone. Coordinates are represented by points on a rectangular grid. Although many GPS units can display fractional meters, recording such fractions implies a false sense of precision. Most GPS units are accurate to within 5 meters or more, although some high-quality GPS units, when used correctly, can measure more precisely.

- (4) **Datums.** The datums currently used in the United States are NAD 27, NAD 83, and WGS 84. NAD 83 and WGS 84 are nearly identical in the United States.
- (5) **Easting.** The center of each zone measured east to west has a value of 500,000. This ensures that all east to west coordinates are positive numbers typically in the range of 150,000 to 850,000. Easting coordinates should have six digits for consistency.
- (6) **Northing.** The northing coordinate is measured from the equator to the pole in the northern hemisphere. Northing coordinates should have seven digits for consistency.
- (7) **US National Grid (USNG).** The USNG system is being used more often among US emergency response agencies to improve interoperability between agencies and with the military. The USNG system resembles the military system, which uses the WGS 84 datum, and identifies areas rather than points. USNG coordinates contain three components: a grid zone designation; a 100,000 meter-square identification; and the grid coordinates. A fully qualified USNG coordinate for the Washington Monument in Washington, DC, would read "18S UJ23480647."
- (8) **Public Land Survey System (PLSS).** PLSS was established in the United States by the Land Ordinance of 1785. The surveys cover 30 states; the original 13 colonies, as well as Kentucky, Tennessee, Maine, Vermont, West Virginia, Texas, and Hawaii, use other survey systems.

**A.6.1.2** It is often desirable to link the specific use of a property or a portion thereof to the overall use of the property. This is accomplished by reporting the general property use and specific property use as complementary data elements that together show the property use. A restaurant in a hotel is different from a freestanding restaurant surrounded by a parking area. When a piece of mobile property is involved, the data element "mobile property type" adds further definition to the understanding of the use of the property by identifying the type of vehicle, vessel, or equipment. The relationship between general property use and specific property use for a few typical situations where no mobile property is involved is shown as follows:

- (1) A clothing store in an enclosed shopping mall would have a general property use of shopping mall (coded as 53) and a specific property use of clothing store (coded as 521).
- (2) A chapel at a university would have a general property use of university (coded as 22) and a specific property use of chapel (coded as 131).
- (3) A railroad bridge would have a general property use of railroad (coded as 95) and a specific property use of bridge (coded as 921).
- (4) A children's playhouse behind a dwelling would have a general property use of residential (coded as 41) and a specific property use of playhouse (coded as 926).
- (5) A barn on a farm would have a general property use of farm (coded as 65) and a specific property use of barn (coded as 815).
- (6) A detached residential garage would have a general property use of residential (coded as 41) and a specific property use of garage (coded as 881).

The following three examples illustrate the relationship between general property use, specific property use, and mobile property use when including a mobile property type:

- (1) A tractor in a barn on a farm would have a general property use of farm (coded as 65), a specific property use of

barn (coded as 815), and a mobile property type of tractor (coded as 65).

- (2) A railroad locomotive on a railroad bridge would have a general property use of railroad (coded as 95), a specific property use of bridge (coded as 921), and a mobile property type of locomotive (coded as 35).
- (3) An automobile in a detached residential garage would have a general property use of residential (coded as 41), a specific property use of garage (coded as 881), and a mobile property type of automobile (coded as 11).

**A.6.3.2** For example, a hotel at an airport leased to and managed by a hotel chain would be reported as hotel use.

**A.6.3.3** Table A.6.3.3 details the inclusions and exclusions for the general property use coding given in 6.3.3.

**Table A.6.3.3 General Property Use Coding Structure**

Code	Description
1	Assembly Property.
	Places for the congregation or gathering of people for amusement, recreation, social, religious, patriotic, civic, travel, and similar purposes are known as assembly properties. Such properties are characterized by the presence or potential presence of crowds, with attendant panic hazard in case of fire or other emergency. They are generally open to the public or can, on occasion, be open to the public. The occupants are present voluntarily and are not ordinarily subject to discipline or control. They are generally able-bodied persons whose presence is transient in character and who do not intend to sleep on the premises.
11	Fixed Use Amusement and Recreation Places.
111	Bowling establishment.
112	Billiard center.
	Included are pool centers and pool halls.
113	Amusement center.
	Included are amusement halls, such as shooting galleries, penny arcades, and bingo halls. Excluded are bowling establishments (111), billiard centers (112), and halls with variable use (division 12).
114	Ice rink.
	Included are establishments used solely for ice skating, ice hockey, and curling. Excluded are ice rinks in arenas and other places that can be converted to other uses (12).
115	Roller rink.
116	Swimming facility.
	Included are all swimming pools, related cabanas, bathhouses, and equipment locations.
110	Fixed use amusement and recreation places not able to be classified further.
12	Variable Use Amusement and Recreation Places.
121	Ballroom, gymnasium, dance hall.
122	Exhibition hall, exposition hall.
123	Arena, stadium.
	Fixed seating in large areas. Included are ball parks, racetracks, grandstands, and sports gardens.

(continues)

Table A.6.3.3 *Continued*

Code	Description
124	Playground or outdoor area with fixed recreational equipment.
120	Variable use amusement and recreation places not able to be classified further.
13	Places of Worship and Funeral Parlors.
131	Place of worship. Included are cathedrals, chapels, churches, missions, synagogues, and temples.
134	Funeral parlor, chapel. Included are crematoriums, mortuaries, morgues, and mausoleums.
130	Places of worship and funeral parlors not able to be classified further.
14	Clubs.
141	City club. Included are city club facilities without sleeping accommodations, such as athletic, lodge, social, steam bathing, health, swimming, YMCA, and boys' clubs. City club facilities that provide sleeping accommodations are included under major division 4. Excluded are nightclubs (162).
142	Country club. Included are country club facilities, such as golf, tennis, rifle, hunting, fishing, beach, and riding clubs.
143	Yacht club. Included are boating and yacht club facilities. Excluded are marinas and boat mooring facilities (885), boat repair facilities (782), and marine refueling facilities (577).
144	Casinos, gaming, or gambling places.
140	Clubs not able to be classified further.
15	Libraries, Museums, and Courtrooms.
151	Library.
152	Museum, art gallery. Included are aquariums and planetariums.
153	Historic building.
154	Memorial structure, monument.
155	Courtroom.
156	Legislative hall.
150	Libraries, museums, and courtrooms not able to be classified further.
16	Eating and Drinking Places. Included are retail establishments selling prepared foods and drinks.
161	Restaurant. Those eating places specializing in food for consumption primarily on the premises. Included are cafeterias and diners, with table or automatic service.
162	Nightclub. Those places specializing in food and drink. They can offer dancing or entertainment. Included are key clubs, supper clubs, and dinner theaters.
163	Tavern. Those places specializing in the sale of alcoholic beverages, consumed primarily on the premises, with food as a minor supplement only.
164	Lunchroom, drive-in.
160	Eating and drinking places not able to be classified further.
17	Passenger Terminals.

(continues)

Table A.6.3.3 *Continued*

Code	Description
	Included are incidental freight-handling facilities.
171	Airport passenger terminal.
172	Heliport, helistop.
173	Bus passenger terminal. Included are terminals for airline limousines and downtown airline terminal buildings.
174	Street-level rail terminal.
175	Underground rail terminal.
176	Elevated rail terminal.
177	Marine passenger terminal. Included are ferry terminals.
170	Passenger terminals not able to be classified further.
18	Theaters and Studios.
181	Legitimate theater. Included are combined live and movie theaters.
182	Auditorium, concert hall.
183	Motion picture theater. Excluded are drive-in theaters (184).
184	Drive-in motion picture theater.
185	Radio, TV studio.
186	Motion picture studio. Included are motion picture-making studios and editing areas. Excluded are film processing facilities (797).
180	Theaters and studios not able to be classified further.
10	Other Assembly Property.
100	Assembly property not able to be classified further.
2	Educational or Day Care Property. Educational properties are those used for the gathering of groups of persons for purposes of instruction, such as schools, colleges, universities, and academies. Educational properties are distinguished from public assembly properties in that the same occupants are present regularly and are subject to discipline and control. Included are part-day nursery schools, kindergartens, and other schools whose primary purpose is education. The occupants might or might not be able-bodied and capable of self-determination. Other properties associated with educational institutions are classified in accordance with their actual use.
21	Nonresidential Schools. All public, private, or parochial schools where students attend during the day only.
211	Nursery school. Included are schools for pre-kindergarten-age children, operating 4 hours a day or less. Excluded are schools operating for more than 4 hours per day, which are classified as child day care centers (division 25).
213	Elementary school.
214	Junior high school. Included are intermediate and middle schools.
215	High school.
210	Schools, non-adult, other.
22	Residential Schools.

(continues)

Table A.6.3.3 *Continued*

Code	Description
	All public, private, or parochial boarding schools, including such day-student facilities as might be present.
221	Residential school classroom building. Included are buildings containing classrooms and facilities such as laboratories, libraries, and offices as are present. If one building houses the entire school, the fire should be classified by its area of origin, that is, dormitory, office, and so forth. Other buildings on a school property are classified as to their appropriate specific property use.
220	Residential schools not able to be classified further.
23	Trade and Business Schools Other Than High School or College.
231	Vocational, trade school.
232	Business school.
233	Specialty school.
234	Rehabilitation center where attendance is by choice. Excluded are vocational rehabilitation centers where attendance is by direction (366).
230	Trade and business schools other than high school or college not able to be classified further.
24	Colleges and Universities.
240	Colleges and universities not able to be classified further.
25	Day Care Facility. A facility for the care, maintenance, and supervision of clients by other than their relative(s) or legal guardian(s) for less than 24 hours per day.
254	Day care in commercial property or as a dedicated facility.
255	Day care associated with residential property, licensed.
256	Day care associated with residential property, unlicensed.
250	Day care facility not able to be classified further.
20	Other Educational or Day Care Property.
200	Educational property not able to be classified further.
3	Health Care or Detention and Correctional Property. Note that both health care and detention and correctional properties are included under major division 3 because of the lack of additional single-digit numbers. The fire problems associated with these two different types of property use should be analyzed separately. Health care properties are those used for purposes such as medical or other treatment or care of persons suffering from physical or mental illness, disease, or infirmity. Such buildings ordinarily provide sleeping facilities for the occupants.
31	Nursing Home.
311	Facilities, licensed by the state, providing 24-hour nursing care for four or more persons. Included are licensed nursing homes, long-term care facilities, intermediate care facilities (ICF), skilled nursing facilities (SNF), and convalescent homes.

(continues)

Table A.6.3.3 *Continued*

Code	Description
310	Nursing home not able to be classified further (for facilities without 24-hour nursing staff, see division 45).
32	Limited Care Facility. Limited care facilities are used for the housing, on a 24-hour basis, of four or more persons who are incapable of self-preservation because of age or physical limitations due to accident, illness, or mental limitations.
321	Mental retardation (MR)/development disability facility.
322	Alcohol or substance abuse center where individuals are incapable of self-preservation.
320	Limited care facility not able to be classified further.
33	Hospitals.
331	Medical, psychiatric, pediatric, or hospital-type infirmary, including specialty hospitals, accredited or licensed by a state.
332	Hospices. Included are facilities where the care and treatment of the terminally ill is provided on a 24-hour basis and that are accredited or licensed by a state for such use.
330	Hospital and hospital-type facility not able to be classified further.
34	Ambulatory Care Facility. Facilities used for health care that provide less than 24-hour service for four or more patients without sleeping facilities, generally on an outpatient basis. Treatment provided to patients could temporarily render them incapable of self-preservation due to application of general anesthesia or require them to receive assistance from others due to specified treatment.
341	Clinic, including outpatient clinics and freestanding emergency medical facilities where four or more patients could be rendered temporarily incapable of self-preservation.
342	Office of an oral surgeon, dentist, or doctor [for facilities with fewer than four patients incapable of self-preservation, see medical, research, scientific office (593)].
343	Hemodialysis units.
340	Ambulatory care facility not able to be classified further.
35	Other Health Care Facility.
350	Health care facility not able to be classified further.
36	Care of the Physically Restrained.
361	Prison, cell block for men.
362	Prison, cell block for women.
363	Juvenile detention home.
364	Men's detention camp.
	Minimum security type.
365	Police station.
366	Vocational rehabilitation center. Attendance by direction. Excluded are rehabilitation centers where attendance is by choice (234).
360	Care of the physically restrained not able to be classified further.
39	Other Detention and Correctional Facility.

(continues)

Table A.6.3.3 *Continued*

Code	Description
390	Detention and correctional facility not able to be classified further.
4	<p><b>Residential Property.</b></p> <p>A residential property is one in which sleeping accommodations are provided for normal living purposes, and includes all buildings designed to provide sleeping accommodations except those classified under Health Care or Detention and Correctional Property (major division 3).</p> <p>Subdivisions of residential property used in this section are separated according to potential life hazard. Popular names and legal definitions may be different from those given here. The categories here, however, are significant from a fire and life protection standpoint. The property should be classified by its actual use according to the standard definitions given here, not by what the property owner cares to call his building. Thus, a residential property called a "hotel" on the sign over the door may not be a hotel by these definitions. From a fire standpoint it may be an apartment (division 42) or a rooming house (division 43), depending upon its use.</p> <p>Many times it is useful to know how many living units are in the building, as it provides a measure of the potential human exposure, whether they are all involved in a fire or not. It is recommended that the number of living units be reported separately.</p> <p><b>One- and Two-Family Dwelling.</b></p> <p>One- and two-family dwellings typically have separate living units and a kitchen in each unit.</p> <p>Included are private dwellings and duplexes each occupied by members of a single family group, with rooms rented to no more than three outsiders per unit. If a separate business or other occupancy is contained in the building, the residential unit(s) is classified in division 42.</p> <p>Row houses, town houses, garden apartments, and other similar units, regardless of local terminology, are classified here when one or two units are separated from the adjoining units by fire division assemblies, and the one or two units are under their own roof.</p> <p>A manufactured home and a mobile home not in transit should be classified in this division. A travel trailer not in transit and used as a dwelling should be classified here, and also should be classified as a travel trailer (subdivision 15) in 6.7.4.2.</p> <p>A manufactured home, a mobile home, or a travel trailer in transit should be classified using the appropriate classification in major division 9, and its type should be classified in 6.7.4.2. Fires in these should be classified as vehicle fires when they are in transit.</p> <p>Attached parking garages are included here unless separated from the dwelling by a fire division assembly. Detached parking garages are classified in subdivision 881.</p>

(continues)

Table A.6.3.3 *Continued*

Code	Description
419	One- or two-family dwelling.
42	<p><b>Multifamily Dwelling.</b></p> <p>Multifamily dwellings include apartment buildings, condominium apartments, town houses, row houses, tenements, or flats when three or more units are located within common fire division walls, and the units are under a common roof or have a common basement. Multifamily dwellings typically provide for families to live independently of each other, with kitchen facilities in each unit.</p> <p>An apartment in a building with a separate store, office, or other business is identified in this division and also as a residential property with business use (48) in General Property Use (see 6.5.2).</p>
429	<p><b>Multifamily dwellings.</b></p> <p><b>Rooming, Boarding, or Lodging House.</b></p> <p>Rooming, boarding, or lodging houses include facilities with living quarters in which separate sleeping rooms are rented, with sleeping accommodations for a total of not more than 16 persons, on either a transient or permanent basis, with or without meals, but without separate cooking facilities for individual occupants.</p> <p>Halfway houses or group care homes can be classified here if all persons are certified by mental or health authorities as capable of self-help under emergency conditions.</p> <p>Where rooms are rented for one to three persons, they should be classified in division 41. Where rooms are rented for more than 16 persons, they should be classified in division 44 or division 46.</p>
439	<p><b>Rooming, boarding, or lodging house.</b></p> <p>Included are residential hotels and shelters housing up to 16 persons.</p>
44	<p><b>Hotels, Motels, Inns, Lodges.</b></p> <p>Included are living quarters in which there are sleeping accommodations for hire for more than 6 persons, primarily used by transients, lodged with or without meals, but without separate cooking facilities in each unit. These facilities may be designated as a "hotel," "motel," "club," "apartment hotel," "YMCA," "lodge," or any other name, and include dormitories for transient occupants.</p> <p>Excluded are facilities for 16 or fewer persons (division 43).</p>
449	Hotel, motel, inn, or lodge.
45	Residential Board and Care.

(continues)

Table A.6.3.3 *Continued*

Code	Description
	Residential board and care involves the personal care of residents who do not require chronic or convalescent medical or nursing care. Personal care involves responsibility for the safety of the resident while inside the building. Personal care might include daily awareness by the management of the resident's functioning and whereabouts, making and reminding a resident of appointments, the ability and readiness for intervention in the event of a resident's experiencing a crisis, supervision in the areas of nutrition and medication, and actual provision of transient medical care. Included are long-term care and halfway houses. Excluded are nursing facilities (311) and facilities for three or fewer persons (division 41 or 42).
46	459 Residential board and care. Dormitories. Included are living quarters provided for more than 16 persons for an extended period, for persons not members of the same family group, in one room or a series of closely associated rooms, under joint occupancy and single management, with or without meals. Dormitories with transient occupants are classified in division 44, and facilities for 16 or fewer persons are classified in division 43.
462	Sorority house, fraternity house.
464	Barracks, dormitory. Included are nurses' quarters, military barracks, monastery/convent dormitories, bunk houses, and workers' barracks.
460	Dormitory-type residence not able to be classified further.
40	Other Residential Property.
400	Residential property not able to be classified further.
5	Mercantile, Business Property. Mercantile properties include all markets and other areas, buildings, or structures for the display, sale, repair, or service of merchandise, new or used, purchased or rented. Mercantile or store properties generally have a capacity for a large number of people and usually have a display and sales area that is large in relation to the storage area. Business properties are those principally used for the transaction of business and the keeping of private or public records.
51	Food, Beverage Sales. Sale of food and beverage for consumption on the premises is classified in division 16, Eating and Drinking Places.
511	Supermarket. Supermarkets that sell a broad line of food items as well as some nonfood items and cover over 10,000 ft <sup>2</sup> (930 m <sup>2</sup> ) in total area.
512	Market, grocery store. Markets and grocery stores that sell a broad line of food items as well as some nonfood items and cover less than 10,000 ft <sup>2</sup> (930 m <sup>2</sup> ) in total area.

(continues)

Table A.6.3.3 *Continued*

Code	Description
513	Specialty food store. Specialty food stores that specialize in a few basic food items and may have supplementary items for customer convenience. Included are meat, fish, candy, and gourmet shops, bakeries, and roadside farm produce stands and counters. Excluded are liquor and beverage stores (514), creamery and dairy stores (515), and delicatessens (516).
514	Liquor, beverage store.
515	Creamery, dairy store.
516	Delicatessen. Sale of prepared foods mainly for consumption off the premises. Included are pickup and carryout services. Excluded are drive-in-type restaurants (164).
510	Food, beverage sales not able to be classified further.
52	Textile, Wearing Apparel Sales.
521	Clothing store. Sale of wearing apparel, whether new or used, and clothing rental shops. Included are sales of accessories incidental to clothing sale. Excluded are shoe stores (522) and fur stores (525).
522	Clothing accessories, shoe store. Shops specializing in clothing accessories, whether new, used, or rented. Included are tie, shoe, and hat stores.
523	Shoe repair shop. Repair of boots and shoes (cobbling). Included are repairers who also make footwear and shining stands and shops.
524	Tailor, dressmaking shop. Included are stores specializing in alterations to ready-made wear.
525	Fur store. Stores specializing in fur sales. Excluded are fur departments of stores with a broad line of clothing goods (521) and the storage of fur garments (828).
526	Dry goods store. Included are all sales of dry goods, yard goods, and piece goods. Excluded are clothing stores (521), clothing accessories stores (522), and rug or carpet sales (536).
520	Textile, wearing apparel sales not able to be classified further.
53	Household Goods Sales, Repairs. Sale of common items used principally to equip and maintain the home.
531	Furniture store. Included are sales of all new and used furniture, office furniture, and large non-desktop equipment, such as water coolers. Excluded are office supply and desktop office equipment sales (541), and furniture departments of large multi-department stores (581).
532	Appliance store.

(continues)

Table A.6.3.3 *Continued*

Code	Description
	Included are those stores principally selling major and minor appliances with or without associated repair departments. Excluded are appliance repair shops without sales (538).
533	Hardware store. Included are sales of tools and associated equipment, parts, and retail plumbing supplies.
534	Music or video store. Included are the sale or rental of records, sheet music, videotapes, compact and laser disks, pianos, organs, and other musical instruments, and associated listening and teaching facilities.
535	Wallpaper, paint store. Included are sales of wall coverings and decorating materials and sale or rental of associated tools and equipment.
536	Rug, floor covering store. Included are the sale or rental of rugs, carpets, and floor coverings, and sale or rental of associated tools and equipment.
537	Furniture repair shop. Included are shops for repair of furniture and upholstery without sales. Excluded are repairs with sales (531).
538	Appliance repair shop. Included are shops for repair of appliances without sales. Excluded are repairs with sales (532).
530	Household goods sales, repairs not able to be classified further.
54	Specialty Shops. Sale of material commonly used in the home.
541	Book, stationery store. Included are sales of new or used books, office supplies, and desktop office equipment. Excluded are sales of larger office equipment and office furniture (531).
542	Newsstand, tobacco shop.
543	Drug store. Usually has a pharmacist on duty. Excluded are drug stores that are chiefly variety stores (582 or 583).
544	Gift, jewelry store. Included are sales of glassware, china, and silver and the repair of jewelry and watches.
545	Electronic specialty store. Included are sales of radios, CBs, computers, televisions, video recording equipment, hi-fi, and related components. Excluded are the sales and rental of videotapes or compact disks (534).
546	Leather goods shop. Included are the sale of leather goods and luggage of all types and all materials. Excluded are shoe stores (522).
547	Florist shop, greenhouse. Included are florist shops for the sale of flowers (artificial or natural), greenhouses, and flower raising operations. Excluded are garden shops (554).
548	Optical goods sales.

(continues)

Table A.6.3.3 *Continued*

Code	Description
	Included are opticians and eyeglass fitting and grinding.
540	Specialty shops not able to be classified further.
55	Recreation, Hobby, or Home Repair Supply Sales, Personal Services. The sale and processing of material used in hobbies, sports, and recreation activities and personal service. Excluded are record shops and video stores (534).
551	Hobby, toy shop. Included are the sale of toys and hobby supplies. Excluded are art supplies (563), sporting goods (552), and photographic goods (553).
552	Sporting goods store. Included are the sale of firearms, ammunition, tents, and other material for use in all sporting and athletic activities. Excluded are sportswear shops (521).
553	Photographic supply sales, still-picture studio. Included is the sale of photographic equipment. Excluded are motion-picture studios (186) and plant processing of film (797).
554	Garden supply store. Included are the retail sale of equipment, seeds, fertilizer for home or garden use, and sale or rental of snow blowers, lawn sweepers, and other home maintenance machines.
555	Retail lumber sales. Lumber distribution centers. Included are incidentalsales of related home repair supplies. Excluded are lumberyards used principally for storage (851).
556	Pet store, animal hospital. Sale of pets, animal and pet supplies. Included are animal hospitals and care centers.
557	Barber, beauty shop.
558	Fireworks sales. Included are retail fireworks sales from temporary or permanent locations.
550	Recreation, hobby, or home repair supply sales, personal services not able to be classified further.
56	Professional Supplies, Services.
561	Professional supply sales. Included are the sale of stethoscopes, hospital supplies, special tools, engineering instruments, and other professional supplies.
562	Trade supply sales. Included are the sale of machinists' supplies, plumbers' tools, and carpenters' equipment.
563	Art supply sales.
564	Self-service laundry, dry cleaning.
565	Linen supply house.
566	Laundry, drycleaner pickup shop. Shops for pickup of laundry and cleaning with little or no processing on the premises, other than pressing.
567	Home maintenance services. Included are firms doing home maintenance work such as floor cleaning, window washing, chimney cleaning, and exterminating.
568	Restaurant supplies, services.

(continues)



Table A.6.3.3 *Continued*

Code	Description
560	Professional supplies, services not able to be classified further.
57	Motor Vehicle or Boat Sales, Services.
571	Public service station. Fuel service facilities for motor vehicles operated for the public, such as gasoline service stations, diesel fuel stations, and LP-Gas stations, with associated lubrication and wash facilities. Included are service station islands. Excluded are marine service facilities (577).
572	Private service station. Private or fleet vehicle refueling where employees may fuel the vehicle themselves, such as at a transit company garage, a trucking company yard, or a farm.
573	Motor vehicle repair, paint shop. Repair of automobiles or motor trucks and shops doing specialized repair work to motor vehicles such as repair of auto tops, hoods, or electrical systems. Excluded are car washing facilities (578).
574	Motor vehicle, trailer sales. Included are the sale of farm implements and motorcycles.
575	Motor vehicle accessory sales. Sale of accessories for motor vehicles such as lights, tires, parts, and special tools.
576	Boat, pleasure-craft sales. Sale of boats, marine vessels, outboard motors, and accessories. Excluded are incidental sales at boat storage facilities (885) and boat repair yards (782).
577	Marine service station. Refueling facilities for marine vessels of any size.
578	Car washing facility.
570	Motor vehicle or boat sales, services not able to be classified further.
58	General Item Stores. Included are stores selling a wide range of items that cannot be readily classified in previous subdivisions.
581	Department store. A store with many separate lines of goods, but to be classified here the store must have a full furniture department.
582	Small variety store. A store of less than 10,000 ft <sup>2</sup> (930 m <sup>2</sup> ) with a wide range of goods but no furniture department. Included are Army-Navy stores, "five- and ten-cent stores," secondhand stores, and surplus stores.
583	Large variety store. A store of 10,000 ft <sup>2</sup> (930 m <sup>2</sup> ) or over with a wide range of goods but no furniture department. Merchandise is usually displayed as in a supermarket, and stores are usually self-service with checkout counters.
584	Mail order store. Mail order and catalogue stores with display area, regardless of size. When the mail order section is a small section of a larger store, it should be classified in subdivision 581.
585	Mall.

(continues)

Table A.6.3.3 *Continued*

Code	Description
	Included are only the areas common to a multistore facility.
580	General item stores not able to be classified further.
59	Offices. Office properties are those used for the transaction of business, for the keeping of accounts and records, and for similar purposes. Included are buildings housing business, administrative, professional, or regulatory functions; doctors' and dentists' offices, unless of such character as to be classified as hospitals; service facilities usual to office buildings; and municipal office buildings, since their principal function is the transaction of the public business and the keeping of books and records. Minor office occupancy incidental to operations in another property should be considered part of the predominating property.
591	General business office. Office buildings for the administration of industrial and business enterprises whether at the plant or located elsewhere. Included are offices of insurance carriers, consultants, and adjusting agencies; real estate operators, developers, and agents; lawyers, advocates, and solicitors; importers, exporters, manufacturers' agents, and commodity brokers; trade associations, chambers of commerce, and professional societies; labor organizations; religious organizations; local and county government offices; state or provincial government offices; central government offices; offices of the armed forces and defense agencies; and savings and loan companies without first-story banking premises.
592	Bank, with first-story banking facilities. Excluded are savings and loan companies without first-story banking premises (591).
593	Medical, research, scientific office. Included are surgical, dental, and health service offices; outpatient clinics; offices of nurses and midwives; consulting rooms or offices of physicians, surgeons, and other medical practitioners; offices primarily engaged in research; and offices at meteorological institutes. Excluded are laboratories classified in division 62 and offices that provide treatment for four or more patients that may render them incapable of self-preservation due to application of general anesthesia or require them to receive assistance from others due to specified treatment (342).
594	Engineering, architectural, technical office. Included are surveying and scientific engineering development offices, and permanent office buildings of a contractor. Excluded are contractors' job site-located offices (591) and tool or parts storage (808).
595	Mailing firm.

(continues)

Table A.6.3.3 *Continued*

Code	Description
596	Post office.
590	Offices not able to be classified further.
50	Other Mercantile, Business Property.
500	Mercantile, business property not able to be classified further.
6	Basic Industry, Utility, Defense, Agriculture, Mining Property. Included are agriculture, forestry, the extractive and mining industries, mineral products, utilities, laboratories, nuclear plants, and communication facilities; and national defense sites, since they depend so heavily on communications.
61	Nucleonics, Energy Production.
611	Radioactive material working. Included are plants manufacturing fuel elements or involved with radioactive waste disposal, and plants processing or producing uranium, radium, thorium, heavy water, or plutonium.
612	Nuclear ordnance plant. Included are bomb assembly plants.
613	Nuclear energy plant. Production of energy for power purposes. Included is the generation of electricity if it is an integral part of the nuclear plant.
614	Steam-, heat-generating plant. Creation of heat and steam from any fuel except nuclear. Included are integral boiler-turbine-generator units driven by non-nuclear fuels.
615	Electric generating plant. Generation of electric energy. Included are locations producing electricity for public use, for rail transport use, for groups of factories, and for individual properties. Excluded are the energy sources (613 or 614) unless they are integral units.
616	Gas manufacturing plant. Manufacture of gas in gas works, including peak shaving gas plants.
610	Nucleonics, energy production not able to be classified further.
62	Laboratories. Included are classrooms and offices incidental to laboratory facilities. Minor laboratory areas incidental to operations in another property shall be considered part of the predominating property.
621	Chemical, medical laboratory. Included are biological laboratories.
622	Physical materials testing laboratory. Included are all laboratories for testing physical properties of materials, hydraulic laboratories, physics laboratories, and physical materials laboratories.
623	Personnel, psychological laboratory. Included are laboratories for the testing and measuring of persons, and educational laboratories.
624	Radioactive materials laboratory. Any laboratory handling or using radioactive material in a quantity requiring marking.
625	Electrical, electronic laboratory.
626	Agricultural laboratory.
627	General research laboratory.

(continues)

Table A.6.3.3 *Continued*

Code	Description
620	Laboratories not able to be classified further.
63	Communications, Defense, Document Facilities. Critical areas where security must be maintained in order to ensure the continuity of national, business, or public safety.
631	National defense site not elsewhere classified. Included are missile or space vehicle launch sites. Excluded are radio and radar sites (632). The missiles or vehicles themselves are classified under Mobile Property Type. (See 6.7.4.2.)
632	Radio, radar site. Included are microwave transmitter sites, flight control facilities, satellite tracking stations, and repeater sites. Excluded are fire, police, and industrial communication centers (633).
633	Fire, police, industrial communications center. Included are municipal, county, state, and province emergency communications facilities, such as fire control centers, police control centers, disaster control facilities, and all auxiliary equipment locations; and industrial communications centers.
634	Telephone exchange, central office. Included are communications cable sites with the associated repeater and terminal facilities.
635	Computer, data-processing center.
636	Document center, record repository.
630	Communications, defense, document facilities not able to be classified further.
64	Utility, Energy Distribution Systems.
642	Electric transmission, distribution system. Distribution of electricity outside generating plant premises. Included are substations, transformers, and utility poles.
644	Gas distribution system, gas pipeline. Piping systems and associated equipment for the distribution of gas fuels from manufacturing plants, storage facilities, or wells to the user. Included are transmission lines, compressors, and distribution piping.
645	Flammable or combustible liquid distribution system, pipeline. Piping systems and associated equipment for the distribution of flammable or combustible liquid from manufacturing plants, storage facilities, or wells to the user.
646	Steam, heat distribution system. Distribution of steam, hot water, hot chemicals, and hot oils, for heating and power purposes. Included are "district heating" systems.
647	Water supply system. Collection, treatment, storage, and distribution of water.
648	Sanitary service, garbage and sewage disposal. Included are sewer systems, commercial incinerators, and industrial rubbish burners. Excluded are dumps (division 91).
640	Utility, energy distribution systems not able to be classified further.
65	Agriculture.

(continues)

Table A.6.3.3 *Continued*

Code	Description
	Production of raw agricultural products and farming. Processing and working of products is classified elsewhere.
651	Livestock production. Included are milking facilities, poultry and egg production, and other livestock (including exotics) production. Excluded are meat and milk processing plants (711 and 712).
655	Crops, orchards. Included is improved fenced pasture land.
656	Curing and drying facility for agricultural products.
657	Fruit, vegetable packing. Packing of raw fruit and vegetables as picked. Excluded are fruit and vegetable processing plants (713).
66	650 Agriculture not able to be classified further. Forests, Hunting, Fishing.
661	Forest, standing timber without logging operations. Included are wildlife preserves; timber tracts where planting, replanting, and conservation of forests are conducted; areas where uncultivated materials, such as gums and resins, wild rubber, saps, barks, wild fruits and flowers, and roots are gathered; and facilities where extracting, concentrating, and distilling of sap and charcoal burning are carried on when located in the forest.
662	Forest, standing timber with logging operation. Included are land areas where there is felling and rough cutting of trees, hewing or rough shaping of poles, blocks, and other wood materials; and timber and log piles in the forest. Excluded are sawmills operating in the forest (751).
663	Hunting, trapping, game propagation. Included are areas where hunting, trapping, and game propagation of wild animals is conducted for commercial purposes not connected with sport.
665	Fish hatchery.
666	Wood-chip pile.
660	Forests, hunting, fishing not able to be classified further.
67	67 Mining, Quarrying of Natural Raw Materials. Underground and surface mines, quarries, and oil wells. Included are supplemental on-site machinery, prospecting for minerals, and preparing sites for extraction. Quarries and mines attached to other properties are, as far as possible, classified in this division.
671	Coal mine.
672	Ore mine.
673	Ore concentration plant.
674	Petroleum, natural gas well with accompanying reservoir. Oil- and gas-producing property, oil well and natural gas well operations. Included are prospecting and drilling, oil shale or bituminous sands operations, and extraction of crude oil.

(continues)

Table A.6.3.3 *Continued*

Code	Description
	Excluded are pipeline operations (644 and 645).
675	Stone, slate, clay, gravel, sand quarries, pits. The extraction of building and monumental stone or slate; ceramic, refractory, and other clay; and all sand and gravel.
676	Salt mine. The extracting and quarrying of salt. Included are evaporating in salt pans, crushing, screening, and refining. Excluded are the refinement of salt for human consumption in establishments not engaged in extracting or quarrying salt (719).
677	Chemical, fertilizer, mineral mine. The mining and quarrying of phosphate and nitrate minerals, fluorspar, sulfur ores and natural sulfur, potash, sodium and borate minerals, borites, pyrites, arsenic, strontium and lithium minerals, and mineral pigments. Included are guano-gathering operations.
678	Nonmetallic mineral mine, quarry. All other nonmetallic mining and quarrying, such as asbestos. Included are areas where peat is cut and dug.
670	Mining, quarrying of natural raw materials not able to be classified further.
68	Nonmetallic Mineral, Mineral Products Manufacture. Manufacture of clay products; glass and glass products; pottery, china, and earthenware; cement, concrete products, and other nonmetallic mineral products. Coal and petroleum are classified in division 67.
681	Structural clay products manufacture. Manufacture of structural clay products such as bricks, tiles, pipes, crucibles, architectural terra-cotta; stove lining, chimney pipes and tops; and refractories.
682	Glass manufacture, excluding containers. Manufacture of all glass and glass products except glass containers. Included are the manufacture of optical glasses and glass fiber. Excluded are the grinding of lenses (792 or 548) and glass container manufacturing (683).
683	Glass container manufacture.
684	Pottery, china, earthenware manufacture.
685	Cement manufacture.
686	Concrete batch plant.
687	Abrasives manufacture. Included are the shaping of natural abrasives into grindstones, coating cloth and paper with abrasives, and making abrasive bonded wheels and disks.
688	Nonmetallic mineral product manufacture. Manufacture of concrete, gypsum and plaster products, asbestos, mineral wool, cut-stone and stone products, and all other nonmetallic mineral products.
680	Nonmetallic mineral, mineral products manufacture not able to be classified further.
60	Other Basic Industry, Utility, Defense, Agriculture, Mining Property.

(continues)

Table A.6.3.3 *Continued*

Code	Description
600	Basic industry, utility, defense, agriculture, mining property not able to be classified further.
7	Manufacturing, Processing Property. This major division includes properties where there is mechanical or chemical transformation of inorganic or organic substances into new products, whether the work is performed by power-driven machines or by hand, whether it is done in a factory or in the worker's home, and whether the products are sold at wholesale or retail. The assembly of component parts of manufactured products is part of manufacture. Included are factories making products of all kinds and properties devoted to operations such as processing, assembling, mixing, packing, finishing or decorating, repairing, and similar operations. For mineral processing, use division 68.
71	Food Industries.
711	Slaughtering, preparation, preserving of meat. Included are processing and packing activities such as curing, smoking, salting, pickling, packing in airtight containers, and quick-freezing, as well as manufacture of natural sausage casing and the rendering of lard and other edible animal fats. Excluded are canning and processing of fish and seafood (714).
712	Dairy processing and manufacture. Manufacture of cream and butter, natural and processed cheese, condensed and other types of concentrated milk, ice cream, and ices, powdered milk, and other edible milk products. Included are the pasteurizing and bottling of milk.
713	Canning, preserving of fruits, vegetables. Canning (packing in airtight containers) of fruits and vegetables including fruit and vegetable juices; manufacture of raisins and dried fruits, preserves, jams and jellies, pickles, sauces, and canned soups. Included are dehydration and quick-freezing.
714	Canning, preserving of fish, seafood. Preserving and processing fish and other marine foods. Included are such operations as salting, drying, dehydrating, smoking, curing, cooling, pickling, packing in airtight containers, and quick-freezing. Excluded are icing, salting, filleting of fish catch, and processing of the catch aboard fishing vessels (mobile property type 48).
715	Manufacture of grain mill products. Grain mills (flour, meal, dry feeds); husking, cleaning, and polishing of rice; preparation of breakfast foods such as rolled oats, rice, wheat and corn flakes, parched grain; prepared feeds for animals and fowl; blended and prepared flour, and other cereal and pulse preparations.

(continues)

Table A.6.3.3 *Continued*

Code	Description
716	Included are coffee, pulse, and root peeling mills; and starch and its products. Bakery product manufacture. Manufacture of bread, cakes, cookies, doughnuts, pies, pastries, and similar "perishable" bakery products; biscuits and similar "dry" bakery products and pasta products. Excluded are breakfast foods (715).
717	Sugar refining, confectionery manufacture. Manufacture and refining of raw sugar, syrup, and granulated or clarified sugar from sugar cane or sugar beets. Manufacture of cocoa and chocolate powder from beans, chocolates, all types of confectionery.
718	Snack foods manufacture. Potato chips and other products of deep-fat frying.
719	Special food industries. Included are the manufacture of baking powder and yeast; condiments, mustard, and vinegar; food specialties; egg specialties; spice grinding; processing of tea leaves into black tea; edible salt refining; harvesting and the manufacture of ice, except dry ice; and commercial kitchen with meal preparation for off-premises consumption (as in catering businesses). Excluded is the manufacture of dry ice (761).
720	Food industries not able to be classified further.
72	Beverages, Tobacco, Essential Oils.
721	Distilling, rectifying, blending spirits. Included are the distilling of ethyl alcohol for all purposes and the distilling, rectifying, and blending of alcoholic liquors.
722	Wines, winery. Production of wines, cider, and other fermented beverages except malt liquors.
723	Brewery, manufacture of malt. The production of malt and malt liquors.
724	Soft drink, carbonated water industry. Manufacture of nonalcoholic beverages, such as soft drinks and carbonated mineral waters. Included are the incidental manufacture of flavoring extracts and syrups. Excluded is the manufacture of syrup alone (717).
725	Tobacco products manufacture. Included are stemming, redrying, and other operations after auctioning that are connected with preparing raw-leaf tobacco for manufacturing. Excluded are tobacco drying/curing sheds (656).
726	Vegetable and animal oil, fat; soap making. Production of crude oil, cake, and meal by crushing or extraction, from oilseeds and nuts; the extraction of fish and other marine animal oils; the rendering of inedible animal oils and fats; manufacture of margarine; and the refining and hydrogenation (or hardening) of oils and fats.

(continues)

Table A.6.3.3 *Continued*

Code	Description
	Manufacture of soaps, detergents, and other washing and cleaning compounds, except where the process is chemical only, not involving oil or fat from livestock.
	Excluded are the manufacture of lard and other edible fats (711) and butter (712).
720	Beverages, tobacco, essential oils not able to be classified further.
73	Textiles.
731	Cotton gin.
732	Cotton spinning, weaving.
	Preparing cotton fibers, such as picking, carding, combing, carbonizing, spinning, and weaving of yarns and fabrics.
	Manufacture of narrow fabrics and other small wares; carpets and rugs; and lace, braids, and other primary textiles.
	Excluded are spinning and weaving of asbestos (688).
733	Wool or worsted spinning, weaving.
	Preparing wool and worsted fibers, such as scouring, carding, combing, carbonizing, spinning, and weaving of yarns and fabrics.
	Manufacture of narrow fabrics and other small wares; carpets and rugs; and lace, braids, and other primary textiles.
	Excluded are spinning and weaving of asbestos (688).
734	Mixed, blended, other fibers.
	Spinning, weaving, preparing mixed, blended, and other fibers such as flax, hemp, jute, silk, sisal, and synthetic fibers such as retting, scutching, scouring, carding, combing, carbonizing, throwing, spinning, and weaving. Manufacture of narrow fabrics and other small wares; carpets and rugs; and lace, braid, yarn, and other primary textiles.
	Excluded are spinning and weaving of asbestos (688).
735	Textile finishing plant.
	Bleaching, dyeing, printing, and finishing of all fabrics and fibers.
736	Knitting mills for all fibers.
	Included are mills engaged in producing hosiery, outerwear, underwear, and other knitwear.
	Excluded are the making of garments from knitted fabrics other than in knitting mills (742).
737	Cordage, rope, twine, net manufacture.
	Manufacture of rope, cable, cordage, twine, net, and other related goods from hemp, jute, cotton, paper, straw, coir, flax, and other fibers.
738	Floor covering, coated fabric manufacture, excluding rubber.
	Manufacture of linoleum and other hard-surfaced floor coverings, artificial leather, oilcloth, and impregnated and coated fabrics.
	Excluded are the manufacture of rubber tile (747) and clay tile (681).
730	Textiles not able to be classified further.

(continues)

Table A.6.3.3 *Continued*

Code	Description
	Included are the manufacture of straw, coir, and similar matting and mats; felt by processes other than weaving; batting, padding, wadding, and upholstery filling from all fibers; and the recovery of fibers from waste and rags.
	Excluded are the manufacture of wood-excelsior upholstery filling (751).
74	Footwear, Wearing Apparel, Leather, Rubber.
741	Footwear manufacture.
	Manufacture of all kinds of footwear, boots, shoes, cut stock, findings, leggings, and gaiters from leather, fabrics, plastics, wood, and other materials.
	Excluded are vulcanized footwear (747) and repair shops that make footwear on a custom basis (523).
742	Wearing apparel manufacture, excluding footwear.
	Manufacture of wearing apparel by cutting and sewing fabrics, leather, fur, and other materials; the making of hat bodies, hats, and millinery; and the manufacture of umbrellas and walking sticks.
	Excluded are the repair of wearing apparel in connection with the cleaning and pressing of these articles (796), tailoring and dressmaking (524), and shoe repair (523).
743	Made-up textile goods manufacture, excluding wearing apparel.
	Manufacturers who do no weaving and primarily engage in making up cloth goods such as house furnishings, trimmings of fabric, embroideries, and pennants.
	Included are stitching, pleating, and tucking for the trade.
744	Tanneries, leather finishing.
	Included are currying, finishing, embossing, and japanning of leather.
745	Fur products manufacture, excluding wearing apparel.
	Included are scraping, currying, tanning, bleaching, and dyeing of fur and other pelts; the manufacture of fur and skin rugs and mats, hatter's fur, and other fur, and skin articles; and fellmongery.
	Excluded are wearing apparel items manufactured from fur products (742).
746	Leather products manufacture, excluding footwear, wearing apparel.
	Manufacture of leather products and articles made of leather, and products and articles made of leather and leather substitutes, such as leather sporting goods.
	Excluded are the manufacture of wooden saddlery (753), the manufacture of footwear (741), and the manufacture of wearing apparel (742).
747	Rubber, rubber products manufacture.
	Manufacture of natural or synthetic rubber and all kinds of rubber products. The reclaiming of rubber from used tires, scrap, and miscellaneous waste rubber.
740	Footwear, wearing apparel, leather, rubber not able to be classified further.

(continues)

Table A.6.3.3 *Continued*

Code	Description
75	Wood, Furniture, Paper, Printing.
751	Sawmill, planing mill, wood products mill. Manufacture of lumber products; wooden building materials and prefabricated parts and structures; cooperage and other wood stock; veneers and plywood; and excelsior. Included are areas doing preservation of wood; and sawmills and planing mills, whether or not mobile or operated in the forest. Excluded are the hewing and rough shaping of poles and other wood materials in the forest (662), and the manufacture of camping trailers and motor homes (784).
752	Manufacture and assembly of mobile and modular buildings. Included are the manufacture of mobile homes.
753	Wood, cane, cork products manufacture. Included are the manufacture of boxes, crates, drums, barrels, and other wooden containers; baskets and other rattan, reed, or willow containers; and small ware made entirely or mainly of wood, rattan, reed, willow, cane, or cork.
754	Furniture, fixture, bedding manufacture. Manufacture of household, office, restaurant, public building, and professional furniture; bedding and upholstery; office and store fittings and fixtures regardless of the materials used. Excluded are the manufacture of special medical furniture, equipment, fixtures, and machines (791).
755	Paper, pulp, paperboard manufacture. Manufacture of pulp from wood, rags, and other fibers; and of paper, paperboard, insulation board, and fiber building paper. Included are the coating, glazing, and laminating of paper and paperboard. Excluded are the manufacture of asphalt and tar-saturated paper (768), abrasive paper (687), sensitized paper (792), and carbon and stencil paper (790).
756	Paper, pulp, paperboard products manufacture. Manufacture of pressed and molded pulp goods and articles made of paperboard.
757	Newspaper or magazine printing, publishing. Printing, lithographing, and publishing newspapers, periodicals, magazines, trade journals, reviews, and related services.
758	Printing, publishing, allied industry. Included are commercial or job printing; lithographing, and silk-screen printing; manufacture of greeting cards; loose-leaf devices, library binders, and bookbinding; blank-book making, and paper ruling; and other work related to bookbinding such as bronzing, gilding, and edging; mat and mounting; services for the printing trades such as typesetting, engraving, and etching steel and copper plates; making woodcuts; photoengraving; and electrotyping and stereotyping. Excluded are type foundries (773) and engraving on precious metals (794).

(continues)

Table A.6.3.3 *Continued*

Code	Description
750	Wood, furniture, paper, printing not able to be classified further.
76	Chemical, Plastic, Petroleum. For the purpose of this classification, a chemical is a material that has had or will have a controlled change in the molecular structure or composition, not involving polymerization; while a plastic is a material whose molecule has been polymerized. See division 61 for heavy water or for nuclear changes.
761	Industrial chemical manufacture. Manufacture of industrial organic and inorganic chemicals and industrial gases. Included are dry ice manufacturing plants. Excluded are all monomers and plastics plants (763).
762	Hazardous chemical manufacture. Manufacture of materials requiring special handling in manufacture, shipment, storage, or use. Included are explosives, blasting agents, fireworks, matches, unstable rocket propellants, pyroxylin (cellulose nitrate) plastics, hazardous monomers, and organic peroxides. Excluded are the manufacture and handling of nuclear materials (611).
763	Plastic manufacture. Manufacture of raw materials for plastics except those included in 762, and of synthetic resins, plastics, and elastomers.
764	Plastic product manufacture. Included are facilities making plastic furnishings, housings, enclosures, covers, linings, and machine parts whether by molding, extruding, or any other method.
765	Paint, varnish, lacquer, ink, wax, adhesive manufacture. Included are the manufacture of varnish stains and shellac, enamels, japans, polishes, and gelatin.
766	Drug, cosmetic, pharmaceutical manufacture. Manufacture of drugs, medicinal and pharmaceutical preparations, perfumes, cosmetics, and other toilet preparations.
767	Petroleum refinery, natural gas plant. Included are the manufacture of petrochemicals; products from crude petroleum and its fractionation products, including asphalt; the manufacture of petroleum and petroleum products from coal and other materials, including blending of lubricating oils and greases; and refinery tankage.
768	Asphalt, coal product manufacture. Manufacture of asphalt tar or similar paving and roofing materials and fuel briquettes and packaged fuel. Included is the distillation of coal in coke ovens. Excluded are the distillation of coal in coke ovens in iron and steel works (771) and the manufacture of coal gas (616).
760	Chemical, plastic, petroleum not able to be classified further.

(continues)

Table A.6.3.3 *Continued*

Code	Description
77	Metal, Metal Products.
771	Iron, steel manufacture. Manufacture of iron and steel shapes, consisting of all processes from smelting in blast furnaces to the semi-finished stage in rolling mills and foundries. Included are coke ovens associated with blast furnaces.
772	Nonferrous metal manufacture. Manufacture of nonferrous metal shapes. Included are the processes of smelting, alloying, and refining, rolling and drawing, and founding and casting, that are necessary to produce ingots, bars, billets, sheets, strips, castings, and extrusions.
773	Metal product manufacture. Transformation of metal forms into finished products such as household cutlery. Included are industries engaged in enameling, japanning, lacquering, gilding, galvanizing, plating, and polishing metal products; and blacksmithing and welding. Excluded are plants manufacturing machinery (774), electrical equipment (775), silverware and jewelry (794), and specialized automobile, aircraft, and ship parts (division 78).
774	Machinery manufacture. Manufacture of machinery and prime movers other than electrical equipment. Included are machine shops engaged in producing and repairing machine and equipment parts, and the production of ball bearings and mechanical precision measuring instruments, as well as industrial engines, and measuring and dispensing pumps. Excluded are plants manufacturing electrical equipment (775) and engines or specialized parts for automobile, aircraft, and marine use (division 78).
775	Electrical equipment manufacture. Manufacture of machinery, apparatus, and supplies for the generation, storage, transmission, and transformation of electrical energy. Included are the manufacture of insulated wire and cable and the repair of electrical machinery. Excluded are instruments for measuring and recording electrical quantities and characteristics (791).
776	Electrical appliance, electronics equipment manufacture. Included are plants manufacturing electric lamps; computers, communication equipment, and related products, including radios and television sets; phonographs; electric batteries; x-ray and therapeutic apparatus; and electronic tubes and components as well as the repair of electrical appliances. Excluded are instruments for measuring and recording electrical quantities and characteristics (791).

(continues)

Table A.6.3.3 *Continued*

Code	Description
770	Metal, metal products not able to be classified further.
78	Vehicle Assembly, Manufacture.
781	Shipbuilding, repairing of vessels over 65 ft (20 m). Shipyards engaged in building and repair work on vessels over 65 ft (20 m) in length, including barges, lighters, and tugs, whether self-propelled or not. Included are specialized marine engines, masts, spars, rigging and ship parts manufacture, dry docks, and shipbreaking yards.
782	Boat building, repairing of vessels 65 ft (20 m) and under. Boatyards engaged in building and repair work on vessels 65 ft (20 m) and under in length, regardless of material used in manufacture and whether self-propelled or not. Included are facilities manufacturing specialized marine engines, outboard engines, masts, sails, rigging, and boat parts.
783	Railway equipment manufacture, assembly, repair. The building and rebuilding of locomotives and railroad or tramway cars for freight and passenger service, and the production of specialized parts for locomotive and railroad tramway cars. Included are shops operated by railway companies for the manufacture and repair of locomotives and cars.
784	Motor vehicle manufacture, assembly. Manufacture and assembly of motor vehicles such as automobiles, buses, trucks, truck trailers, universal carriers, motorcycles, motor scooters, camping trailers, and motor homes. Included are plants manufacturing motor vehicle parts and accessories. Excluded are plants principally manufacturing tires and tubes (747), automobile glass (682), electrical equipment (775), and agricultural and road-building tractors and forklift trucks (774); facilities involved with motor vehicle repairs (573); and facilities manufacturing mobile homes or mobile buildings (752).
785	Bicycle manufacturing, assembly, repair. Manufacture of bicycles, tricycles, pedicabs, and parts.
786	Aircraft and rocket manufacturing, assembly, repair. Manufacture, assembly, and repair of airplanes, gliders, rockets, missiles, and aircraft parts such as engines, propellers, pontoons, and undercarriages. Excluded are the manufacture of electric and electronic equipment (775 or 776) and aeronautical instruments (791).
787	Manufacture of special transport equipment. Plants manufacturing special transport equipment such as animal-drawn and hand-drawn vehicles and parts for such vehicles such as wheels and axles.
780	Vehicle assembly, manufacture not able to be classified further.
79	Other Manufacturing.

(continues)



Table A.6.3.3 *Continued*

Code	Description
	Manufacturing industries not classified in any other division.
791	Instrument manufacture. Manufacture of measuring, controlling, laboratory, and scientific instruments and surgical, medical, and dental instruments and supplies. Excluded are the manufacture of optical instruments for scientific and medical use (792), the manufacture of x-ray and electric therapeutic apparatus (776), and the production of measuring and dispensing pumps (774).
792	Photographic, optical goods manufacture. Manufacture of optical instruments and lens grinding, ophthalmic goods, photographic equipment and supplies, including sensitized film, plates, and paper. Included are plants manufacturing optical instruments for scientific and medical use.
793	Watch, clock manufacture. The manufacture of clocks and watches, clock and watch parts and cases, and mechanisms for timing devices.
794	Jewelry manufacture. Manufacture of jewelry, silverware, and plateware, using precious metals, precious and semiprecious stones, and pearls. Included are the cutting and polishing of precious and semiprecious stones, the striking of medals and coins, and engraving on precious metals.
795	Musical instrument manufacture. The manufacture of musical instruments, such as pianos, stringed instruments, wind instruments, and percussion instruments. Included is the manufacture of phonograph record blanks. Excluded are the manufacture of phonographs and speech recording machines (776).
796	Laundry, dry cleaning plant. Mechanical and hand laundries. Included are plants supplying laundered linens (aprons, table covers, towels, napkins, or diapers) on a contract basis; cleaning, pressing, and dyeing, and performing minor repairs to apparel and household furnishings.
797	Photographic film processing laboratory. Processing of photographic film in special plants and centers. Excluded are film-processing operations incidental to other operations, such as newspaper offices or hospitals.
798	Toy, sporting good manufacturing not classified in other divisions.
790	Other manufacturing not able to be classified further. Included are plants manufacturing carbon and stencil paper.
70	Other Manufacturing, Processing Property.
708	General maintenance shop not elsewhere classified.
700	Manufacturing, processing property not able to be classified further.

(continues)

Table A.6.3.3 *Continued*

Code	Description
8	Storage Property. Storage properties are all buildings, structures, or areas utilized primarily for the storage or sheltering of goods, merchandise, products, vehicles, or animals; and incidental servicing, processing, and repair operations. Storage includes the resale (sale without transformation) of goods to businesses, institutions, and government, such as the resale of industrial and construction materials, machinery, and equipment; farm machinery, implements, and supplies; and business and professional equipment. Also included are warehousing, grading, sorting, breaking bulk, and repacking, which are associated with reselling. Repacking in airtight containers is canning and is classified in subdivisions 713 and 714. Storage properties are characterized by the presence of relatively small numbers of persons in proportion to the area. Any new use that increases the number of occupants to a figure comparable with other classes of properties changes the classification of the building to that of the new use. If substantial mercantile or office operations exist (10 customers or more present at busy periods), they should be reclassified where appropriate in major division 5 (Mercantile, Business Property). Waste disposal is classified in division 91.
81	Agricultural Products Storage.
811	Seeds, beans, nuts, silage storage in bulk. Storage of seeds, beans, grain, natural feed, hay, or nuts in bulk in bins, silos, or piles in the open or in cribs. Excluded are storage in barns (815) and storage in elevators (816).
812	Boxed, crated, packaged agricultural products storage. Agricultural products stored in boxes, crates, or cartons, regardless of packaging material or container size.
813	Loose, bagged agricultural products storage. Agricultural products stored in bags of any material or size, or stored loose. Excluded are bagged products inside cardboard boxes (812), loose tobacco storage (814), and bulk storage of seeds, feeds, beans, nuts, and grain (811).
814	Loose, baled tobacco storage. Tobacco stored in loose quantities or in bales, crates, hogsheds, or barrels before or after auction, but before manufacture of finished tobacco products. Excluded are tobacco curing sheds (656) and storage during processing (725).
815	Barns, stables. Included are facilities associated with farms, zoos, or wildlife preserves, whether for providing restraint or protection for animals or for storage of feed. Excluded are silos (811).
816	Grain elevators. Included are soybean elevators.

(continues)

Table A.6.3.3 *Continued*

Code	Description
817	Livestock storage. Storage of livestock at any point beyond the raising ranch or farm. Included are rail and truck stockyards and other livestock pens and yards.
818	Agricultural supply storage. Storage of materials for agricultural purchase. Included are hay, feed, seed, fertilizer, and nonmotorized farm implement stores.
810	Agricultural products storage not able to be classified further.
82	Textile Storage.
821	Baled cotton storage. Included are cotton compresses.
822	Baled wool, worsted storage.
823	Baled silk, synthetic fiber storage.
824	Baled jute, hemp, flax, sisal, other mixed or blended fiber storage.
825	Cloth, yarn storage.
826	Wearing apparel, garments, finished textile storage.
827	Leather, leather products storage.
828	Fur, skin, hair products storage.
820	Textile storage not able to be classified further.
83	Processed Food, Tobacco Storage.
831	Packaged foodstuff storage. Foodstuffs stored in cardboard or paper packages.
832	Canned or bottled food, soft drink storage. Storage of canned or bottled foodstuffs. Included are plants that bottle materials made elsewhere.
833	Loose, bagged processed food storage. Processed foods stored in bulk or in bags of any material or size. Excluded are animal feed in hay, grain, seed, and feed stores (818), natural animal feed stored in bulk (811), and natural animal feed stored in bags (813).
834	Food locker plants.
835	Cold storage.
836	Bulk sugar storage.
837	Bulk flour, starch storage.
838	Packaged tobacco product storage. Storage of finished tobacco products in any type of package.
830	Processed food, tobacco storage not able to be classified further.
84	Petroleum Products, Alcoholic Beverage Storage. Included are gases of all kinds, flammable liquids, and combustible liquids, except those specifically mentioned in division 86, such as 865 for paint and varnish. Waste disposal is classified in division 91.
841	Flammable, combustible liquid tank storage. Included are airport fuel dispensing systems, bulk plants, terminals, and tank farms. Excluded are refinery tankage (767) and reservoirs at oil wells (674).
842	Gasometer, cryogenic gas storage.
843	LP-Gas bulk plant. Excluded is filling individual cylinders for the public (571).
844	Missile, rocket fuel storage.

(continues)

Table A.6.3.3 *Continued*

Code	Description
	Included are storage facilities at the manufacturing plant, launching site, and intermediate fixed storage locations.
845	Packaged petroleum products storage.
846	Alcoholic beverage storage. Storage of liquor, beer, wine, and other alcoholic beverages, whether in barrels, casks, kegs, or bottles.
840	Petroleum products, alcoholic beverage storage not able to be classified further.
85	Wood, Paper Products Storage.
851	Lumberyard, building materials storage. Storage of lumber and building materials. Excluded are the storage of timber, pulpwood, logs, and wood fuel while in the forest (662) or at sites awaiting use (856); and wood chips (666).
852	Wood products, furniture storage.
853	Fiber products storage. Storage of products made from fibers of ordinary combustible materials, such as fiberboard; or noncombustible fiber materials with combustible components such as fiberglass insulation.
	Included are pulp, felt, excelsior, and rope.
854	Rolled paper storage.
855	Paper, paper products storage. Included are cartons, bags, waste paper, and baled paper. Excluded are rolled paper (854) and pulp storage (853).
856	Timber, pulpwood, logs, wood fuel. Included are areas where timber, pulpwood, logs, and wood fuel are stored in bulk after leaving the forest and before processing or use. Excluded is storage in the forest (662).
850	Wood, paper products storage not able to be classified further.
86	Chemical or Plastic, Chemical or Plastic Product Storage. For the purpose of this classification, a chemical is a material that has had or will have a controlled change in its molecular structure or composition, not involving polymerization; while a plastic is a material whose molecule has been polymerized. Waste disposal is classified in division 91.
861	Industrial chemical storage.
862	Hazardous chemical storage not specifically listed below. Excluded are radioactive materials (division 61).
863	Plastic, plastic product storage.
864	Fertilizer storage. Excluded is fertilizer storage in connection with agricultural supply storage (818).
865	Paint, varnish storage.
866	Drug, cosmetic, pharmaceutical storage.
867	Rubber, rubber products storage.
868	Photographic film storage. Storage of photographic films, new or exposed, including motion picture film, x-ray film, industrial film, and hobby film. Included are picture distribution facilities such as film exchanges.

(continues)

Table A.6.3.3 *Continued*

Code	Description
860	Chemical or plastic, chemical or plastic product storage not able to be classified further.
87	Metal, Metal Product Storage.
871	Basic metal form storage.
872	Metal parts storage (often in trays or bins or on racks).
873	Hardware storage. Included are storage of auto parts, auto accessories, tools, and plumbers' supplies.
874	Machinery storage.
875	Electrical appliance, supply storage.
876	Finished metal products storage (often in cartons or crates).
877	Scrap, junkyards. Excluded are refuse dumping and recycling areas (division 91).
870	Metal, metal products storage not able to be classified further.
88	Vehicle Storage.
881	Residential parking garage. Parking of motor vehicles in one-story residential garages. Included are detached residential garages or residential garages separated from another structure by a fire division assembly. Excluded are attached garages to single-family dwellings (419) and general vehicle parking garages (882).
882	General vehicle parking garage. Parking of vehicles of various ownership in facilities under the direction of one management. Excluded are facilities for repair of motor vehicles (573), dwelling or one-story residential garages (881), and garages for public works vehicles and dump trucks (884).
883	Bus, truck, auto fleet, automobile dealer storage. Parking of motor vehicles of the same ownership and management. Included are truck parking, auto fleet parking, bus parking, trackless trolley parking, and taxicab parking. Excluded are machinery and equipment storage (884).
884	Heavy machine, equipment storage. Parking of road, farm, and contracting equipment in a suitably managed location. Included are storage of public works vehicles, construction and earth-moving equipment, dump trucks, and cranes.
885	Boat, ship storage. A marine parking "garage." Docking and mooring facilities for boats in the water. Included are launching facilities and storage of boats and ships for relatively long periods of time. Excluded are yacht club buildings (143), boat repairing yards (782), and marine service stations (577).
886	Aircraft hangar.
887	Railway storage. Included are locomotive storage, car storage, and track repair equipment storage, and all fixed railroad storage facilities.

(continues)

Table A.6.3.3 *Continued*

Code	Description
	Excluded are railroad yards and signaling and switching facilities (division 95).
888	Fire stations.
880	Vehicle storage not able to be classified further.
89	General Item Storage.
891	General warehouse. Excluded are warehouses storing mainly wood furniture (852), warehouses storing mainly foodstuffs (division 83), and warehouses storing mainly textiles (division 82).
892	Bagged mineral products storage. Included are storage facilities for cement, lime, and gypsum.
893	Packaged mineral products storage. Included are storage facilities for glass, clay products, pottery, and earthenware.
894	Freight terminal.
895	Coal, coke briquette, charcoal storage. Storage of solid fuels in bags, boxes, or bulk. Excluded are wood fuel storage facilities (662).
896	Military stores, national defense storage not elsewhere classified.
897	Ice storage. Storage of natural and manufactured ice. Included are separate, detached, portable coin-operated storage and dispensing units.
898	Wharf, pier.
899	Self-storage units for residential commodities. Included are facilities for the storage of residential commodities in areas within a structure each of which is privately controlled by the renter or lessee. Excluded are commercial storage facilities and warehouses.
890	General item storage not able to be classified further.
80	Other Storage Property.
808	Toolshed, contractor's shed. Included are sheds used primarily for storage. Excluded are sheds used as field offices (591).
800	Storage property not able to be classified further.
9	Outside or Special Property. Outside or special properties are not readily classified in any of the preceding major divisions. They include mainly outdoor properties. Fixtures such as signs, fences, and poles that are usually on outdoor property are not separate specific property uses. The specific property use upon which this item is located should be identified. The sign, fence, or fixture, if involved in ignition, should be identified in the appropriate sections of Chapter 8.
91	Landfills, Dumps, and Recycling Facilities.
911	Managed nonhazardous refuse disposal site.
912	Unmanaged nonhazardous refuse disposal site.
913	Managed hazardous materials waste disposal site.
914	Unmanaged hazardous materials waste disposal site.
915	Temporary hazardous materials waste disposal site.
916	Recycling facility.

(continues)

Table A.6.3.3 *Continued*

Code	Description
910	Landfills, dumps, and recycling facilities not able to be classified further.
92	Special Structures.
921	Bridge, trestle. Included are overhead or elevated structures, such as overpasses, elevated roads, and railways.
922	Tunnel.
923	Public mailbox.
924	Toll station.
925	Shelter. Included are storm, tornado, bomb, fallout, weather, and bus shelters designed for short-term, intermittent use.
926	Outbuilding, excluding garage. Included are children's playhouses, privies, and collection sheds (boxes) used for temporary storage of miscellaneous items for routine pickup by charitable organizations.
927	Outdoor telephone booth.
928	Aerial tramway. Included are ski lifts and chair lifts.
920	Special structures not able to be classified further.
93	Outdoor Properties.
931	Open land, field. Included are lands of grass, herbaceous plants (weeds), and brush usually used for grazing (pasture land), wildlife habitat, and undeveloped recreation areas. Excluded are campsites with utilities (935), graded and cared-for plots of land (938), and improved fenced pasture land (655).
933	Residential yards. Included are the cared-for spaces around residential property.
934	Cemetery.
935	Campsite with utilities. Included are facilities for camping trailers, pickup truck-mounted campers, motor homes, and travel trailers. Excluded are unimproved camping areas (931).
936	Vacant lot. Included are uncared-for plots of land. Excluded are graded and cared-for plots of land (938).
937	Beaches, seashores, riverfront areas (salt or fresh water). Excluded are piers (898).
938	Graded and cared-for plots of land. Included are parks. Excluded are residential yards (933), open land and fields (931), campsites with utilities (935), playgrounds (124), and improved fenced pasture land or land used for crops (655).
930	Outdoor properties not able to be classified further.
94	Water Areas.
941	In open sea, tidal waters.
942	Within designated port, channel, anchorage.
943	Alongside quay, pier, pilings. Excluded are flammable liquid or gas loading and unloading facilities (944).

(continues)

Table A.6.3.3 *Continued*

Code	Description
944	At flammable liquid or gas loading, unloading facility.
945	Storm drain, flood control culvert.
946	Inland water area. Included are lakes, ponds, rivers or streams, and the like.
940	Water areas not able to be classified further.
95	Railroad Property. Included are railroads, subways, railways, trolleys, and other fixed rail properties. See subdivision 921 for bridges and trestles and subdivision 922 for tunnels.
951	Railroad right of way. Included are the areas marked by fence or 30 ft (9 m) beyond ballast on each side. Excluded are switchyards (952), and sidings (953).
952	Switchyard, marshalling yard.
953	Siding. The spurs within an industrial plant or other property.
954	Railroad signaling, switch control equipment location.
950	Railroad property not able to be classified further.
96	Road, Parking Property. See subdivision 921 for bridges and trestles and subdivision 922 for tunnels.
961	Limited-access highway, divided highway.
962	Paved public street. Included are associated parallel or diagonal parking on right of way. Excluded are limited-access and divided highways (961).
963	Paved private street, way. Included are paved driveways. Excluded are uncovered parking areas (965).
964	Unpaved street, road, path. Included are unpaved driveways.
965	Uncovered parking area. Included are open parking lots, rest stops, and open car stacking mechanisms. Excluded are driveways (963), covered parking garages (882), and campsites with utilities (935).
960	Road, parking property not able to be classified further.
97	Aircraft Areas.
971	In flight.
972	On runway. Included are the approach and overrun areas.
973	On taxiway, uncovered parking area, maintenance area. Included are all airport areas other than runway or loading ramp. Excluded are aircraft hangars (886).
974	At loading ramp.
970	Aircraft areas not able to be classified further.
98	Outside Equipment Operating Areas.
981	Construction site. Excluded are oil and gas fields (982). Buildings or structures under construction or demolition should be classified by their proposed or former use.
982	Oil, gas field.

(continues)

Table A.6.3.3 *Continued*

Code	Description
983	Pipeline, power line, or other utility right of way.
984	Industrial plant yard area.
	Excluded are parking areas (965), areas designated as outdoor storage in the yard, or areas that have another specific use.
980	Outside equipment operating areas not able to be classified further.
90	Other Outside or Special Properties.
900	Outside or special properties not able to be classified further.
00	Other Specific Property Use.
097	Vacant structure unable to be classified elsewhere.
098	Specific property use not applicable.
000	Specific property use not able to be classified further.
UUU	Specific property use undetermined or not reported.

**A.6.4** The “specific property use” data element identifies the actual use of a specific space, structure, or portion of a structure on the property. Every piece of property, whether it is a structure or an open piece of land, has a use. The specific property use should be one of the following:

- (1) The principal use of a fire division compartment in a structure if the structure or outside area is used for a single purpose
- (2) The principal use of a fire division compartment in a structure if the structure is used for multiple purposes
- (3) The principal purpose for which a section of a structure, a space, or an area, whether inside or outside, is used by the owner, tenant, or business occupying that space or area when there are multiple specific uses, multiple tenants, or multiple businesses using the same general property

Where mobile property is involved, the proper classification of the specific property is dependent on how the mobile property is being used. If it is mobile or in transit, the property on which it is located when an incident occurs should be identified as the specific property use. For example, 962 (paved public street) should be used for a mobile building in transit. If the mobile property has been fixed by placing it on a foundation or on jacks or has been placed in a location where it is being used as a structure, its use should be identified as the specific property use, which would be 419 (single-family dwelling).

The specific property use classifications in 6.3.3.1 through 6.3.3.9 are separated into nine major divisions. These divisions are further separated into subdivisions that are then further separated into detailed specific property use classifications. This hierarchical structure allows for different levels of detail (i.e., one, two, or three digits) in reporting, depending on the information available to the reporter.

The following alphabetical list is based on the logic and definitions presented in 6.3.3.1 through 6.3.3.9 for specific property use. It is designed to assist a user in selecting the proper classification for specific property use. A person using this list should review the classification assigned in 6.3.3.1 through 6.3.3.9 to ensure that there are no qualifications on the definition of the term.

711 Abattoir	322 Alcohol abuse center — limited care
687 Abrasives plant	Alcohol abusers: personal care of (see 322 and 459)
742 Academic robe mfg	721 Alcohol beverage distillery
221 Academy: boarding	721 Alcohol distilling: industrial
142 Academy: riding	721 Alcohol plant
761 Acetylene gas mfg	846 Alcoholic beverage storage
761 Acid plant	723 Ale mfg
764 Acrilan fiber mfg	846 Ale storage
776 Adding machine mfg	715 Alfalfa mill
595 Addressing firm	761 Alkali mfg
765 Adhesive mfg	111 Alley: bowling
591 Administrative office	758 Almanac publishing, printing
799 Advertising display mfg	524 Alteration shop: garment
754 Advertising sign mfg	772 Aluminum casting
774 Aerial cableway mfg	773 Aluminum hollowware mfg
928 Aerial tramway	772 Aluminum refining
791 Aeronautical instrument mfg	773 Aluminum stamping
311 Aged persons with 24-hour nursing staff	772 Aluminum wire drawing
Aged: personal care of (see division 25, 311, and 459)	784 Ambulance mfg, assembly
773 Agricultural fork mfg	Ambulatory care (see 341–343)
626 Agricultural laboratory	761 Ammonia synthesis
774 Agricultural machine mfg	761 Ammonium nitrate plant
812 Agricultural products: boxed	864 Ammonium nitrate storage
813 Agricultural products: loose	762 Ammunition mfg
818 Agricultural supply storage	552 Ammunition sales
774 Agricultural tractor mfg	123 Amphitheater
774 Air compressor mfg	113 Amusement hall, place, booth
774 Air condition mchry mfg	773 Anchor mfg
776 Air conditioner mfg: unit type	942 Anchorage
591 Air Force office	791 Anesthetic machine mfg
925 Air raid shelter	556 Animal care center
761 Air reduction	833 Animal feed storage: processed
773 Air rifle mfg	813 Animal feed storage: unprocessed
786 Aircraft assembly, mfg, repair	719 Animal food preparation
894 Aircraft freight terminal	715 Animal food, stock dry feed
886 Aircraft hangar	556 Animal hospital
173 Airline limousine terminal	
973 Airplane push area	
971 Airport approach	
841 Airport bulk plant	
981 Airport construction	
632 Airport control tower	
841 Airport gasoline distributing	
171 Airport passenger terminal	

719 Animal medicine preparing	449 Athletic club with sleeping	743 Bag mfg: burlap	811 Bean storage: bulk
726 Animal oil refinery: nonedible	141 Athletic club without sleeping	746 Bag mfg: leather	774 Bearing mfg: roller, ball, needle
556 Animal shop, supplies	981 Athletic field construction	754 Bagatelle board mfg	557 Beauty shop
663 Animal trapping, hunting	798 Athletic goods mfg	892 Bagged mineral products storage	754 Bedding plant
531 Antique shop	758 Atlas mfg	737 Bagging cord plant	743 Bedspread mfg
429 Apartment	611 Atomic fission, fusion materials mfg	716 Bakery	651 Bee raising
651 Apiary	531 Auction house	513 Bakery sales	723 Beer mfg
655 Apple growing	591 Auditor's office	719 Baking powder mfg	163 Beer parlor
776 Appliance assembling: elec	182 Auditorium	824 Bale storage: jute, hemp, sisal fiber	846 Beer storage
532 Appliance repair with sales	161 Automat	823 Bale storage: silk, synthetic fiber	742 Belt mfg, excl leather
538 Appliance repair without sales	795 Automatic piano mfg	822 Bale storage: wool, worsted	746 Belt mfg: leather
776 Appliance repair: elec with mfg	784 Automobile accessory mfg	821 Baled cotton storage	747 Belting mfg: rubber or synthetic
532 Appliance store	575 Automobile accessory sales	812 Baled hay outside	744 Belting plant: canvas
742 Apron mfg	873 Automobile accessory storage	855 Baled paper storage	732 Belting plant: cloth
152 Aquarium	784 Automobile assembly plant	774 Ball bearing mfg	744 Belting: leather tannery
594 Architect's office	573 Automobile body repairing, painting	747 Ball mfg: rubber or synthetic	767 Benzene mfg
123 Arena: sports	882 Automobile dealer vehicle storage	123 Ballpark	141 Bet-taking shop
761 Argon gas mfg	571 Automobile filling station	799 Ballpoint pen mfg	723 Beverage mfg: beer
591 Armed forces office	965 Automobile lot: sales	121 Ballroom	724 Beverage mfg: nonalcoholic
784 Armored car mfg, assembly	573 Automobile muffler shop	753 Bamboo products mfg	721 Beverage mfg: spirits
122 Armory hall	784 Automobile parts mfg	592 Bank	722 Beverage mfg: wines
582 Army and Navy store	873 Automobile parts storage	754 Bank furniture mfg	846 Beverage storage: alcoholic
591 Army office	573 Automobile repair shop	591 Bank: office only	832 Beverage storage: soft drink
677 Arsenic mining, quarrying	784 Automobile parts mfg	758 Banknote printing	514 Beverage store
779 Arsenic processing	873 Automobile parts storage	743 Banner mfg	785 Bicycle assembly and repair
152 Art gallery, incl sales	573 Automobile repair shop	754 Bar furniture mfg	552 Bicycle sales and repair
233 Art school	574 Automobile salesroom	163 Bar: alcoholic beverage	871 Billet storage
761 Artificial color mfg: food	877 Automobile salvage, wrecking	557 Barber shop	112 Billiard center
742 Artificial flower mfg	573 Automobile seat cover shop	561 Barber supplies store	754 Billiard table mfg
738 Artificial leather mfg	575 Automobile supply store	781 Barge building, repairing	774 Binder machine mfg
791 Artificial limb mfg	575 Automobile tire store	715 Barley milling, rolling	758 Binder mfg: paper, cardboard
761 Artificial manure mfg	573 Automobile top shop	815 Baru	758 Bindery, book
799 Artist brush mfg	922 Automobile tunnel	464 Barrack	113 Bingo hall
765 Artist color mfg	578 Automobile washing	753 Barrel plant: wood	792 Binocular mfg
799 Artist material mfg, excl paint	231 Automotive school	751 Barrel stave mfg	548 Binocular sales
765 Artist paint mfg	743 Awning mfg	751 Barrelhead mfg	621 Biological laboratory
563 Artist supply sales	526 Awning store	677 Barytes mining, quarrying	719 Birdseed mixing
688 Asbestos concrete product mfg	925 Awning, canopy	761 Barytes processing	716 Biscuit mfg
688 Asbestos fiber working	773 Axe mfg	773 Base metal cold pressing	674 Bituminous sand operation
678 Asbestos mining, quarrying	785 Axe mfg: cycle	753 Basket mfg	773 Blacksmith shop
688 Asbestos products plant	784 Axle mfg: motor vehicle	686 Batch plant: concrete or cement	758 Blank book mfg
767 Asphalt mfg	743 Baby blanket mfg	116 Bathhouse	776 Blanket mfg: elec
678 Asphalt mining, quarrying	787 Baby carriage mfg	937 Bathing beach	743 Blanket mfg: nonelec
774 Asphalt road machine mfg	742 Baby clothes mfg	747 Bathing cap mfg	771 Blast furuace
768 Asphalt-impregnated paper mfg	713 Baby food mfg: homogenized	771 Bathtub mfg: cast iron	762 Blasting agent mfg
459 Assisted-living facility	712 Baby food mfg: milk base	764 Bathtub mfg: plastic	761 Bleach mfg
591 Association office	711 Bacon curing	747 Battery case mfg	123 Bleachers for seating
122 Athletic cage	799 Badge mfg	776 Battery mfg	735 Bleaching plant
742 Athletic clothing mfg	773 Bag clasp mfg: base metal	739 Batching mill	726 Blended table oil mfg
		672 Bauxite mine, quarry	776 Blender mfg: elec, kitchen
		772 Bauxite processing	754 Blind mfg
		773 Bayonet mfg	742 Blouse mfg
		937 Beach	763 Blowmolding plastics
		142 Beach club	595 Blueprint firm
		715 Bean grinding, splitting	459 Board and care: residential

311 Boarding care with 24-hour nursing staff	732 Bootlace mfg: braided cotton	851 Builders' supply warehouse	832 Canned food product storage
439 Boarding house	733 Bootlace mfg: braided wool	688 Building face stone-works	713 Cannery: fruit, vegetable
449 Boarding house: over 16 roomers	734 Bootlace mfg: braided, mixed fibers	752 Building mfg: portable wooden	714 Cannery: seafood
221 Boarding school classroom bldg	677 Borate minerals mining, quarrying	755 Building paper mfg: fiber	744 Canvas belting plant
576 Boat accessory sales	761 Borate minerals processing	751 Building products mfg: wood	743 Canvas goods mfg
782 Boat mfg: 65 ft (20 m) and under	774 Boring machine mfg	555 Building supply store	526 Canvas goods store
885 Boat mooring, docking	756 Bottle cap seal mfg	835 Bulk coolers	826 Canvas storage
782 Boat repair: no sales	683 Bottle plant	833 Bulk food stuffs	742 Cap or hat mfg
576 Boat sales	683 Bottle stopper, glass mfg	843 Bulk LP-Gas plant	591 Capitol bldg
885 Boat storage	832 Bottled food product storage	839 Bulk molasses	774 Capstan mfg
885 Boathouse	774 Bottling mchry mfg	841 Bulk plant: petroleum	573 Car body repairing, painting
143 Boating club	724 Bottling plant	774 Bulldozer mfg	573 Car muffler shop
782 Boatyard: vessels 65 ft (20 m) and under	753 Bowl mfg: wood	753 Bung mfg	573 Car repair shop
753 Bobbin mfg	111 Bowling establishment	464 Bunkhouse	573 Car seat cover shop
785 Body mfg: cycle	552 Bowling shop	753 Buoy mfg: cork	573 Car top shop
784 Body mfg: motor vehicle	773 Box mfg: metal	743 Burlap bag mfg	922 Car tunnel
573 Body repair shop: motor vehicle	756 Box mfg: paper	824 Burlap storage, bales, bags	578 Car washing
672 Bog ore mining, quarrying	753 Box mfg: wood	784 Bus mfg, assembly	717 Caramel mfg
717 Boiled sweets mfg	141 Boys' club	883 Bus parking	768 Carbon black plant
688 Boiler gasket mfg	742 Brace suspender mfg	574 Bus sales	895 Carbon black storage
614 Boiler house	732 Braid mfg: cotton	925 Bus stop shelter	768 Carbon mfg
771 Boiler mfg: cast iron	734 Braid mfg: mixed fibers	173 Bus terminal	799 Carbon paper plant
781 Boiler mfg: marine	733 Braid mfg: wool or worsted	232 Business school: commercial	732 Carbonizing cotton
688 Boiler packing mfg: asbestos	737 Braided cord mfg	712 Butter mfg	687 Carborundum wheels mfg
774 Boilerhouse machine mfg	688 Brake lining mfg	835 Butter storage	784 Carburetor mfg: motor vehicle
773 Bolt mfg: metal	785 Brake mfg: cycle	799 Button mfg	774 Card can mfg for textile machine
612 Bomb assembly: nuclear	784 Brake mfg: motor vehicle	116 Cabana	756 Card mfg: index
773 Bomb case mfg	721 Brandy mfg	754 Cabinet shop	774 Cardboard box machine mfg
762 Bomb filling	773 Brass hollowware	774 Cable car mfg	756 Cardboard box or file mfg
925 Bomb shelter	772 Brass refining	775 Cable mfg: insulated electric	732 Carding cotton
726 Bone oil refining	773 Brass stamping	634 Cable terminal: telephone	562 Carpenter equipment sales
799 Bone products mfg	772 Brass wire drawing	634 Cable: telephone, telegraph	796 Carpet cleaning, dyeing
719 Bone scraping, crushing	742 Brassiere mfg	161 Café	826 Carpet storage
758 Book bronzing, gilding, edging	716 Bread mfg	161 Cafeteria	536 Carpet store
758 Book mfg: blank	715 Breakfast food mfg	122 Cage: athletic	732 Carpet, rug mfg: cotton
758 Book publishing, printing	723 Brewery	716 Cake mfg	734 Carpet, rug mfg: mixed fibers
758 Book repair	774 Brick making machine mfg	719 Cake mix mfg	733 Carpet, rug mfg: wool
758 Bookbinding	682 Brick mfg: glass	776 Calculating machine mfg	516 Carry-out food store
774 Bookbinding machine mfg	681 Brick mfg: heat resisting	792 Camera equipment plant	756 Carton mfg
141 Bookmaker place: gambling	681 Brick plant: nonglass	792 Camera mfg	855 Carton storage
541 Bookstore: new, used	921 Bridge	553 Camera store	762 Cartridge filling
741 Boot mfg, excl vulcanized rubber	676 Brine pit	784 Camping trailer mfg	762 Cartridge works
747 Boot mfg: vulcanized rubber	768 Briquette mfg	935 Campsite with utilities	773 Carving fork, knife mfg
523 Boot repair	895 Briquette storage	773 Can mfg: metal	773 Casement window mfg: metal
753 Boot tree mfg	773 Bronze hollowware	726 Candle mfg	773 Cash box mfg
523 Bootblack stand	772 Bronze refining	726 Candle plant	776 Cash register mfg
924 Booth: toll	773 Bronze stamping	717 Candy mfg	144 Casino
	799 Broom mfg	513 Candy shop	753 Cask head mfg
	931 Brush growth outdoors	753 Cane container, products mfg	753 Cask mfg
	799 Brush mfg	717 Cane processing (sugar or beet)	753 Casket mfg
	773 Bucket mfg: metal		876 Casket storage and display: metal
	753 Bucket mfg: wood		852 Casket storage and display: wood
	773 Buckle mfg: base metal		
	794 Buckle mfg: precious metal		



- 771 Cast iron products mfg  
 726 Castor oil refining  
 584 Catalogue store  
 719 Catering  
 131 Cathedral  
 776 Cathode ray tube mfg  
 651 Cattle raising  
 776 Ceiling fixture mfg: elec  
 361 Cell block: prison for men  
 362 Cell block: prison for women  
 925 Cellar: cyclone  
 762 Cellulose nitrate plastic fabricating  
 762 Cellulose nitrate plastic mfg  
 762 Cellulose nitrate plastic reclaiming  
 685 Cement mill, plant  
 892 Cement storage  
 934 Cemetery  
 591 Central forces office  
 634 Central office: telephone  
 675 Ceramic clay extraction from earth  
 716 Cereal filler mfg  
 715 Cereal plant  
 774 Chain mfg: metal with rollers  
 773 Chain mfg: metal without rollers  
 754 Chair mfg: any material  
 928 Chairlift  
 675 Chalk extraction from earth  
 688 Chalk product mfg  
 942 Channel  
 131 Chapel: church  
 134 Chapel: funeral  
 661 Charcoal burning in forest  
 768 Charcoal mfg  
 768 Charcoal processing  
 895 Charcoal storage  
 784 Chassis mfg: motor vehicle  
 798 Checkerboard mfg  
 712 Cheese factory: natural, processed  
 742 Chefs' clothing mfg  
 621 Chemical laboratory  
 761 Chemical mfg: general  
 677 Chemical mining  
 761 Chemical salts mfg  
 861 Chemical storage: basic industrial  
 862 Chemical storage: hazardous  
 798 Chess set mfg  
 717 Chewing gum mfg  
 725 Chewing tobacco mfg  
 211 Child day care: 4 hours or less  
 926 Children's playhouse  
 567 Chimney cleaning firm  
 681 Chimney liner mfg  
 681 Chimney pipes, clay mfg  
 684 China decorating, repair, mfg  
 684 China ornaments mfg  
 684 China pottery mfg  
 544 China shop  
 893 China storage  
 593 Chiropodist's office  
 593 Chiropractor's office  
 773 Chisel mfg  
 717 Chocolate factory  
 758 Christmas card printing  
 131 Church  
 133 Church meeting hall  
 591 Church office bldg  
 544 Church supply store  
 722 Cider mfg: hard  
 724 Cider mfg: soft  
 753 Cigar box mfg  
 725 Cigar mfg  
 838 Cigar storage  
 542 Cigar store  
 746 Cigarette case mfg  
 755 Cigarette paper mfg  
 725 Cigarette plant  
 838 Cigarette storage  
 726 Cinnamon oil mfg  
 775 Circuit breaker mfg  
 773 Cistern mfg  
 771 Cistern mfg: cast iron  
 141 City club  
 616 City gas mfg  
 591 City hall, office bldg  
 633 Civil Defense communications center  
 714 Clam packing  
 675 Clay extraction from earth  
 681 Clay flooring tile mfg  
 893 Clay products storage  
 681 Clay roofing tile mfg  
 681 Clay screening, preparing  
 743 Cleaning cloth mfg  
 742 Clerical vestment mfg  
 341 Clinic  
 793 Clock mechanism, part mfg  
 793 Clock mfg  
 741 Clog footwear mfg  
 732 Cloth belting plant  
 738 Cloth coating processes  
 742 Cloth lining mfg  
 825 Cloth storage  
 522 Clothing accessory sales  
 524 Clothing alteration shop  
 742 Clothing plant  
 796 Clothing repair  
 521 Clothing sales, rental  
 141 Club: city  
 142 Club: country  
 162 Club: night  
 143 Club: yacht, boating  
 785 Clutch mfg: cycle  
 784 Clutch mfg: motor vehicle  
 768 Coal distillation  
 671 Coal drying  
 671 Coal mining  
 767 Coal oil mfg  
 671 Coal prospecting  
 895 Coal storage  
 768 Coal tar oils mfg  
 742 Coat mfg  
 755 Coated paper mfg  
 738 Coating cloth  
 688 Coating paper with abrasives  
 768 Coating paper with asphalt, tar  
 799 Coating paper with carbon  
 792 Coating paper with sensitizer  
 523 Cobbling  
 721 Cocktail mfg  
 717 Cocoa butter mfg  
 717 Cocoa processing  
 739 Coconut fiber spinning, weaving  
 726 Coconut oil refining  
 726 Cod liver oil refining  
 655 Coffee growing  
 715 Coffee mfg: instant  
 715 Coffee roasting  
 753 Coffin mfg  
 876 Coffin storage and display: metal  
 852 Coffin storage and display: wood  
 794 Coin mfg  
 746 Coin purse mfg  
 564 Coin-operated dry cleaning  
 564 Coin-operated laundry  
 739 Coin mat mfg  
 768 Coke by-products plant  
 768 Coke mfg  
 616 Coke oven in gas works  
 771 Coke oven in iron, steel plant  
 895 Coke storage  
 835 Cold storage  
 742 Collar mfg  
 926 Collection shed (box)  
 241 College classroom bldg  
 464 College dormitory  
 221 College preparatory school: boarding  
 215 College preparatory school: day  
 783 Colliery rail tub mfg  
 774 Colliery winding gear mfg  
 765 Color mfg: artist  
 774 Comb mfg, for textile machine  
 732 Combing cotton  
 841 Combustible liquids tank storage  
 862 Commercial explosives storage  
 719 Commercial kitchen  
 758 Commercial lithographing  
 758 Commercial printing  
 232 Commercial school  
 591 Commodity broker, exchange  
 776 Communication equip  
 241 Community college classroom building  
 534 Compact disc (CD) store  
 774 Composing room equip mfg  
 821 Compress: cotton  
 774 Compressor mfg  
 644 Compressor station: gas  
 635 Computer center  
 776 Computer mfg: elec  
 545 Computer sales  
 712 Concentrates: dairy  
 182 Concert hall  
 686 Concrete batch plant  
 681 Concrete block mfg  
 774 Concrete mixer mfg  
 686 Concrete mixing plant  
 688 Concrete pipe mfg  
 686 Concrete ready-mix plant  
 719 Condiment mfg  
 761 Confectioners' color mfg  
 513 Confectionery sales  
 574 Construction equipment sales  
 884 Construction machinery storage  
 981 Construction site  
 591 Consultant's office  
 594 Consulting engineer's office  
 773 Container mfg: metal  
 756 Container mfg: paper  
 761 Continuous filament yarn mfg  
 594 Contractor's office: permanent  
 808 Contractor's shed  
 774 Contractors' machine mfg  
 311 Convalescent care with 24-hour nursing staff  
 464 Convent  
 928 Conveyor  
 774 Conveyor mfg  
 716 Cookie mfg  
 751 Cooperage stock mfg  
 753 Coopering  
 773 Copper hollowware mfg  
 672 Copper mine, quarry

772 Copper refining	753 Crate mfg: wood	254 Day care in commercial property or as a dedicated facility	582 Discount store under 10,000 ft
773 Copper stamping, cold pressing	774 Crawler tractor mfg	Day nursery school over 4 hours (see 251–253)	766 Disinfectant mfg: pharmaceutical
772 Copper wire drawing	765 Crayon mfg	211 Day nursery school: 4 hours or less	761 Disinfectant mfg: commercial
775 Cord mfg: insulated electric	712 Creamery	773 Deed box mfg	687 Disk mfg: grinding, abrasive
737 Cordage plant	591 Credit company office	718 Deep-fat frying	754 Display case mfg
721 Cordial mfg	134 Crematorium	591 Defense forces office	768 Distillation: coal
662 Cordwood storage	751 Creosote impregnating	896 Defense storage	768 Distillation: coal tar
753 Cork grinding	811 Crib corn	776 Dehumidifier mfg: unit type	767 Distillation: petroleum tar
753 Cork plant	655 Crops	713 Dehydration plant	721 Distillery: alcohol
753 Cork products mfg	681 Crucible mfg: fireclay, graphite	516 Delicatessen	646 District heating system
811 Corn crib	767 Crude oil processing	981 Demolition site: other than structure	754 Divan bed mfg
726 Corn oil refining	674 Crude oil storage at well	791 Dental supply mfg	961 Divided highway
715 Corn processing	674 Crude oil well, extracting	593 Dental surgeon's office	898 Dock
232 Correspondence school	842 Cryogenic gas storage	342 Dentist office — over 3 patients	885 Dock for boats
756 Corrugated paper fabricating	776 Crystal mfg: elec	593 Dentist's office	342 Doctor office — over 3 patients
755 Corrugated paper mfg	711 Curing bacon	891 Department store storage	593 Doctor's office
742 Corset mfg	114 Curling rink	581 Department store with furniture	636 Document center
766 Cosmetic mfg	796 Curtain cleaning, dyeing	583 Department store without furniture	798 Doll mfg
866 Cosmetic storage	743 Curtain mfg	174 Depot: railroad, street-level	682 Domestic glassware mfg
561 Cosmetic supply store	526 Curtain shop	647 Desalting plant	684 Domestic pottery, china mfg
544 Costume jewelry sales	747 Cushion mfg: rubber or synthetic	233 Designers' school	753 Domestic woodware mfg
742 Costume mfg	682 Cut glass mfg	364 Detention camp: men	773 Door frame mfg: metal
799 Costume novelties, jewelry mfg	773 Cut nail mfg	363 Detention home: juvenile	773 Door mfg: metal
521 Costume rental store	741 Cut sole mfg	362 Detention home: women	751 Door mfg: wood
732 Cotton bag mfg	773 Cutlery mfg: household	726 Detergent mfg	751 Door or window screen mfg: wood
821 Cotton compress storage	791 Cutlery mfg: surgical, dental	869 Detergent storage	464 Dormitory: bunkhouse
735 Cotton finishing	544 Cutlery store	762 Detonator mfg	462 Dormitory: fraternity or sorority
731 Cotton gin	774 Cutting machine mfg	321 Developmental disability — limited care	464 Dormitory: military
732 Cotton mill: cloth or yarn	785 Cycle mfg	621 Diagnostic laboratory	464 Dormitory: nurses' quarters
732 Cotton mill: full process	552 Cycle shop	794 Diamond cutting	464 Dormitory: religious
732 Cotton mill: part process	925 Cyclone cellar	544 Diamond sales	464 Dormitory: school, college
732 Cotton mill: reworking	761 Cyclopropane gas mfg	796 Diaper service plant	449 Dormitory-type hotel
737 Cotton rope, cord mfg	776 Dairy appliance mfg: elec	776 Dictating equip mfg	716 Doughnut mfg
821 Cotton storage: bales	712 Dairy bottling/cartoning	538 Dictating equipment repair without sales	773 Drag mfg: metal
731 Cottonseed house	774 Dairy machinery mfg: nonelec	532 Dictating equipment sales	774 Dragline excavator mfg
726 Cottonseed oil plant	515 Dairy quick-freeze store	772 Die casting	981 Drainage project: land
811 Cottonseed storage: bulk	515 Dairy store	758 Die stamping: paper	743 Drapery mfg
741 Counter shoe mfg	121 Dance hall	774 Diesel engine mfg	526 Drapery store
743 Counterpane mfg	233 Dance school	161 Diner	771 Drawing mill: ferrous
142 Country club	775 Dashboard instrument mfg	161 Dining hall	541 Drawing supply store
811 Country grain elevator	756 Data processing card mfg	162 Dinner theater	981 Dredging other than mining
513 Country store	635 Data processing center	758 Directory publishing, printing	742 Dress mfg
591 County office	776 Data processing machine mfg	964 Dirt road	742 Dressing gown mfg
361 County workhouse: men	799 Data stamp mfg	633 Disaster control center	524 Dressmaking shop
362 County workhouse: women	717 Date mfg: stuffed	583 Discount store over 10,000 ft	776 Drill mfg: elec
783 Coupler mfg: automatic railroad	255 Day care associated with residential property, licensed		674 Drilling for oil or gas
773 Coupling mfg: metal	256 Day care associated with residential property, unlicensed		775 Drink mchry mfg
155 Courthouse			164 Drive-in eating place
743 Cover mfg			184 Drive-in theater
651 Cow raising			233 Driving school
714 Crab packing			773 Drop forge metal pieces mfg
773 Crane hook mfg			
775 Crane mfg: elec			
774 Crane mfg: nonelec			
884 Crane storage: mobile			

- 774 Drop hammer machine mfg  
 773 Drop stamped metal pieces mfg  
 322 Drug abuse center — limited care  
     Drug abusers: personal care of (see 322 and 459)  
 582 Drug store: no pharmacist  
 543 Drug store: pharmacist on duty  
 766 Drugs mfg  
 866 Drugs storage  
 773 Drum mfg: metal  
 753 Drum mfg: wood  
 566 Dry cleaning pick-up shop  
 796 Dry cleaning plant  
 564 Dry cleaning: self-service  
 781 Dry dock  
 825 Dry goods storage  
 526 Dry goods store  
 761 Dry ice mfg  
 776 Dryer mfg: domestic  
 811 Dryer: corn, grain  
 865 Drying oil storage  
     Dump (see 911–915)  
 883 Dump truck storage  
 742 Dungaree mfg  
 595 Duplicating firm  
 776 Duplicating machine mfg  
 799 Duplicator mfg: not machine  
 774 Dust extraction mchry mfg  
 419 Dwelling: 1- or 2-family  
 429 Dwelling: over 2 units  
 761 Dye intermediates mfg  
 774 Dye machine mfg: textile  
 735 Dyeing plant: textile  
 684 Earthenware decorating, repair, mfg  
 893 Earthenware storage  
 883 Earthmoving equipment storage  
 774 Earth-moving machine mfg  
 711 Edible fat mfg  
 719 Egg processing  
 651 Egg production  
 732 Elastic mfg: cotton  
 734 Elastic mfg: mixed, other fibers  
 733 Elastic mfg: wool or worsted  
 763 Elastomers mfg: synthetic  
 776 Electric appliance mfg  
 532 Electric appliance repair with sales  
 538 Electric appliance repair without sales  
 532 Electric appliance sales  
 875 Electric appliance storage  
 791 Electric control device mfg  
 775 Electric distribution equip mfg  
 642 Electric distribution system  
 775 Electric equip assembling  
 625 Electric laboratory  
 776 Electric lamp mfg  
 776 Electric light mfg: all types  
 775 Electric mchry mfg  
 776 Electric mchry repairs  
 874 Electric mchry storage  
 791 Electric measuring instrument mfg  
 775 Electric motor mfg  
 776 Electric plug mfg  
 791 Electric recording instrument mfg  
 573 Electric repair shop: motor vehicle  
 776 Electric sign mfg  
 776 Electric socket mfg  
 776 Electric stove mfg  
 642 Electric substation  
 875 Electric supply storage  
 776 Electric switch mfg  
 775 Electric switchgear mfg  
 776 Electric tool mfg  
 775 Electric traction motor mfg  
 775 Electric transmission equip mfg  
 642 Electric transmission system  
 642 Electric vault  
 615 Electric-generating plant  
 774 Electrode mfg: welding  
 791 Electro-medical equip mfg  
 791 Electronic control device mfg  
 625 Electronic laboratory  
 791 Electronic measuring device mfg  
 776 Electronic navigational aid mfg  
 545 Electronic specialty store  
 682 Electronic tube, glass envelope  
 758 Electrotyping: commercial  
 757 Electrotyping: newspaper or magazine  
 213 Elementary school  
 176 Elevated railway station  
 921 Elevated structure  
 775 Elevator mfg: elec  
 774 Elevator mfg: nonelec  
 816 Elevator: grain  
 799 Emblem mfg  
 794 Emerald cutting  
 633 Emergency communications center  
 341 Emergency medical clinic  
 687 Emery wheel mfg  
 765 Enamels mfg  
 784 Engine assembly: motor vehicle  
 688 Engine gasket mfg: asbestos  
 786 Engine mfg: aircraft  
 774 Engine mfg: industrial  
 774 Engine mfg: marine (see 781 and 782)  
 784 Engine mfg: motor vehicle  
 688 Engine packing mfg: asbestos  
 786 Engine repair: aircraft  
 774 Engine repair: industrial  
     Engine repair: marine (see 781 and 782)  
 573 Engine repair: motor vehicle  
 774 Engine test cell  
 594 Engineering office  
 561 Engineering supply sales  
 774 Engineers' tools mfg: metal  
 794 Engraving precious metal  
 758 Engraving printing plates  
 774 Envelope machine mfg  
 756 Envelope mfg  
 513 Epicure shop  
 775 Escalator mfg  
 726 Essential oil mfg  
 758 Etching printing plates  
 721 Ethyl alcohol distilling  
 774 Excavating machine mfg  
 774 Excavator mfg  
 751 Excelsior mfg  
 853 Excelsior storage  
 591 Exchange, clearing-house  
 634 Exchange: telephone, telegraph  
 122 Exhibit hall  
 762 Explosive mfg  
 558 Explosive sales: retail  
 862 Explosive storage  
 591 Exporter's office  
 122 Exposition hall  
 567 Exterminator firm  
 724 Extract mfg: flavoring  
 763 Extruding plastics  
 763 Extrusion compounds mfg: plastic  
 774 Extrusion machine mfg  
 791 Eye mfg: artificial  
 548 Eyeglass fitting  
 741 Fabric footwear  
 732 Fabric mfg: cotton  
 734 Fabric mfg: mixed, other fibers  
 733 Fabric mfg: wool or worsted  
 739 Fabric waste recovering  
 774 Fabricated steel mfg: industrial  
 141 Faculty club  
 123 Fairground grandstand  
 925 Fallout shelter  
 776 Fan mfg: unit type  
 655 Farm crop  
 574 Farm implement sales  
 818 Farm implement storage  
 811 Farm silo  
 513 Farm stand  
 818 Farm store storage  
 464 Farm workers' barrack  
 591 Fashion designer's office  
 726 Fat distillation: nonedible  
 711 Fat refining: edible  
 711 Fat rendering: edible  
 726 Fat splitting: nonedible  
 754 Feather products mfg  
 754 Featherbed mfg  
 592 Federal Reserve bank  
 811 Feed storage: bulk  
 818 Feed store  
 715 Feed: animal or poultry  
 745 Fellmongery  
 742 Felt hat mfg  
 732 Felt making: cotton  
 734 Felt making: mixed fibers  
 733 Felt making: wool or worsted  
 745 Felt mfg: hair  
 733 Felt mfg: pressed wool  
 733 Felt needleloom mfg  
 853 Felt storage  
 738 Feltbase mfg  
 751 Fence mfg: wood  
 754 Fender mfg: fireplace  
 771 Ferro-chrome mfg  
 772 Ferro-molybdenum mfg  
 772 Ferro-silicon mfg  
 772 Ferro-tungsten mfg  
 177 Ferry terminal  
 761 Fertilizer mixing, bagging  
 554 Fertilizer sales  
 818 Fertilizer storage  
 864 Fertilizer storage  
 755 Fiber building paper mfg

734 Fiber mfg: staple	558 Fireworks sales, stands	689 Fluorspar ore process-	773 Frying pan mfg without
764 Fiber mfg: synthetic	862 Fireworks storage	ing	heating element
853 Fiber products storage	714 Fish canning, process-	747 Foam rubber mfg	717 Fudge mfg
756 Fiberboard packing case	ing	747 Foam rubber processing	841 Fuel dispensing, bulk
mfg	665 Fish farms	764 Foamed plastics fabrica-	768 Fuel mfg: packaged
753 Fiberboard plant	665 Fish hatchery	tion	762 Fuel mfg: rocket
853 Fiberboard storage	726 Fish oil refining	717 Fondant mfg	767 Fuel oil mfg
853 Fiber-glass insulation	714 Fish packing, preserv-	834 Food locker plant	784 Fuel pump mfg: motor
storage	ing	774 Food mchry mfg	vehicle
685 Fibro cement mfg	714 Fish salting, drying,	719 Food processing: animal	134 Funeral chapel, parlor
931 Field	processing	832 Food product storage:	742 Fur apparel mfg
655 Field crop	513 Fish store	canned, bottled	742 Fur hat mfg
122 Fieldhouse	773 Fishhook mfg	833 Food product storage:	745 Fur mat mfg
756 File mfg	142 Fishing club	loose or bagged	742 Fur muff mfg
756 File mfg: cardboard	737 Fishing net mfg	831 Food product storage:	741 Fur product mfg: foot-
773 File mfg: insulated	611 Fission material mfg	packaged, dry	wear
754 Filing cabinet mfg	611 Fission products	511 Food store over	742 Fur product mfg: wear-
571 Filling station: gasoline,	handling	10,000 ft	ing apparel
public	754 Fixture mfg: furniture	512 Food store under	745 Fur product plant
577 Filling station: marine	743 Flag mfg	10,000 ft	828 Fur product storage
572 Filling station: vehicle	944 Flammable gas loading	513 Food store: specialty	745 Fur rug mfg
fuel, private	area for ships	832 Food stuffs: processed,	745 Fur sorting, dressing
186 Film exchange	944 Flammable liquid load-	canned, bottled	828 Fur storage
792 Film fabrication: photo-	ing area for ships	833 Food stuffs: processed,	525 Fur store
graphic	841 Flammable liquid tank	loose	663 Fur trapping, hunting
797 Film processing	storage	712 Food with milk base	651 Fur-bearing animal rais-
186 Film repairing, renovat-	645 Flammable or combus-	593 Foot care center	ing
ing	tible liquid pipeline	747 Footwear mfg: rubber,	774 Furnace mfg
186 Film screening studio	762 Flare mfg	vulcanized	532 Furnace sales
868 Film storage: photo-	776 Flashlight mfg	661 Forestry	754 Furniture mfg
graphic	429 Flat	773 Forged metal pieces	791 Furniture mfg: surgical,
116 Filter area: swimming	682 Flat glass mfg	mfg: drop	dental
pool	773 Flat spring mfg	774 Forging machine mfg	537 Furniture repair shop
743 Filter cloth mfg	725 Flavoring extract mfg	773 Fork mfg: carving	852 Furniture storage
647 Filtration plant: water	737 Flax rope, cordage	794 Fork mfg: precious	531 Furniture store
761 Fine chemicals mfg	product mfg	metal	743 Furniture upholstery
827 Finished leather goods	824 Flax storage: bales, bags	774 Forklift truck mfg	525 Furrier
storage	734 Flax thatching	771 Foundry: ferrous	762 Fuse mfg: explosive
867 Finished rubber prod-	883 Fleet parking	772 Foundry: nonferrous	611 Fusion material mfg
ucts storage	776 Flexible shaft tool mfg	799 Fountain pen mfg	611 Fusion products
826 Finished textile storage	771 Flexible tube mfg: iron	785 Frame mfg: cycle	handling
852 Finished wood products	or steel	141 Fraternal club without	741 Gaiter mfg
storage	632 Flight control center	sleeping	152 Gallery: art, incl sales
735 Finishing plant: textile	971 Flight, flying	462 Fraternity house	747 Galoshes mfg
633 Fire alarm headquarters	753 Float mfg: cork	834 Freeze locker	144 Gambling place
776 Fire alarm mfg, incl	945 Flood control culvert	776 Freezer mfg: unit type	711 Game curing, salting
nonelec	567 Floor cleaning firm	783 Freight car mfg: railway	711 Game dressing, process-
633 Fire alarm system:	536 Floor covering store	898 Freight pier	ing
municipal	681 Floor tile mfg: clay	894 Freight terminal	798 Game mfg
633 Fire communications	738 Floor tile mfg: linoleum	718 French frying potatoes	663 Game propagation
center	738 Flooring mfg: linoleum	765 French polish mfg	551 Game store: recrea-
774 Fire control device mfg	747 Flooring mfg: rubber	834 Frozen food locker	tional
591 Fire department admin-	751 Flooring mfg: wood	713 Fruit canning	113 Games of chance for
istrative office	449 Flophouse	713 Fruit dehydrating,	amusement
888 Fire hall	547 Florist's shop	quick-freezing	144 Gaming place
751 Fire retardant impreg-	715 Flour milling, blending	661 Fruit gathering: wild	574 Garage with motor vehi-
nating plant	837 Flour storage: bulk	655 Fruit growing	cle sales
888 Fire station	661 Flower gathering: wild	713 Fruit juice mfg	883 Garage: city vehicle
681 Fireclay sanitary ware	547 Flower growing	713 Fruit mfg: candied peel	parking
mfg	799 Flower plants: artificial	717 Fruit mfg: crystallized	882 Garage: commercial
784 Firefighting vehicles mfg	547 Flower sales	657 Fruit packing as picked	parking
773 Fireplace tool mfg	776 Fluorescent fixture mfg	713 Fruit ripening	883 Garage: fleet parking
662 Firewood storage	682 Fluorescent tube mfg	513 Fruit store	573 Garage: repair
762 Fireworks mfg	677 Fluorspar ore mining,	776 Frying pan mfg with	881 Garage: residential
	quarrying	heating element	parking

648 Garbage disposal plant	682 Glass product mfg	747 Gutta-percha products	776 Heating apparatus mfg: elec
648 Garbage reduction plant	893 Glass products storage	121 Gymnasium	774 Heating mchry mfg
655 Garden	893 Glass storage	798 Gymnastic equipment mfg	646 Heating: district, steam
429 Garden apartment	544 Glass store	688 Gypsum board mfg	574 Heavy equipment sales
737 Garden net mfg	792 Glasses mfg incl frame	678 Gypsum mining, quarrying	611 Heavy water plant
547 Garden shop	682 Glassware mfg	688 Gypsum products mfg	172 Heliport
554 Garden supplies store	786 Glider mfg, assembly, repair	892 Gypsum storage	172 Helistop
774 Garden tractor mfg	744 Glove leather tannery	522 Haberdashery store	343 Hemodialysis unit
826 Garment storage	736 Glove mfg: knitted	776 Hair clipper mfg	735 Hemp finishing
742 Garter mfg	742 Glove mfg: leather	766 Hair dressing mfg	734 Hemp spinning: soft
532 Gas appliance sales	747 Glove mfg: rubber	557 Hair dressing shop	824 Hemp storage: bales, bags
774 Gas compressor mfg	765 Glue mfg	733 Hair felt mfg: pressed	737 Hemp, cord, rope, cable mfg
774 Gas cutting mchry mfg	767 Glycerine mfg	745 Hair product plant	661 Herb gathering: wild
776 Gas discharge lamp mfg	794 Gold assaying, smelting	828 Hair product storage	827 Hide storage
982 Gas field	672 Gold mine, quarry	766 Hair tonic mfg	744 Hide tanning, dressing
981 Gas main construction	775 Golf cart mfg: elec	799 Hairnet mfg	545 Hi-fi store
616 Gas mfg: fuel	142 Golf club	182 Hall: concert	215 High school
761 Gas mfg: industrial	981 Golf course construction	161 Hall: dining	981 Highway construction
644 Gas pipeline	552 Golf shop	888 Hall: fire	921 Highway overpass
644 Gas pipeline compressor station	758 Government printing office	141 Hall: lodge	961 Highway: limited access
616 Gas plant: manufactured, fuel	213 Grade school	112 Hall: pool	153 Historical building
644 Gas purification station	774 Grader machine mfg	182 Hall: public	551 Hobby shop
681 Gas retort mfg	816 Grain elevator	711 Ham curing	123 Hockey rink in arena
983 Gas utility right of way	715 Grain mill	774 Hammer machine mfg	114 Hockey rink: fixed use
774 Gas welding machinery mfg	811 Grain stack	773 Hammer mfg	773 Hoe mfg
674 Gas well	811 Grain storage: bulk	737 Hammock mfg	651 Hog raising
861 Gases, industrial nonhazardous	811 Granary	753 Hamper mfg	775 Hoist mfg: elec
862 Gases, industrial, hazardous	123 Grandstand	773 Hand tool mfg	774 Hoist mfg: nonelec
688 Gasket mfg	675 Granite quarrying, mining	746 Handbag mfg	681 Hollow tile mfg
774 Gasoline engine mfg	688 Granite working	742 Handkerchief mfg	776 Hollowware mfg with heating element
767 Gasoline mfg	688 Graphite products mfg	753 Handle mfg: hardwood	773 Hollowware mfg without heating element
572 Gasoline service station: private	773 Grapnel mfg	785 Handlebar mfg: cycle	311 Home for aged with 24-hour nursing staff
571 Gasoline service station: public	675 Gravel extraction from earth	886 Hangar	567 Home maintenance firm
841 Gasoline storage	964 Gravel road	826 Hanging garment storage	533 Home repair supply sales
842 Gasometer	931 Grazing land	773 Hardware mfg	134 Home: funeral
974 Gateway: aircraft	845 Grease storage in containers	873 Hardware storage	713 Honey processing
774 Gauge mfg: metal	547 Greenhouse	533 Hardware store	651 Honey production, apiary
784 Gear box mfg: motor vehicle	751 Greenhouse mfg: wood	753 Hardwood turning plant	784 Hood mfg: motor vehicle
785 Gear mfg: cycle	758 Greeting card mfg	746 Harness mfg	742 Hood mfg: wearing apparel
765 Gelatin mfg	687 Grinding abrasives mfg	774 Harrow mfg, incl self-propelled	773 Hook mfg
678 Gems: mining, natural	687 Grindstone mfg	742 Hat mfg	715 Hop kiln, curing
591 General business office	715 Grist mill	796 Hat reblocking, repair	775 Horn mfg: elec
891 General storage warehouse	831 Grocery storage: crated, boxed	522 Hat store	651 Horse barn/stable
615 Generating plant: electric	833 Grocery storage: loose, bagged	651 Hatchery: poultry	739 Horsehair spinning, weaving
775 Generator mfg	511 Grocery store over 10,000 ft	745 Hatters fur mfg	773 Horseshoe mfg
544 Gift shop	512 Grocery store under 10,000 ft	655 Hay field	764 Hose mfg: plastic
721 Gin mfg	677 Guano harvesting	811 Hay stack	747 Hose mfg: rubber
731 Gin: cotton	709 Guano processing	815 Hay storage in barn	736 Hosiery mfg: knitted
141 Girls' club	661 Gum gathering: natural	811 Hay storage: bulk, not in barn	522 Hosiery store
683 Glass container mfg	717 Gum mfg: chewing	818 Hay store	332 Hospice
682 Glass cutting	762 Gun cotton mfg	Hazardous materials waste disposal (see 913-915)	331 Hospital
682 Glass fiber fabricating, mfg	773 Gun mfg	141 Health club	561 Hospital supply sales
682 Glass fiber processing	552 Gun shop	766 Health salt mfg	547 Hot house
	762 Gunpowder works	646 Heat transfer system	
		784 Heater mfg: motor vehicle	

- 773 Hot pressed metal pieces mfg  
449 Hotel  
754 Hotel furniture mfg  
361 House of correction: men  
362 House of correction: women  
419 House: 1- or 2-family  
754 Household furniture mfg  
852 Household furniture storage  
429 Housekeeping apartment  
776 Humidifier mfg: unit type  
663 Hunting  
142 Hunting club  
715 Husking grain  
685 Hydraulic cement mfg  
774 Hydraulic mchry mfg  
622 Hydraulics laboratory  
761 Hydrogen gas mfg  
761 Hydrogen sulfide gas mfg  
726 Hydrogenation  
712 Ice cream plant  
515 Ice cream shop  
515 Ice cream stand: quick-freeze  
835 Ice cream warehouse  
897 Ice dispenser: coin-op  
719 Ice harvesting  
897 Ice houses  
719 Ice plant: mfg, natural  
114 Ice skating rink  
897 Ice storage  
799 Identification tag mfg  
767 Illuminating oil mfg  
591 Importer's office  
682 Incandescent lamp plant  
648 Incinerator: industrial  
648 Incinerator: municipal  
756 Index card mfg  
798 Indoor game mfg  
591 Industrial administrative office  
862 Industrial chemical storage: hazardous  
861 Industrial chemical storage: nonhazardous  
633 Industrial communications center  
761 Industrial gas mfg  
861 Industrial gases: nonhazardous  
862 Industrial hazardous chemical storage  
591 Industrial loan institution  
984 Industrial plant yard  
774 Industrial tractor mfg  
231 Industrial training school  
774 Industrial valve mfg  
742 Infantwear mfg  
331 Infirmary: hospital type  
771 Ingot mold mfg: cast iron  
871 Ingot storage  
765 Ink mfg: printers  
765 Ink mfg: writing  
799 Ink pad mfg  
865 Ink storage  
449 Inn with sleeping  
163 Inn without sleeping accommodations  
747 Inner tube mfg  
761 Inorganic chem mfg  
761 Insecticides mfg  
791 Instrument mfg: electric, electronic  
791 Instrument mfg: measuring, control  
795 Instrument mfg: musical  
561 Instrument sales: professional  
775 Insulated wire, cable mfg  
688 Insulation mfg: asbestos, stone  
682 Insulation mfg: glass fiber  
753 Insulation mfg: wood, cork, sawdust  
684 Insulator mfg: pottery, clay, porcelain  
591 Insurance office  
214 Intermediate school  
774 Internal combustion engine mfg  
591 Investment firm office  
771 Iron billet, bloom mfg  
771 Iron conversion  
771 Iron foundry  
776 Iron mfg: domestic, elec  
672 Iron ore mining, quarrying  
771 Iron products mfg: cast  
677 Iron pyrites mining, quarrying  
761 Iron pyrites processing  
771 Iron smelting, refining  
773 Iron stamping, cold pressing  
871 Iron storage: basic forms  
771 Iron: basic products mfg  
672 Ironstone mining, quarrying  
773 Ironwork mfg  
981 Irrigation project construction  
774 Jack mfg  
742 Jacket mfg  
361 Jail: men  
362 Jail: women  
713 Jam mfg  
765 Japan drier mfg  
744 Japanning leather  
684 Jar mfg: earthenware  
683 Jar mfg: glass  
713 Jelly mfg  
794 Jewelry fabricating, mfg  
544 Jewelry shop  
798 Jigsaw puzzle mfg  
758 Job printing  
155 Judicial hall  
164 Juice bar  
241 Junior college classroom bldg  
214 Junior high school  
877 Junkyard  
743 Jute bag mfg  
737 Jute cord plant  
737 Jute rope, cord mfg  
734 Jute spinning, sorting, weaving  
824 Jute storage: bales, bags  
363 Juvenile detention home  
773 Keg mfg: metal  
753 Keg mfg: wooden  
556 Kennel  
767 Kerosene mfg  
776 Kettle mfg with heating element  
773 Kettle mfg without heating element  
746 Key case mfg  
162 Key club  
773 Key mfg  
533 Key-lock shop  
681 Kiln lining mfg  
774 Kiln mfg  
742 Kilt mfg  
212 Kindergarten  
532 Kitchen cabinet store  
773 Knife mfg  
736 Knit wear mfg  
736 Knitted fabric mfg  
774 Knitting machine mfg: textile  
736 Knitting: full process mill  
736 Knitting: part process mill  
764 Kodel fiber mfg  
791 Laboratory instrument mfg  
626 Laboratory: agricultural  
621 Laboratory: biological  
621 Laboratory: chemical  
625 Laboratory: electric, electronic  
622 Laboratory: hydraulics  
621 Laboratory: medical  
622 Laboratory: metallurgical  
623 Laboratory: personnel testing  
622 Laboratory: physics  
623 Laboratory: psychological testing  
624 Laboratory: radioactive material  
627 Laboratory: research, general  
732 Lace drawing, ending: cotton  
732 Lace mfg: cotton  
734 Lace mfg: mixed, other fibers  
733 Lace mfg: wool or worsted  
765 Lacquer mfg  
753 Ladder mfg: wood  
946 Lake  
745 Lambskin shearing  
773 Laminated spring mfg  
776 Lamp assembling: elec  
682 Lamp bulb mfg  
776 Lamp holder mfg  
776 Lamp mfg: metal, elec  
773 Lamp mfg: metal, nonelec  
743 Lamp shade mfg: cloth  
756 Lamp shade mfg: paper  
981 Land drainage project  
981 Land reclaiming project  
Landfill area (see 911-915)  
711 Lard mfg  
711 Lard refining  
773 Latch mfg  
885 Launching facility for boats  
564 Laundromat  
743 Laundry bag mfg  
566 Laundry pick-up shop  
796 Laundry: commercial  
564 Laundry: self-service  
675 Lava mining, quarrying  
933 Lawn  
774 Lawn mower mfg  
554 Lawn mower rental, sales  
591 Lawyer's office  
773 Lead hollowware  
672 Lead mine, quarry  
799 Lead pencil mfg  
772 Lead refining, smelting  
773 Lead stamping, cold pressing  
682 Leaded glass mfg  
774 Leaf sweeper mfg  
742 Leather clothing mfg  
546 Leather goods sales  
741 Leather heel mfg  
741 Leather legging mfg  
744 Leather machinery belt mfg  
738 Leather mfg: artificial  
741 Leather product mfg: footwear



742 Leather product mfg: wearing apparel	757 Lithographing	773 Magnesium hollowware	775 Materials handling equip mfg: electrical
827 Leather product storage	742 Livery mfg	772 Magnesium refining, smelting	774 Materials handling equip mfg: nonelectrical
746 Leather products mfg: general	815 Livestock storage in barn	773 Magnesium stamping	331 Maternity hospital
741 Leather sole mfg	817 Livestock storage not in barn	772 Magnesium wire drawing	754 Mattress mfg except rubber
827 Leather storage	974 Loading ramp: aircraft	584 Mail order store	747 Mattress mfg: rubber
744 Leather tanning, dressing	591 Loan company office	891 Mail order warehouse	853 Mattress storage
738 Leatherette mfg	714 Lobster packing, canning	923 Mailbox	715 Meal milling, preparation
791 Leg mfg: artificial	773 Lock mfg: mechanical	595 Mailing firm	776 Measuring apparatus mfg: elec
742 Legal robe mfg	793 Lock mfg: time	595 Mailing list sales firm	711 Meat dressing, curing, packing
741 Legging mfg	754 Locker mfg	708 Maintenance shop: general	513 Meat shop
156 Legislative hall	834 Locker plant	585 Mall	775 Mechanical equip mfg: elec
181 Legitimate theater	783 Locomotive mfg	766 Malt extracts mfg	774 Mechanical equip mfg: nonelectrical
792 Lens grinding, polishing	887 Locomotive storage	723 Malt house	794 Medal mfg
715 Lentil grinding, splitting	141 Lodge hall	771 Manhole cover mfg: cast iron	791 Medical equipment mfg
923 Letter drop	419 Lodge: 1- or 2-family	773 Manicure set mfg	682 Medical glassware mfg
754 Lettering mfg: sign	439 Lodging house	928 Manlift	331 Medical hospital
758 Letterpress	449 Lodging house: over 16 persons	616 Manufactured gas: fuel	621 Medical laboratory
151 Library	662 Log storage	709 Manure processing	791 Medical machine mfg
758 Library binder mfg	856 Log storage not in forest	758 Map mounting	593 Medical office
717 Licorice mfg	662 Logging	758 Map publishing, printing	561 Medical supply sales
753 Life belt mfg: cork	758 Loose-leaf binder mfg	661 Maple sugaring in forest	766 Medicated wine mfg
775 Lift truck mfg: elec	936 Lot: vacant	717 Maple sugaring outside forest	767 Medicinal paraffin mfg
774 Lift truck mfg: nonelec	571 LP-Gas bottle filling station: public	675 Marble quarrying, mining	766 Medicine mfg
776 Light bulb mfg	843 LP-Gas bulk plant	688 Marble working	133 Meeting hall: church
781 Lighter building: repair	767 Lubricating oil mfg	726 Margarine mfg	154 Memorial structure
773 Lighting fixture mfg	746 Luggage mfg	835 Margarine storage	364 Men's detention camp
791 Limb mfg: artificial	546 Luggage store	885 Marina	321 Mental retardation — limited care
688 Lime plant	751 Lumber mfg	576 Marine accessory sales	Mentally impaired: personal care of (see division 25, 321, and 459)
688 Lime product mfg	555 Lumber sales: retail	781 Marine boiler mfg	891 Mercantile stock storage: nonfood
892 Lime storage	851 Lumber storage	726 Marine oil refining	773 Metal box mfg
675 Limestone quarrying, mining	851 Lumberyard	177 Marine passenger terminal	771 Metal casting: iron, steel
688 Limestone working, cutting	164 Lunch counter	577 Marine refueling facility	773 Metal cold pressing
961 Limited access highway	164 Lunchroom	Marine repair (see 781 and 782)	773 Metal fabricating
173 Limousine terminal	713 Macaroni canning	576 Marine salesroom	773 Metal furniture mfg
735 Linen finishing	716 Macaroni plant	577 Marine service station	893 Metal ore storage
734 Linen mill	773 Machine gun mfg	655 Market garden	872 Metal parts storage
796 Linen service plant	774 Machine shop	511 Market over 10,000 ft	773 Metal product polishing, plating
734 Linen spinning, carding	774 Machine tool mfg: metal	512 Market under 10,000 ft	876 Metal products storage: finished
824 Linen storage: bales, bags	744 Machinery belt mfg: leather	713 Marmalade mfg	771 Metal refining: iron, steel
544 Linen store	732 Machinery belting mfg: cotton	952 Marshalling yard	773 Metal stamping mfg
565 Linen supply house	733 Machinery belting mfg: wool	717 Marshmallow mfg	871 Metal storage: basic forms
742 Lingerie mfg	775 Machinery mfg: elec	685 Masonry cement mfg	774 Metallurgical furnace mfg
738 Linoleum mfg	774 Machinery mfg: excl elec	562 Masonry supply sales	622 Metallurgical laboratory
536 Linoleum store	774 Machinery parts mfg	Mast mfg (see 781 and 782)	678 Mica quarrying, mining
726 Linseed oil plant	776 Machinery repair: elec	753 Mat mfg: cork	792 Microscope mfg
763 Liquid resin mfg: synthetic	574 Machinery sales: motor-driven	732 Mat mfg: cotton	548 Microscope sales
721 Liquor blending	874 Machinery storage: not vehicle	734 Mat mfg: mixed, other fibers	632 Microwave site
723 Liquor mfg: malt	884 Machinery storage: vehicle	758 Mat mfg: printing	
846 Liquor storage	562 Machinist supply sales	747 Mat mfg: rubber or synthetic	
514 Liquor store	774 Machinist tool mfg	733 Mat tufg: wool or worsted	
677 Lithium minerals mining	757 Magazine publishing	762 Match plant	
779 Lithium minerals processing	798 Magic apparatus mfg		



- 464 Migrant workers' barracks  
464 Military barracks  
862 Military explosives storage  
221 Military school classroom bldg  
896 Military stores  
712 Milk bottling  
651 Milk house  
774 Milk machine mfg  
712 Milk mfg: condensed, evaporated  
712 Milk mfg: powdered  
712 Milk processing  
651 Milk production  
835 Milk storage: bottled, canned  
651 Milk-cooling shed  
526 Mill outlet store  
742 Millinery mfg  
522 Millinery store  
713 Mincemeat mfg  
783 Mine rail car mfg  
688 Mineral grinding, processing  
767 Mineral oil refining  
761 Mineral pigments mfg  
677 Mineral pigments mining  
892 Mineral products storage: bagged  
893 Mineral products storage: packaged, non-bagged  
724 Mineral water carbonating  
688 Mineral wool mfg  
678 Mineral: mining nonmetallic  
677 Mining chemicals  
671 Mining coal  
677 Mining fertilizer minerals  
672 Mining iron ore  
774 Mining mchry mfg  
751 Mining timber mfg  
794 Mint: money  
753 Mirror frame mfg  
682 Mirror mfg  
844 Missile fuel storage  
631 Missile launch site  
786 Missile mfg, assembly, repair: no fuel  
131 Mission  
742 Mitten mfg  
734 Mixed fiber: full process mill  
776 Mixer mfg: domestic  
752 Mobile building mfg  
574 Mobile home sales  
419 Mobile home: permanent family  
751 Mobile saw, planing mill  
752 Modular building mfg  
717 Molasses mfg  
839 Molasses, bulk  
763 Molded compound mfg: plastic  
764 Molded plastic products  
756 Molded pulp goods mfg  
464 Monastery  
794 Money mfg  
792 Monocle mfg  
154 Monument  
688 Monument works  
799 Mop mfg  
134 Morgue  
591 Mortgage company  
134 Mortuary  
131 Mosque  
449 Motel  
868 Motion-picture exchange  
797 Motion-picture film processing  
868 Motion-picture film storage  
186 Motion-picture studio  
183 Motion-picture theater  
784 Motor home mfg, assembly  
775 Motor mfg: elec  
774 Motor mfg: nonelectric  
784 Motor vehicle mfg, assembly  
573 Motor vehicle repairs  
574 Motor vehicle sales  
575 Motor vehicle supply store  
576 Motorboat sales  
784 Motorcycle mfg  
784 Motorcycle parts mfg  
573 Motorcycle repair  
574 Motorcycle sales  
186 Movie studio  
183 Movie theater only  
181 Movie theater with stage  
573 Muffler repair shop: motor vehicle  
733 Mungo shoddy mfg  
591 Municipal building  
616 Municipal gas mfg  
762 Munitions mfg  
152 Museums  
758 Music publishing, printing  
233 Music school  
534 Music store  
795 Musical instrument mfg  
534 Musical instrument sales  
719 Mustard mfg  
773 Nail mfg  
767 Naphtha oil refining  
743 Napkin mfg  
732 Narrow fabric mfg: cotton  
734 Narrow fabric mfg: mixed fibers  
733 Narrow fabric mfg: wool  
678 Natural abrasive mining  
685 Natural cement mfg  
767 Natural gas plant  
674 Natural gas well  
767 Natural gasoline plant  
765 Natural resin grinding  
747 Natural rubber processing  
591 Navy office  
726 Neat's-foot oil refining  
742 Necktie mfg  
774 Needle bearing mfg  
794 Needle mfg: record  
773 Needle mfg: sewing  
739 Needleloom carpet mfg  
739 Needleloom felt mfg  
776 Neon lamp mfg  
682 Neon light mfg, fabricating  
776 Neon sign mfg  
737 Net mfg: excl hair  
799 Net mfg: hair  
591 News gathering agency office  
591 News reporting agency office  
757 Newspaper publishing  
755 Newsprint mfg  
542 Newsstand  
742 Night dress mfg  
742 Nightclothes mfg  
162 Nightclub  
631 Nike site  
689 Nitrate minerals processing  
677 Nitrate minerals quarrying  
762 Nitrocellulose mfg, reclaiming  
761 Nitrous oxide gas mfg  
772 Nonferrous metal refining  
736 Nonwoven fabric mfg  
739 Nonwoven fabrics mfg  
716 Noodle mfg  
753 Novelty mfg: hardwood  
551 Novelty store  
611 Nuclear fuel element plant  
612 Nuclear ordnance, bomb assembly  
774 Nuclear reactor mchry mfg  
613 Nuclear reactor power production  
624 Nuclear reactor, for research  
464 Nuns' living quarters  
211 Nursery school: 4 hours or less  
Nursery school: over 4 hours but less than 24 hours (see 251-253)  
655 Nursery: tree, bush  
464 Nurses' living quarters  
311 Nursing home with 24-hour nursing staff  
726 Nut cake mfg  
655 Nut growing  
726 Nut meat mfg  
773 Nut mfg: metal  
657 Nut packing as picked  
717 Nut salting  
513 Nut shop  
811 Nut storage: bulk  
717 Nut sugar coating  
764 Nylon fiber mfg  
739 Oakum picking, willowing  
782 Oar mfg  
715 Oat milling, flaking  
593 Oculist's office  
754 Office fixtures, fittings mfg  
754 Office furniture mfg  
531 Office furniture store  
531 Office machine sales  
776 Office mchry mfg  
531 Office supply sales  
541 Office supply store  
591 Office: business  
593 Office: medical  
982 Oil field  
767 Oil mfg: lubricating  
726 Oil mfg: salad  
726 Oil of clove mfg  
645 Oil pipeline  
674 Oil reservoir  
674 Oil shale mining, retorting  
845 Oil storage in containers  
841 Oil storage in tanks  
674 Oil well  
738 Oilcloth mfg  
742 Oilskin mfg  
766 Ointment mfg  
311 Old persons' home with 24-hour nursing staff  
726 Oleo oil refining  
726 Oleostearin mfg  
726 Olive oil refining, hydrogenation  
941 Open sea  
181 Opera house  
791 Operating table mfg  
792 Ophthalmic goods mfg  
792 Ophthalmoscope mfg  
792 Optical glass grinding, polishing  
682 Optical glass mfg  
548 Optical goods sales  
792 Optical instrument mfg  
548 Optician's office  
548 Optometrist's office  
342 Oral surgeon's office — over 3 patients  
655 Orange growing  
164 Orange juice bar

713 Orange juice concentrating	726 Palm oil refining	176 Passenger terminal: elevated railway	767 Petroleum jelly mfg
655 Orchard	774 Paper bag machine mfg	177 Passenger terminal: marine	845 Petroleum packaged product
773 Ordnance mfg except vehicles	756 Paper bag mfg incl printing	174 Passenger terminal: street-level rail	767 Petroleum refinery
896 Ordnance storage	855 Paper bag storage	175 Passenger terminal: subway	841 Petroleum tank farm
673 Ore concentration	756 Paper box mfg incl printing	716 Pasta mfg	841 Petroleum terminal
672 Ore mining	758 Paper bronzing, gilding, edging	765 Paste mfg	674 Petroleum well
771 Ore preparation plant: iron	756 Paper carton mfg incl printing	799 Pastel mfg	898 Petrolenm wharf
772 Ore smelting: nonferrous	756 Paper container mfg incl printing	712 Pasteurizing milk	773 Pewter hollowware mfg
795 Organ mfg	755 Paper corrugating, laminating	717 Pastilles mfg	772 Pewter refining, smelting
534 Organ sales	756 Paper cutout pattern mfg	716 Pasty mfg	773 Pewter stamping
761 Organic chemical mfg	541 Paper goods sales	655 Pasture land: improved	766 Pharmaceutical mfg
764 Orlon fiber mfg	756 Paper label mfg	931 Pasture: unimproved	866 Pharmaceutical storage
794 Oruament mfg	756 Paper lampshade mfg	744 Patent leather plant	582 Pharmacy: no pharmacist
544 Ornamental goods store	755 Paper mfg	964 Path	543 Pharmacy: pharmacist on duty
773 Oruamental ironwork mfg	687 Paper mfg: abrasive	621 Pathological laboratory	776 Phonograph assembling: elec
753 Osier container mfg	768 Paper mfg: asphalt-coated	963 Paved driveway	795 Phonograph record blank mfg
593 Osteopath's office	799 Paper mfg: carbon	963 Paved private street	689 Phosphate minerals processing
782 Outboard motor mfg, repair	792 Paper mfg: sensitized	962 Paved public street	677 Phosphate minerals mining, quarrying
576 Outboard motor sales	799 Paper mfg: treated duplicating	544 Pawn shop	595 Photocopy firm
926 Outbuilding	756 Paper mounts mfg	715 Pea grinding, splitting	758 Photoengraving: commercial
927 Outdoor telephone booth	756 Paper plate mfg	713 Peanut butter processing	757 Photoengraving: newspaper and magazine
926 Outhouse	756 Paper products fabricating	726 Peanut oil refining	797 Photofinishing
341 Outpatient clinic	855 Paper products storage	713 Peanut processing	792 Photographic equip mfg
774 Oven mfg, industrial	755 Paper reclaiming	811 Peanut storage: bulk	792 Photographic film, paper mfg
742 Overalls mfg	758 Paper ruling	794 Pearl products, jewelry mfg	792 Photographic lens mfg
742 Overcoat mfg	756 Paper spoon or utensil mfg	678 Peat cutting, digging	553 Photographic store
921 Overpass	855 Paper storage: baled	818 Peat storage	553 Photographic studio
972 Overrun area at airport	855 Paper storage: not rolled	331 Pediatrics hospital	792 Photographic supplies mfg
761 Oxygen gas mfg	854 Paper storage: rolled	745 Pelt sorting, dressing	593 Physician's office
861 Oxygen storage: liquid or gas	755 Paperboard mfg, coating	799 Pen mfg	622 Physics laboratory
665 Oyster bed operation	755 Papercoating, glazing, laminating	773 Pen nib mfg: base metal	593 Physiotherapist's office
714 Oyster packing, canning	774 Paper-making mchry mfg	794 Pen nib mfg: precious metal	795 Piano mfg
665 Oyster: wild, cultivated	756 Papier-mâché goods mfg	541 Pen shop	534 Piano store
514 Package store	767 Paraffin wax mfg	361 Penal institution: men	732 Picking cotton
768 Packaged fuel mfg	742 Parasol mfg	799 Pencil lead mfg	713 Pickle processing
893 Packaged mineral products storage	938 Park	799 Pencil mfg	711 Pickling
845 Packaged petroleum products storage	981 Parking area construction	799 Penholder mfg	566 Pick-up shop: laundry, dry cleaning
838 Packaged tobacco products storage	882 Parking garage: general	361 Penitentiary: men	753 Picture frame mfg
774 Packaging machine mfg	881 Parking garage: residential	362 Penitentiary: women	711 Pie mfg: meat
753 Packing case mfg: wood	981 Parking lot construction	113 Penny arcade	716 Pie mfg: nonmeat
657 Packing crops as picked	882 Parking lot: covered	787 Perambulator mfg	526 Piece goods sales
713 Packing fruits and vegetables	965 Parking lot: uncovered	762 Percussion cap mfg	898 Pier
756 Pad mfg: writing	134 Parlor: funeral	795 Percussion instruments mfg	943 Pier water area
739 Padding mfg: all fibers	625 Particle accelerator	766 Perfume mfg	898 Pier: petroleum
765 Paint mfg	171 Passenger terminal: airport	726 Perfume oil mfg	771 Pig iron mfg
573 Paint shop: motor vehicle	173 Passenger terminal: bus	544 Perfume sales	651 Pig raising
865 Paint storage		757 Periodical publishing	761 Pigment mfg
535 Paint store		792 Periscope mfg	774 Pile driver mfg
799 Painters' brush mfg		722 Perry wine mfg	766 Pill mfg
773 Painters' pot mfg: metal		623 Personnel testing laboratory	771 Pillar box mfg: cast iron
535 Painters' supply store		761 Pest control chemical mfg	
742 Pajamas mfg		556 Pet care center	
		556 Pet shop, supplies	
		841 Petroleum bulk plant	
		841 Petroleum distributing station	

754 Pillow mfg: nonrubber	774 Plow mfg incl self-propelled	794 Precious metal assaying, smelting	754 Public building furniture mfg
747 Pillow mfg: rubber	776 Plug mfg: elec	794 Precious stone cutting	615 Public electric utility
754 Pillow renovating plant	562 Plumbers' tools sales	774 Precision chain mfg	882 Public garage: parking
743 Pillowslip mfg	773 Plumbing supply mfg	774 Prefabricated bldgs mfg: metal	182 Public hall
771 Pipe mfg: cast iron, steel, iron	873 Plumbing supply sales: wholesale	751 Prefabricated structure mfg: wood	852 Public household furniture storage
681 Pipe mfg: concrete	533 Plumbing supply sales: retail	215 Preparatory school	962 Public street: paved
764 Pipe mfg: plastic	873 Plumbing supply storage	221 Preparatory school classroom bldg: boarding	964 Public street: unpaved
799 Pipe mfg: smoking	799 Plume mfg	713 Preserve mfg	884 Public works vehicle storage
872 Pipe storage: metal	751 Plywood mfg	774 Press machine mfg: hydr, mech	758 Publishing: book
983 Pipeline construction above surface	774 Pneumatic control equip mfg	774 Press mfg: printing	757 Publishing: newspaper, periodical
981 Pipeline construction below surface	774 Pneumatic mchry mfg	773 Pressed metal pieces mfg: hot	771 Puddling furnace
983 Pipeline right of way	746 Pocketbook mfg	756 Pressed pulp goods mfg	774 Pulp making mchry mfg
645 Pipeline: flammable liquid	773 Pocketknife mfg	751 Pressure impregnation plant	755 Pulp mill
644 Pipeline: gas	662 Pole hewing, rough cutting	213 Primary school	853 Pulp storage
646 Pipeline: steam	642 Pole: utility power	774 Prime mover mfg: nonelec	662 Pulpwood storage in forest
647 Pipeline: water	633 Police communications center	765 Printing ink mfg	856 Pulpwood storage not in forest
773 Pistol mfg	365 Police station	774 Printing machine mfg	774 Pump mfg
131 Place of worship	765 Polish mfg	757 Printing newspaper, magazine	644 Pumping station: gas
152 Planetarium	743 Polishing cloth mfg	735 Printing plant: textile	645 Pumping station: oil
751 Planing mill	764 Polyester fiber mfg	747 Printing roller mfg	648 Pumping station: sewage
984 Plant yard: industrial	946 Pond	855 Printing supply storage: flat paper	647 Pumping station: water
688 Plaster mfg	786 Pontoon mfg, assembly, repair	854 Printing supply storage: rolled paper	787 Push chair mfg
688 Plaster product mfg	112 Poolroom, hall, center	758 Printing: commercial	799 Puzzle mfg
892 Plaster storage	684 Porcelain product mfg	758 Printing: silk screen	677 Pyrites mining, quarrying
763 Plastic beam mfg	942 Port area	331 Prison hospital	761 Pyrites processing
782 Plastic boat fabrication	123 Portable grandstands	364 Prison: minimum security type	772 Pyrophoric metal working
764 Plastic casting	723 Porter mfg: malt	362 Prison: women	762 Pyroxylin fabricating, mfg
763 Plastic dispersions mfg	685 Portland cement mfg	221 Private boarding school classroom bldg	762 Pyroxylin reclaiming
763 Plastic emulsions mfg	596 Post office	881 Private garage	774 Quarry crushing machine mfg
764 Plastic enclosure mfg	758 Postage stamp printing	963 Private street	677 Quarry: chemicals, minerals
764 Plastic film mfg	773 Pot mfg: metal	926 Privy	676 Quarry: salt
741 Plastic footwear mfg	677 Potash mining, quarrying	513 Produce sale: retail	675 Quarry: sand, gravel, stone
799 Plastic lampshade mfg	718 Potato chip plant	812 Produce storage: crated, boxed	774 Quarrying machine mfg
763 Plastic making: foamed	718 Potato crisp mfg	813 Produce storage: loose, bagged	678 Quartz mining, quarrying
763 Plastic mfg	684 Pottery plant	791 Professional instrument mfg	743 Quilt mfg
742 Plastic outerwear mfg	544 Pottery shop	591 Professional office	651 Rabbit raising
764 Plastic part, product mfg	893 Pottery storage	593 Professional office: medical	123 Racetrack grandstand
763 Plastic powder mfg	711 Poultry dressing, curing	561 Professional supply sales	815 Racetrack stable
863 Plastic product storage	651 Poultry farm	792 Projector mfg	776 Radar mfg
764 Plastic products fabr	715 Poultry feed: stock dry	786 Propeller mfg: aircraft	632 Radar site
764 Plastic rods mfg	719 Poultry food preparation: grit	773 Pruning knife mfg	791 Radiation measurement device
764 Plastic sheet fabr	751 Poultry house mfg: wood	593 Psychologist's office	771 Radiator mfg: cast iron sections
763 Plastic solution mfg	513 Poultry store	163 Pub	776 Radiator mfg: domestic elec
764 Plastic toy mfg	556 Pound: animal		784 Radiator mfg: motor vehicle
863 Plastics storage	726 Powdered soap plant		776 Radio and TV tubes, glass envelope mfg
684 Plate mfg: china	615 Power house: electric		632 Radio beacon
753 Plate mfg: hardwood	983 Power line right of way		
756 Plate mfg: paper	642 Power line: overhead		
792 Plate mfg: sensitized	642 Power line: underground		
682 Plate window glass plant	613 Power production: nuclear		
794 Plateware mfg	143 Power squadron club		
794 Platinum assaying, smelting			
795 Player piano mfg			
124 Playground			
926 Playhouse: children's			
181 Playhouse: theater			
758 Playing card mfg			

754 Radio cabinet mfg: wood	774 Reaper mfg incl self-propelled	593 Research organization office	123 Roller rink in arena
632 Radio communications site	747 Rebuilding tires	459 Residential board and care	115 Roller skating rink
776 Radio mfg	747 Recapping tires		774 Rolling mill mchry mfg
538 Radio repair without sales	776 Record player mfg: sound, music	881 Residential parking garage	771 Rolling mill: ferrous
545 Radio sales	545 Record player sales	221 Residential school building	772 Rolling mill: nonferrous
185 Radio studio	636 Record repository: document	933 Residential yard	685 Roman cement mfg
632 Radio transmitting site	534 Record shop	661 Resin gathering: natural	681 Roof tile mfg: clay
611 Radioactive material disposal	931 Recreation area: under-developed	763 Resin mfg: synthetic	768 Roofing materials mfg: asphalt
624 Radioactive material lab	113 Recreation center, facility, place	311 Rest home with 24-hour nursing staff	688 Roofing materials mfg: stone
611 Radioactive material mfg	233 Recreational school	161 Restaurant	751 Roofing materials mfg: wood
611 Radioactive material storage	784 Recreational vehicle mfg	754 Restaurant furniture mfg	851 Roofing storage
611 Radioactive tracer processing	935 Recreational vehicle park	568 Restaurant supplies and services	555 Roofing supply sales
739 Rag reclaiming	591 Recruiting office	747 Retreading tires	776 Room heater mfg: unit type
739 Rag reworking mill	774 Reed mfg for textile machine	537 Reupholstery shop	439 Rooming house
739 Ragshop		773 Revolver mfg	449 Rooming house with over 16 persons
829 Rag storage	753 Reed product mfg	732 Ribbon mfg: cotton	715 Root peeling mill
783 Railroad coach mfg	767 Refinery tankage	734 Ribbon mfg: mixed, other fibers	737 Rope mfg
887 Railroad equip storage	726 Refinery: animal oil	733 Ribbon mfg: wool or worsted	853 Rope storage
894 Railroad freight terminal	767 Refinery: petroleum	655 Rice growing	765 Rosin mfg
174 Railroad passenger terminal: street-level	765 Refinery: turpentine	715 Rice mill	783 Roundhouse
783 Railroad repair shop	726 Refinery: vegetable oil	811 Rice storage: bulk	742 Rubber clothing mfg
951 Railroad right of way	363 Reform school	142 Riding club	747 Rubber dipping, mixing
981 Railroad roadbed construction	361 Reformatory: men	815 Riding stable	747 Rubber footwear mfg: vulcanized
783 Railroad rolling stock assembling	362 Reformatory: women	142 Rifle club	661 Rubber gathering: wild
783 Railroad shop	675 Refractory clay extraction from earth	773 Rifle mfg	522 Rubber goods store
953 Railroad siding	681 Refractory tile mfg: brick	946 River	655 Rubber growing
954 Railroad signal equipment	835 Refrigerated warehouse	937 Riverfront	747 Rubber hose mfg
783 Railroad signal mfg	774 Refrigeration mchry mfg	773 Rivet mfg: metal	747 Rubber mat mfg
176 Railroad station: elevated	776 Refrigerator mfg: unit type	774 Road maintenance machine mfg	747 Rubber mfg: foamed
771 Railroad switch mfg	532 Refrigerator sales	774 Road making machine mfg	661 Rubber plantation
615 Railroad system electric power plant	Refuse disposal area (see 911-915)	884 Road mchry storage	747 Rubber products mfg
771 Railroad truck mfg	784 Registration plate mfg, motor vehicle	774 Road roller machine mfg	867 Rubber products storage
742 Raincoat mfg	234 Rehabilitation center: attendance by choice	963 Road: private paved	742 Rubber rainwear mfg
713 Raisin processing	366 Rehabilitation center: vocational	962 Road: public paved	747 Rubber reclaiming
773 Rake mfg	758 Relief stamping: paper	164 Roadside stand, counter: eating	747 Rubber scrap processing
739 Ramie spinning, weaving	132 Religious education facility	513 Roadside stand, counter: product	747 Rubber shoe mfg: vulcanized
753 Rattan product mfg	544 Religious goods store	742 Robe mfg	799 Rubber stamp mfg
827 Raw leather storage	591 Religious organization office	786 Rocket airframe mfg	541 Rubber stamp store
867 Raw rubber products storage	713 Relish mfg	762 Rocket fuel mfg	867 Rubber storage
717 Rawsugar refining	711 Rendering fat: edible	844 Rocket fuel storage	747 Rubber toy mfg
764 Rayon fiber mfg	574 Repair garage with motor vehicle sales	631 Rocket launch site	747 Rubber waste processing
773 Razor blade mfg	573 Repair garage without motor vehicle sales	762 Rocket mfg: signal	648 Rubbish burner: industrial
776 Razor mfg, elec	632 Repeater site: radio, microwave	688 Rockwool mfg	794 Ruby cutting, mounting
773 Razor mfg, nonelec	627 Research laboratory	764 Rod mfg: plastic	796 Rug cleaning, dyeing
742 Ready-made clothing mfg		774 Rod mfg: welding	732 Rug mfg: cotton
686 Ready-mix concrete plant		854 Rolled paper storage	734 Rug mfg: mixed fibers
591 Real estate office		774 Roller bearing mfg	733 Rug mfg: wool
		774 Roller mfg, for textile machine	826 Rug storage
			536 Rug store
			774 Ruling machine mfg: printing
			721 Rum mfg
			792 Runway at airport
			716 Rusk mfg

753 Rustic furniture mfg	363 School: correctional, reform	571 Service station: public	523 Shoe repair with manufacture
715 Rye milling, flaking, rolling	233 School: dancing	648 Sewage disposal plant	827 Shoe storage
743 Sack mfg	233 School: deaf, dumb, or blind	981 Sewer construction	522 Shoe store
785 Saddle mfg: cycle	464 School: dormitory	776 Sewing machine mfg	753 Shoe tree mfg
746 Saddlery mfg	213 School: elementary	774 Sewing machine mfg: bookbinding	732 Shoelace mfg: braided cotton
591 Safe deposit firm	215 School: high	532 Sewing machine store	734 Shoelace mfg: braided fibers
773 Safe mfg	214 School: intermediate	773 Shackle mfg	733 Shoelace mfg: braided wool
682 Safety glass mfg	214 School: junior high	754 Shade mfg	746 Shoelace mfg: leather
715 Sago grinding, splitting	211 School: nursery	751 Shake splitting: wood	523 Shoeshine stand, shop
782 Sail making	132 School: religious education only	767 Shale oil refining	113 Shooting gallery
743 Sail mfg	233 School: specialty	766 Shampoo mfg	754 Shop front mfg
713 Salad dressing mfg	132 School: Sunday	776 Shaver mfg: dry, elec	754 Shop furniture mfg
726 Salad oil mfg	231 School: trade, industrial	726 Shaving cream, soap mfg	585 Shopping mall
163 Saloon	791 Scientific equipment mfg	773 Shears mfg	716 Shortbread mfg
676 Salt crushing, screening	688 Scientific glassware mfg	808 Shed: contractor's	726 Shortening mfg
761 Salt mfg: chemical	593 Scientific organization office	808 Shed: tool	835 Shortening storage
676 Salt mining	773 Scissor mfg	766 Sheep dip mfg	773 Shotgun mfg
719 Salt packing not at mine	784 Scooter mfg: motorized	651 Sheep raising	774 Shovel loader mfg: earth-moving
719 Salt processing not at mine	771 Scrap iron processing	745 Sheepskin mat mfg	714 Shrimp packing, canning
719 Salt refining: edible	916 Scrap recovery, reclaiming	745 Sheepskin shearing	938 Shrubbery: cultivated
877 Salvage yard	747 Scrap rubber processing	742 Sheepskin-lined clothing mfg	754 Shutter mfg
758 Sample mounting, printing	774 Scraper mfg: earth	774 Sheet metal working machine mfg	753 Shuttle mfg for textile machine
675 Sand extraction from earth	774 Screening machine mfg	773 Sheet metal working: base metal	785 Side car mfg: assembly
688 Sand washing, screening	773 Screw mfg	743 Sheet mfg	751 Siding mfg: wood
776 Sander mfg: elec	233 Sculpture: school for	758 Sheet music publishing, printing	754 Sign lettering
687 Sandpaper mfg	773 Scythe mfg	534 Sheet music sales	754 Sign mfg
675 Sandstone mining, quarrying	941 Sea: open	747 Sheet rubber mfg	754 Sign painting
688 Sandstone working	714 Seafood packing, canning	754 Shelf mfg: any material	762 Signal rocket mfg
684 Sanitary earthenware mfg	714 Seafood salting, drying	773 Shell case mfg: arms	811 Silage storage
Sanitary landfill (see 911-915)	937 Seashore	762 Shell filling: munitions	735 Silk finishing
661 Sap gathering, extracting	573 Seat cover shop: auto	799 Shell products mfg	799 Silk lampshade mfg
794 Sapphire cutting, mounting	221 Secondary boarding school classroom bldg	765 Shellac mfg	734 Silk mill
751 Sash mfg: wood	221 Secondary school classroom bldg: boarding	925 Shelter: fallout, storm, or bomb	734 Silk spinning
791 Satellite mfg, assembly	215 Secondary school: day	751 Shingle mfg, wood	823 Silk storage: bales, bags
632 Satellite tracking station	521 Secondhand clothing sale	Ship fabricating plant (see 781 and 782)	758 Silk-screen printing
733 Satinet cloth mill	232 Secretarial school	781 Ship parts mfg	811 Silo: farm
713 Sauce processing	591 Security broker's office	Ship repairing (see 781 and 782)	794 Silver and silver plate-ware assembly, mfg
773 Saucepan mfg	726 Seed cake mfg	885 Ship storage	794 Silver assaying, smelting
711 Sausage casing mfg	655 Seed crop	781 Shipbreaking yard	774 Silver can mfg for textile machine
592 Savings bank	726 Seed meal mfg	773 Shipping container mfg: metal	672 Silver mine, quarry
592 Savings, loan institution	719 Seed preparation	781 Shipyard: vessels over 65 ft (20m)	794 Silverware mfg
776 Saw mfg: elec	811 Seed storage: bulk	742 Shirt mfg	824 Sisal storage: bales, bags
773 Saw mfg: hand	554 Seed store	522 Shirt store	734 Sisal working
751 Saw, planing mill	565 Self-service dry cleaning	784 Shock absorber mfg: motor vehicle	737 Sisal working
751 Sawdust mfg	564 Self-service laundry	733 Shoddy mill	153 Site: historic
751 Sawdust pile	899 Self-storage unit	741 Shoe accessory mfg	552 Skate shop
751 Sawmill in or out of forest	241 Seminary classroom bldg	754 Shoe case mfg	114 Skating rink: ice
774 Scale mfg	794 Semiprecious stone working	774 Shoe mchry mfg	123 Skating rink: in arena
742 Scarf mfg	792 Sensitized film mfg	741 Shoe mfg	115 Skating rink: roller
221 School classroom: private boarding	577 Service station: marine	765 Shoe polish mfg	774 Ski lift mfg
232 School: business, commercial	572 Service station: private	523 Shoe repair shop, store	552 Ski shop
			928 Ski tow
			311 Skilled nursing facility
			745 Skin mat mfg

828 Skin product storage	726 Sperm oil products	141 Steam bath	737 Straw rope, cord mfg
828 Skin storage	719 Spice processing	774 Steam boiler mfg	819 Straw stack
745 Skin tanning, dressing	774 Spindle mfg for textile machine	774 Steam roller mfg	946 Stream
742 Skirt mfg	774 Spinning machine mfg: textile	774 Steam shovel mfg	981 Street construction
773 Skylight mfg: metal	732 Spinning mill: cotton	983 Steam utility right of way	783 Street railway painting shop
742 Slacks mfg	734 Spinning mill: mixed, other fibers	614 Steam-generating plant	783 Street railway repair shop
675 Slate quarrying	733 Spinning mill: wool or worsted	726 Stearin oil refining or mfg	887 Street railway storage house
688 Slate working, cutting	773 Spiral spring mfg	771 Steel alloy mfg	962 Street: paved, public
711 Slaughterhouse	791 Splint mfg	771 Steel billet, bloom mfg	783 Streetcar assembling, mfg
743 Slipcover mfg	716 Split pea mfg	771 Steel conversion, forging	174 Street-level rail terminal
741 Slipper mfg	747 Sponge mfg: rubber or synthetic	771 Steel foundry, furnace, mill	795 String instrument mfg
773 Small arms or accessory mfg	747 Sponge rubber mfg	771 Steel smelting, refining	737 String mfg
771 Smelting: ferrous	774 Spool mfg for textile machine	773 Steel spring mfg	761 Strontium minerals processing
772 Smelting: nonferrous	773 Spoon mfg: nonprecious metal	771 Steel stripping	677 Strontium minerals mining
711 Smokehouse: meat	794 Spoon mfg: precious metal	771 Steel: basic products mfg	681 Structural clay products mfg
164 Snack bar	798 Sporting goods mfg, non-leather	774 Steelwork mfg: building, bridge	893 Structural clay products storage
718 Snack mfg	746 Sporting goods mfg: leather	784 Steering gear mfg: motor vehicle	771 Structural steel mfg
773 Snap fastener mfg: metal	552 Sporting goods store	725 Stemming tobacco	871 Structural steel storage
774 Snowblower mfg	773 Sporting guns mfg	799 Stencil mfg	141 Student club
554 Snowblower rental, sales	123 Sports arena	595 Stenographic services firm	464 Student dormitory
725 Snuff plant	737 Sports net mfg	545 Stereo equipment sales	141 Student union
726 Soap or detergent mfg	521 Sportswear shop	757 Stereotyping newspaper, magazine	186 Studio: motion-picture
869 Soap storage	774 Spring mfg: balance	561 Stethoscope sales	553 Studio: photography, still picture
675 Soapstone mining, quarrying	773 Spring mfg: steel	736 Stocking mfg: knitted	185 Studio: radio or TV
141 Social club without sleeping	815 Stable	711 Stockyard abattoir	662 Stump storage: wood
736 Sock mfg: knitted	123 Stadium	817 Stockyard: livestock storage	322 Substance abuse center — limited care
776 Socket mfg: elec	765 Stain mfg: wood, varnish	774 Stoker mfg	642 Substation: elec
755 Soda pulp mfg	682 Stained glass mfg	688 Stone crushing	783 Subway car mfg
677 Sodium mining, quarrying	799 Stamp mfg: embossing, metal	675 Stone quarrying	175 Subway station
761 Sodium processing	799 Stamp mfg: rubber	688 Stone shaping, grinding	922 Subway tunnel
724 Soft drink mfg	758 Stamp printing: postage	681 Stoneware pipe, conduit mfg	717 Sugar beet or cane refining
744 Sole leather tannery	773 Stamped metal pieces mfg: drop	753 Stopper mfg: cork	836 Sugar storage: bulk
741 Sole mfg: leather or plastic	763 Stamping plastics	891 Storage: general	831 Sugar storage: packaged
741 Sole mfg: wooden	661 Standing timber	562 Store fixture sales	717 Sugar syrup refining
763 Solid resin mfg: synthetic	734 Staple fiber mfg	754 Store front mfg	742 Suit mfg
762 Solvent extraction	715 Starch plant	754 Store shutter mfg	746 Suitcase mfg
765 Solvent mfg	837 Starch storage: bulk	581 Store: department with furniture	755 Sulfate, sulfite pulp mfg
767 Solvent mfg	591 State capitol	754 Storm door mfg	677 Sulfur mining: natural
462 Sorority house	514 State liquor store	945 Storm drain	677 Sulfur ore mining
532 Sound equipment sales	591 State office	925 Storm shelter	761 Sulfur ore processing
776 Sound recording equipment mfg	173 Station: bus	723 Stout mfg	761 Sulfur processing: natural
719 Soup canning	176 Station: elevated railroad	681 Stove lining mfg: brick	419 Summer cottage: 1- or 2-family
816 Soybean elevator	888 Station: fire	771 Stove mfg: cast iron	181 Summer stock theater
715 Soybean grinding, splitting	365 Station: police	776 Stove mfg: elec	132 Sunday school
726 Soybean processing	174 Station: railroad, street-level	773 Stove mfg: not cast iron, nonelec	511 Supermarket over 10,000 ft
811 Soybean storage, bulk	175 Station: subway	765 Stove polish mfg	512 Supermarket under 10,000 ft
791 Space measuring instrument mfg	756 Stationery mfg incl printing	532 Stove sales	162 Supper club
773 Spade mfg	541 Stationery store	746 Strap mfg: leather	593 Surgeon's office
716 Spaghetti mfg	751 Stave mfg	742 Straw hat mfg	791 Surgical supply mfg
773 Spanner mfg		739 Straw mat mfg	521 Surplus store
Spar mfg (see 781 and 782)		756 Straw mfg: paper	
513 Specialty food store			
233 Specialty school			
792 Spectacle mfg			



- 594 Surveyor's office  
 742 Suspender mfg  
 141 Swimming club  
 116 Swimming pool or equipment  
 954 Switch control equipment railroad  
 776 Switch mfg: elec  
 776 Switchboard mfg: telephone  
 775 Switchgear mfg: elec  
 952 Switchyard  
 773 Sword mfg  
 131 Synagogue  
 761 Synthetic dye mfg  
 761 Synthetic fertilizer mfg  
 734 Synthetic fiber carding  
 735 Synthetic fiber finishing  
 764 Synthetic fiber mfg  
 823 Synthetic fiber storage: bales, bags  
 734 Synthetic fiber: part process mill  
 763 Synthetic resin mfg  
 763 Synthetic rubber mfg  
 747 Synthetic rubber product mfg  
 683 Syphon glass mfg  
 724 Syrup mfg: flavoring  
 754 Table mfg: any material  
 726 Table oil mfg  
 743 Tablecloth mfg  
 794 Tableware mfg: metal or stone  
 756 Tabulating machine card mfg  
 776 Tabulating machine mfg  
 799 Tag mfg  
 524 Tailor shop  
 742 Tailor-made clothing mfg  
 675 Talc mining, quarrying  
 688 Talc works  
 726 Tallow oil refining  
 767 Tank farm  
 841 Tank storage: flammable or combustible liquids  
 842 Tank storage: gas  
 843 Tank storage: LP-Gas  
 745 Tannery: fur, skin, pelt, hide  
 744 Tannery: leather  
 761 Tanning extract mfg  
 732 Tape mfg: woven cotton  
 734 Tape mfg: woven mixed fibers  
 776 Tape recorder mfg  
 726 Taper mfg, candles  
 163 Taproom  
 767 Tar distillation  
 768 Tar-coated paper mfg  
 743 Tarpaulin mfg  
 449 Tavern with sleeping  
 163 Tavern, without sleeping accommodations  
 784 Taxicab mfg, assembly  
 883 Taxicab parking garage  
 973 Taxiway  
 753 Tea chest mfg  
 655 Tea growing  
 719 Tea leaf processing  
 776 Teapot mfg: metal, with heating element  
 773 Teapot mfg: metal, without heating element  
 774 Teasel rod mfg for textile machine  
 231 Technical school  
 791 Teeth mfg: artificial, false  
 776 Telegraph apparatus mfg  
 751 Telegraph pole mfg  
 776 Telephone apparatus mfg  
 927 Telephone booth: outdoor  
 634 Telephone exchange  
 983 Telephone utility right of way  
 776 Teleprinter mfg  
 792 Telescope mfg  
 548 Telescope sales  
 776 Teletype machine mfg  
 754 Television cabinet mfg: wood  
 776 Television mfg  
 538 Television repair without sales  
 545 Television sales  
 185 Television studio  
 131 Temple  
 583 Ten cent store over 10,000 ft  
 582 Ten cent store under 10,000 ft  
 429 Tenement  
 142 Tennis club  
 981 Tennis court construction  
 743 Tent mfg  
 552 Tent sales  
 816 Terminal grain elevator  
 894 Terminal warehouse  
 171 Terminal: airport passenger  
 173 Terminal: bus, limousine  
 176 Terminal: elevated railroad  
 894 Terminal: freight  
 177 Terminal: marine  
 174 Terminal: street-level railroad  
 175 Terminal: subway  
 322 Terminally ill care  
 771 Terneplate mfg  
 681 Terra-cotta mfg  
 774 Test cell: engine  
 735 Textile finishing  
 774 Textile mchry mfg  
 826 Textile product storage  
 826 Textile storage  
 526 Textile store  
 181 Theater: combined use  
 162 Theater: dinner  
 184 Theater: drive-in  
 181 Theater: legitimate  
 183 Theater: motion-picture  
 776 Therapeutic apparatus mfg  
 776 Thermistor mfg  
 776 Thermostat mfg  
 865 Thinner storage  
 732 Thread mill: cotton  
 734 Thread mill: mixed other fibers  
 733 Thread mill: wool or worsted  
 739 Thread reworking mill  
 774 Thresher mfg, incl self-propelled  
 123 Ticket office: sporting events  
 758 Ticket printing  
 941 Tidal waters  
 522 Tie store  
 738 Tile mfg: asphalt, vinyl, linoleum  
 747 Tile mfg: rubber floor  
 681 Tile plant: clay products  
 662 Timber hewing, rough shaping  
 661 Timber: planting, replanting  
 661 Timber standing  
 856 Timber: storage not in forest  
 662 Timber: yard storage  
 793 Time lock mfg  
 793 Time recorder mfg  
 776 Time switch mfg: elec  
 793 Timer mfg  
 773 Tin can mfg  
 672 Tin mine, quarry  
 773 Tin products mfg  
 772 Tin refining, smelting  
 773 Tin stamping, cold pressing  
 772 Tin wire drawing  
 773 Tinware mfg  
 747 Tire mfg  
 747 Tire recapping, repair  
 916 Tire salvage  
 867 Tire storage  
 575 Tire store  
 755 Tissue paper mfg  
 773 Titanium hollowware mfg  
 772 Titanium refining, smelting  
 773 Titanium stamping  
 772 Titanium wire drawing  
 776 Toaster mfg, domestic  
 656 Tobacco curing, drying shed  
 655 Tobacco growing  
 656 Tobacco preparing  
 725 Tobacco products mfg  
 838 Tobacco products storage  
 542 Tobacco shop  
 725 Tobacco stemming  
 814 Tobacco storage: loose or baled  
 717 Toffee mfg  
 799 Toilet brush mfg  
 756 Toilet paper mfg  
 766 Toiletries mfg  
 924 Toll station  
 766 Toner mfg  
 774 Tool holder mfg: metal  
 774 Tool mfg  
 791 Tool mfg: engineers  
 776 Tool mfg: flexible shaft, portable  
 773 Tool mfg: hand  
 776 Tool mfg: power  
 808 Tool shed  
 873 Tool storage  
 766 Tooth powder mfg  
 799 Toothbrush mfg  
 766 Toothpaste mfg  
 573 Top shop: motor vehicle  
 773 Torpedo case mfg  
 439 Tourist home  
 449 Tourist home: over 16 persons  
 743 Towel mfg  
 591 Town hall  
 591 Town office bldg  
 798 Toy mfg: nonrubber  
 747 Toy mfg: rubber  
 551 Toy store  
 774 Tractor mfg  
 574 Tractor sales  
 757 Trade journal publishing  
 231 Trade school  
 562 Trade supply sales  
 776 Traffic signaling apparatus mfg  
 784 Trailer mfg, assembly  
 935 Trailer park  
 922 Train tunnel  
 783 Tram mfg  
 642 Transformer  
 775 Transformer mfg  
 642 Transformer vault  
 776 Transistor mfg  
 774 Transmission chain mfg  
 644 Transmission line: gas  
 645 Transmission line: oil  
 784 Transmission mfg: motor vehicle  
 776 Transmitter mfg  
 632 Transmitter site: radar



632 Transmitter site: radio, TV	964 Unpaved street, road, path	713 Vinegar mfg	733 Weaving mill: wool or worsted
632 Transmitter site: tracking station	754 Upholstering plant	733 Virgin wool working	732 Webbing mfg: cotton
663 Trapping	764 Upholstery fill mfg: plastic	773 Vise mfg: metal	734 Webbing mfg: mixed, other fibers
419 Travel trailer: permanent family unit	739 Upholstery fill mfg: textile	366 Vocational rehabilitation center	733 Webbing mfg: wool or worsted
662 Tree felling, rough cutting	751 Upholstery fill mfg: wood	231 Vocational school	761 Weed killer mfg
921 Trestle	531 Upholstery store	739 Wadding mfg: all fibers	774 Weighing machine mfg
785 Tricycle mfg	744 Upper shoe leather tanning	787 Wagon mfg: horse-drawn	774 Welding electrode mfg
887 Trolley car storage	531 Used furniture sales	742 Walking stick mfg	775 Welding mchry mfg: elec
784 Troop carrier mfg, assembly	747 Used tire reprocessing	535 Wall covering sales	774 Welding mchry mfg: nonelec
742 Trouser mfg	642 Utility pole	773 Wall mfg: metal	774 Welding rod mfg
575 Truck accessory store	983 Utility right of way	756 Wallpaper mfg incl printing	773 Welding supply
894 Truck freight terminal	922 Utility tunnel	758 Wallpaper printing	562 Welding shop sales
784 Truck mfg, assembly	615 Utility: electric	535 Wallpaper store	981 Well construction: water
883 Truck parking area	936 Vacant lot	891 Warehouse: general storage	674 Well: oil, gas
573 Truck repair	776 Vacuum cleaner mfg: elec	773 Washer mfg: metal	726 Whale oil refining
574 Truck sales	683 Vacuum flask glass mfg	774 Washing machine mfg: nonelectric	898 Wharf
791 Truss mfg	776 Valve mfg: elec	532 Washing machine sales	715 Wheat milling, preparation
753 Tub mfg: wood	774 Valve mfg: mechanical	776 Washing mchry mfg: elec	785 Wheel mfg: cycle
773 Tube mfg: collapsible	583 Variety store over 10,000 ft	739 Waste batting mill	784 Wheel mfg: motor vehicle
776 Tube mfg: elec vacuum	582 Variety store under 10,000 ft	Waste disposal (see 911-915)	787 Wheelbarrow mfg
771 Tube mfg: flexible, iron or steel	765 Varnish mfg	916 Waste paper reclaiming	787 Wheelchair mfg
682 Tube mfg: glass	865 Varnish storage	755 Waste paper sorting	746 Whip mfg: leather
764 Tube mfg: plastic	753 Vat mfg	855 Waste paper storage	721 Whiskey distillery
747 Tube mfg: rubber	773 Vault door mfg	747 Waste rubber processing	846 Whiskey storage
747 Tube mfg: rubber inner	642 Vault: electrical	733 Waste wool recovery	765 White lead paste mfg
682 Tube, electronic glass envelope mfg	636 Vault: records	793 Watch mfg	799 Wig mfg
781 Tug/tow boat building: repair	642 Vault: transformer	544 Watch repair shop	525 Wig sales
922 Tunnel	713 Vegetable canning	544 Watch sales	931 Wildlife habitat
781 Turbine mfg, repair: marine	713 Vegetable dehydrating, quick-freezing	793 Watchcase mfg	661 Wildlife preserve
775 Turn indicator mfg: vehicle	719 Vegetable dye mfg	Water areas (see 941-949)	753 Willow product mfg
765 Turpentine refinery	655 Vegetable growing	981 Water main construction	775 Winch mfg: elec
737 Twine plant	713 Vegetable juices packing	647 Water reservoir	774 Winch mfg: nonelec
773 Type foundry	726 Vegetable oil refinery	647 Water tank	795 Wind instrument mfg
758 Typesetting	713 Vegetable packing	647 Water treatment plant	774 Winding machine mfg: textile
774 Typesetting machine mfg	657 Vegetable packing as picked	983 Water utility right of way	682 Window glass mfg
757 Typesetting: newspaper	784 Vehicle mfg, assembly	647 Water works	751 Window mfg: wood
776 Typewriter mfg: elec, manual	787 Vehicle mfg: animal- or hand-drawn	742 Waterproof outerwear mfg	773 Window sash mfg: metal
538 Typewriter repair without sales	573 Vehicle repair	981 Waterway construction	751 Window sash mfg: wood
799 Typewriter ribbon mfg	922 Vehicle tunnel	767 Wax mfg: paraffin	754 Window shade plant
531 Typewriter sales with repair	732 Veil, veiling mfg: cotton	765 Wax products mfg	535 Window shade store
742 Umbrella mfg	734 Veil, veiling mfg: mixed fibers	736 Wearing apparel mfg: knitted	567 Window washing firm
522 Umbrella store	733 Veil, veiling mfg: wool	742 Wearing apparel mfg: not knitted	722 Wine mfg
965 Uncovered parking area	751 Veneer mfg	521 Wearing apparel sale, rental	766 Wine mfg: medicated
175 Underground rail terminal	774 Ventilating mchry mfg	826 Wearing apparel storage	846 Wine storage
925 Underground shelter	716 Vermicelli mfg	925 Weather shelter	722 Winery
742 Underwear mfg	742 Vestment mfg	774 Weaving machine mfg: textile	419 Winter cottage: 1-or-2-family
742 Uniform mfg	766 Veterinary chemicals mfg	732 Weaving mill: cotton	784 Wiper mfg: motor vehicle
241 University class room bldg	556 Veterinary service	734 Weaving mill: mixed, other fibers	774 Wire drawing machine mfg
464 University dormitory	545 Video recording equipment sales		771 Wire drawing: ferrous
	534 Video store		772 Wire drawing: nonferrous
			773 Wire gauze mfg
			754 Wire mattress mfg

773 Wire mfg except drawing	733 Wool reworking mill
775 Wire mfg: insulated electric	733 Wool scouring plant
773 Wire nail mfg	733 Wool sorting plant
773 Wire net mfg	733 Wool spinning, carding
773 Wire products mfg	822 Wool storage: bales, bags
774 Wire rope making mchry mfg	773 Work holder mfg: metal
775 Wiring harness mfg: vehicle	464 Workers' barracks
362 Women's detention home	735 Worsted finishing
753 Wood block mfg	733 Worsted spinning
782 Wood boat mfg	733 Worsted yarn spinning, doubling, winding
753 Wood bowling pin mfg	755 Wrapping paper mfg
751 Wood building products mfg	773 Wrench mfg
753 Wood carving mfg	765 Writing ink mfg
666 Wood chip pile	756 Writing pad mfg
753 Wood container mfg	771 Wrought iron works
751 Wood door mfg	776 X-ray apparatus mfg
751 Wood fiber product plant	868 X-ray film storage
751 Wood flooring mfg	776 X-ray machine mfg
751 Wood flour mfg	449 Y.M.C.A. with sleeping
856 Wood fuel storage not in forest	141 Y.M.C.A./Y.W.C.A. without sleeping
753 Wood heel mfg	449 Y.W.C.A. with sleeping
753 Wood last mfg	143 Yachting club
662 Wood logs for fuel storage	885 Yachting club mooring, launching facility
795 Wood musical instrument mfg	825 Yard goods storage
751 Wood preserving plant	526 Yard goods store
753 Wood products mfg	732 Yarn mfg: cotton
852 Wood products storage	734 Yarn mfg: mixed, other fibers
853 Wood pulp storage	733 Yarn mfg: wool or worsted
753 Wood rack mfg	732 Yarn mill: cotton
751 Wood roofing mfg	734 Yarn mill: mixed, other fibers
753 Wood saddlery mfg	733 Yarn mill: wool or worsted
751 Wood sawing, planing	739 Yarn reworking mill
751 Wood sleeper mfg	526 Yarn shop
753 Wood sole mfg	825 Yarn storage
765 Wood stain mfg	719 Yeast mfg
753 Wood toy mfg	459 Young: personal care of
751 Wood treating plant	773 Zinc hollowware mfg
753 Wood tube mfg	672 Zinc mine, quarry
758 Woodcuts mfg	773 Zinc nail mfg
661 Woodland maintenance	772 Zinc refining, smelting
753 Woodware mfg	773 Zinc stamping, cold pressing
751 Woodwork mfg	772 Zinc wire drawing
751 Woodworking on building site	815 Zoo shelter for animals
753 Woodworking: off building site	
733 Wool blending, cleaning, combing	
735 Wool finishing	
726 Wool grease refining	
742 Wool hat mfg	
733 Wool mill	
651 Wool production	
733 Wool recovery	

**A.6.5.4** The data element “mobile property involvement” is used to determine how mobile property relates to a fire. Mobile property can start a fire but not burn itself, start as a fire and burn, or not start a fire but be involved in the fire. The use of this data element assists analysts in determining the role the mobile property played, so that problems can be identified and appropriate actions taken.

Table A.6.5.4 details the inclusions and exclusions for the mobile property involvement coding given in 6.5.4.

**Table A.6.5.4 Mobile Property Involvement Coding Structure**

Code	Description
1	Mobile property was not involved in ignition, but burned in a fire following ignition.
2	Mobile property was involved in ignition, but it did not burn. Included are fires started by exhaust systems of automobiles and sparks thrown off by trains.
3	Mobile property was involved in ignition, and it burned.
N	No mobile property was involved.
U	Mobile property involvement undetermined or not reported.

**A.6.5.5.2** Table A.6.5.5.2 details the inclusions and exclusions for the mobile property type coding given in 6.5.5.2.

**Table A.6.5.5.2 Mobile Property Type Coding Structure**

Code	Description
1	Passenger Road Vehicles. Passenger vehicles such as automobiles, buses, or motor homes used primarily for transporting people. Included are abandoned vehicles.
11	Automobile. Included are passenger cars, taxicabs, limousines, ambulances, pickup trucks used basically as passenger vehicles, sport utility vehicles (SUVs), and vans.
12	Bus, trackless trolley. Included are school buses.
13	All-terrain vehicles. Included are golf carts, snowmobiles, and dune buggies. Excluded are motorcycles (division 18).
14	Motor home. A mobile unit containing its own motive power. Included are pickup truck-mounted campers.
15	Travel trailer. A portable structure built or placed on a chassis, designed to be pulled by a vehicle, and occupied as a mobile dwelling unit. Excluded are portable industrial units and manufactured homes when in use as dwellings (see 7.4.2.2).
16	Camping trailer. A collapsible portable structure built on a chassis and designed to be pulled by a vehicle.
17	Manufactured home, in transit.

(continues)

Table A.6.5.5.2 *Continued*

Code	Description
	For manufactured homes when set up and used as a dwelling ( <i>see 7.4.2.2</i> ).
18	Motorcycle, trail bike.
10	Passenger road vehicles not able to be classified further.
2	Freight Road Vehicles.
	Vehicles primarily for transporting goods.
	Included are abandoned vehicles.
	Excluded are materials-handling equipment (63).
21	General use single-chassis trucks.
	Included are mail trucks, dump trucks, fire apparatus, contractor's trucks, delivery trucks, and other commercial use trucks.
23	Truck tractor, semi-trailer or non-motorized trailer, or tractor-trailer combination.
24	Tank truck for nonflammable cargo.
25	Tank truck for flammable or combustible liquid, chemical.
26	Tank truck for compressed gas or LP-Gas.
27	Trash truck.
	Included are refuse-rendering and waste-collection vehicles.
28	Commercial mobile business vehicle.
	A mobile business vehicle containing its own motive power.
	Included are lunch and carnival-type cook wagons and kitchens, mobile library or book mobiles, and other motorized self-contained vehicles used for business purposes.
	Excluded are portable industrial units or manufactured homes ( <i>see 7.4.2.2</i> ).
20	Freight road vehicles not able to be classified further.
3	Rail Vehicles.
	Included are railroad, subway, railway, trolley car, and other rail vehicles.
31	Passenger, diner car.
32	Freight, box, hopper car.
33	Tank car.
34	Container, piggyback car.
35	Locomotive, engine.
36	Self-powered rail car.
	Included are trolley and rapid transit cars.
	Excluded are trackless trolleys (division 12).
37	Maintenance equipment, car.
	Included are cabooses and cranes.
30	Rail vehicle not able to be classified further.
4	Water Vessels.
	Included are all water vessels, irrespective of ownership.
41	Motor boat under 65 ft (20 m) length overall.
	Excluded are commercial fishing vessels (division 48).
42	Boat or ship greater in length overall, but under 1000 gross tons (907 metric tons).
	Included are water taxis, industrial vessels, and yachts.
43	Passenger ship greater than or equal to 1000 gross tons
	Included are cruise ships and passenger or vehicle ferries.
44	Tank ship.
45	Personal water craft.
	Included are jet skis, canoes, kayaks, rowboats.
46	Cargo or military ship over 1000 tons (907 metric tons).

(continues)

Table A.6.5.5.2 *Continued*

Code	Description
	Excluded are vessels classified in divisions 41, 42, 43, 44, and 45.
47	Non-self-propelled vessel.
	All vessels without their own motive power.
	Included are towed petroleum balloons, barges, and other towed or towable vessels.
	Excluded are sailboats (division 49).
48	Commercial fishing vessel.
	Included are vessels on inland, coastal, and ocean waters, vessels involved with oyster beds and fish hatcheries, and factory vessels.
	Excluded are fish hatcheries that are a specific property use. ( <i>See 6.6.5, subdivision 665.</i> )
49	Sailboats without auxiliary power.
40	Water vessels not able to be classified further.
5	Air Vehicles.
	Included are vehicles for the transport by air of passengers and freight, whether by regular services or by private charter.
51	Personal, business, utility aircraft under 12,500 lb (5670 kg) gross weight.
52	Personal, business, utility aircraft 12,500 lb (5670 kg) gross weight and over.
53	Commercial aircraft, reciprocating-engine-powered, fixed-wing.
54	Commercial aircraft, jet- and other turbine-powered, fixed-wing.
55	Nonmilitary helicopters, vertical takeoff aircraft.
	Included are gyrocopters.
56	Military fixed-wing aircraft.
	Included are bomber, fighter, patrol, and vertical takeoff and landing (fixed-wing vertical stall) aircraft.
57	Military non-fixed-wing aircraft.
	Included are helicopters.
58	Balloon vehicles.
	Included are hot air balloons, blimps, and the like.
59	Gliders and kites.
50	Air vehicles not able to be classified further.
6	Heavy Industrial and Agricultural Equipment.
61	Construction equipment.
	Included are bulldozers, shovels, graders, scrapers, trenchers, and plows, drilling equipment, pile drivers, tunneling equipment, air compressors, and the like.
63	Materials-handling equipment.
	Included are forklifts, industrial tow motors, loaders, and stackers.
64	Crane.
65	Tractor, harvester, picker.
67	Timber harvest equipment.
60	Heavy industrial and agricultural equipment not able to be classified further.
7	Special Mobile Property and Military Vehicles.
71	Garden equipment.
	Included are power-driven lawn, yard, and snow equipment.
73	Mechanically moved shipping container.
74	Armored equipment.
	Included are armored cars and military vehicles.
75	Manned, unmanned space vehicles.
	Included are rockets and missiles.
	Excluded are launching sites that are a specific property use ( <i>see 6.6.5, subdivision 631</i> ).
76	Aerial tramway vehicle.

(continues)

**Table A.6.5.5.2** *Continued*

Code	Description
77	Non-road rated racing vehicles. Included are vehicles designed only for competition purposes.
70	Special mobile property and military vehicles not able to be classified further.
9	Other Mobile Property Types.
98	Mobile property type not applicable.
99	Mobile property type not able to be classified further.
UU	Mobile property type undetermined or not reported.

The following alphabetical list is based on the logic and definitions presented in 6.5.5.2 for mobile property type. It is designed to assist a user in selecting the proper classification for mobile property type. A person using this list should review the classification assigned in 6.5.5.2 to ensure that there are no qualifications on the definition of the term.

76	Aerial tramway
52	Aircraft: 12,500 lb (5670 kg) and over
56	Aircraft: military
53	Aircraft: reciprocating engine, fixed-wing
54	Aircraft: turbine engine, fixed-wing
51	Aircraft: under 12,500 lb (5670 kg)
55	Aircraft: vertical take-off
13	All-terrain vehicle
11	Ambulance
74	Armored car
56	Attack bomber
11	Automobile, passenger
58	Balloon: hot air
47	Balloon: towed petroleum
47	Barge
47	Barge: tank
18	Bicycle: motorized
58	Blimp
48	Boat: commercial fishing
56	Bomber aircraft
28	Bookmobile
61	Bulldozer
42	Buoy maintenance vessel
12	Bus
11	Cab
37	Caboose
16	Camping trailer
45	Canoe
11	Car, automobile
46	Cargo ship
28	Carnival type cook wagon
48	Clam digging, harvesting vessel
46	Combat ship
65	Combine
28	Commercial mobile building
26	Compressed gas truck
61	Construction equip
34	Container car: railroad
73	Container: shipping
65	Corn picker

(continues)

48	Crab gathering vessel
64	Crane: mobile or fixed
21	Diaper service truck
31	Dining car: railroad
58	Dirigible
61	Dredge
61	Drilling rig: LP or gas
61	Drilling rig: water
21	Dump truck
13	Dune buggy
61	Earth mover
35	Engine: railroad
48	Factory vessel
65	Farm tractor
42	Ferry under 1000 tons (907 metric tons), 65 ft (20 m) or more
56	Fighter aircraft
42	Fire boat 65 ft (20 m) or more
41	Fire boat under 65 ft (20 m)
21	Fire truck
48	Fishing boat: charter
48	Fishing vessel: commercial
48	Fishing vessel: factory-type
44	Flammable liquid tanker ship
63	Forklift truck
32	Freight car: railroad
46	Freighter
25	Fuel oil truck
64	Gantry crane
25	Gasoline tank truck
59	Glider
13	Golf cart
61	Grader
55	Gyrocopters
65	Hay baler
11	Hearse
61	Heavy construction equipment
57	Helicopter: military
55	Helicopter: nonmilitary
58	Hot air balloon
28	Industrial mobile building
63	Industrial truck
45	Jet ski
45	Kayak
59	Kite
71	Lawn mower
28	Library: mobile
63	Lift truck
59	Lighter-than-air machine
11	Limousine
21	Linen service truck
48	Lobster fishing vessel
35	Locomotive
67	Logging equip
26	LP-Gas transport truck
28	Lunch wagon
21	Mail truck
17	Manufactured home in transit
61	Marine pile driving equip
63	Materials handling equip
57	Military helicopter

(continues)

74	Military vehicle	25	Tank truck, flammable liquid
75	Missile: air- or space-borne	24	Tank truck: nonflammable liquid
28	Mobile building	44	Tanker ship
64	Mobile crane	11	Taxicab
17	Mobile home in transit	67	Timber harvest equip
28	Mobile laboratory	12	Tour bus
21	Mobile post office	12	Trackless trolley
28	Mobile teaching facility	65	Tractor
36	Monorail	16	Trailer: camping
18	Motor bike	76	Tramway: aerial
14	Motor home	27	Trash truck
41	Motorboat under 65 ft (20 m)	15	Travel trailer
18	Motorcycle	36	Trolley car
48	Ocean products gathering vessel	21	Truck: cement
31	Passenger railroad car	25	Truck: chemical tank
43	Passenger ship	26	Truck: compressed gas tank
56	Patrol aircraft	21	Truck: farm
45	Personal water craft	25	Truck: flammable liquid
47	Petroleum balloon	63	Truck: forklift
14	Pickup truck camper	21	Truck: general
11	Pickup trucks used as passenger vehicles	21	Truck: mail
61	Pile driving equip	24	Truck: nonflammable liquid tank
28	Professional trailer	23	Truck: semitrailer
77	Racecar	27	Truck: trash
31	Railroad car: passenger	42	Tugboat under 1000 tons (907 metric tons), 65 ft (20 m) or more
34	Railroad container car	41	Tugboat under 65 ft (20 m)
35	Railroad locomotive	55	Vertical takeoff aircraft, nonmilitary
37	Railroad maintenance equip	42	Vessel, water, under 1000 tons (907 metric tons), 65 ft (20 m) or more
31	Railroad rolling stock: passenger	46	Warship
32	Railroad rolling stock: freight	45	Water craft: personal
33	Railroad tank car	61	Well drilling rig: LP or gas
37	Railroad wreck clearing equip	61	Well drilling rig: water
32	Railway express car	48	Whaling: factory vessel
36	Railway, street car	42	Yacht under 1000 tons (907 metric tons), 65 ft (20 m) or more
36	Railway, subway	41	Yacht under 65 ft (20 m)
61	Road grader		
75	Rocket: military		
45	Rowboat		
49	Sailboat w/o aux. power		
41	Sailing vessel, under 65 ft (20 m) w/ aux power		
48	Sardine catching vessel		
12	School bus		
42	Schooner under 1000 tons (907 metric tons), 65 ft (20 m) or more		
13	Scooter: motorized		
23	Semitrailer truck		
42	Ship under 1000 tons (907 metric tons), 65 ft (20 m) or more		
43	Ship: passenger		
44	Ship: tank		
46	Ship: war, combat		
73	Shipping container		
12	Sightseeing bus		
71	Snow blower		
13	Snowmobile		
75	Space vehicle		
41	Speedboat under 65 ft (20 m)		
36	Streetcar		
36	Subway car		
35	Switch engine		
33	Tank car: railroad		

(continues)

**A.6.6** The “property management” data element can be used to distinguish between entities that control or manage property. The source for this data is often an assessor’s office or fire prevention records. In post-incident documentation where the incident spreads over multiple properties, the ownership and/or property management of the property where the incident started should be recorded.

**A.6.7** The identification of the type of material onsite and its use can broaden the understanding of how the property is used. This data element can be used to identify significant amounts of commercial, industrial, energy, or agricultural products or materials on the property, whether or not they became involved in the fire. Information on the materials and products present can assist in targeting fire prevention and suppression programs, as well as in identifying firefighter training and equipment needs.

**A.6.7.2** Table A.6.7.2 details the inclusions and exclusions for the on-site material type coding given in 6.7.2.

**A.7.4.1** The “type of construction” data element is used to measure the type of construction of the structure. The construction types are taken from NFPA 220. Fire-resistive ratings are determined by NFPA 251. Both Type III and Type IV have exterior bearing walls of noncombustible construction having a minimum fire resistance of 2 hours and stability under fire conditions, while roofs, floors, and interior framing are of combustible materials. The combustible materials must be heavier and stronger in Type IV construction.

**A.7.4.2** The data element for method of construction is used to measure the method by which the structure was constructed. In cases where different methods of construction were used, the principal method should be considered as the primary fire defense present in the structure. This data can be used where a more detailed description of construction would be helpful.

Table A.7.4.2 details the inclusions and exclusions for the method of construction coding given in 7.4.2.

**A.7.4.3** The estimated year in which a structure was built or underwent major renovation is an important determinant of the effectiveness of the construction methods and materials used, and of the effectiveness of the building and fire regulations and codes in effect at that time. This information also relates to the construction of manufactured homes. Manufactured homes built before July 1976 were not built to the federal Manufactured Home Construction and Safety Standards. Since that date, manufactured homes built in the United States after this date have been and continue to be built according to the continuously revised federal standards. The date given should represent the date the structure was constructed or was totally renovated and brought up to complete compliance with a recent building code. It should also be noted that the latest building permit on file for the structure might reflect the date of minor renovation or appliance installation, not the actual date of initial construction or major renovation.

**A.7.4.4.1** The total height should not include flagpoles, antennas, and similar structures.

**A.7.4.4.1.1** Number of stories is not considered proper measurement of structure height.

**A.7.4.4.2** Structure depth should not include pits and small vaults or machinery areas where the equipment must be removed to be serviced.

**A.7.4.4.2.1** Number of stories is not considered proper measurement of structure depth.

**A.7.4.5** The total number of stories in a structure is often important in determining the total volume of the structure and its potential fire loading.

**A.7.4.6** There are many reasons for recording the size of floor areas. One is that the total floor area of a structure on all usable stories is useful information in calculating fire flow requirements for the structure. Another reason is that the ground-story floor area of a structure is useful information in understanding the general size of the structure and the resources that might be needed to deal with an emergency at the property. The total floor area involved in the incident is useful in assessing the magnitude of the fire and, when it is compared with the total floor area of the structure, will often influence what the property owner can do in restoring the structure.

**A.7.4.8.1** Structure type is useful in understanding fire behavior and the potential for loss of life and property.

**Table A.6.7.2 On-Site Material Type Coding Structure**

Code		Description
1	Foods, Beverages, Agricultural Materials.	
11	Food.	
111	Baked goods.	
112	Meat products.	
	Included are poultry and fish.	
113	Dairy products.	
114	Produce, fruit or vegetables.	
115	Sugar, spices.	
116	Deli products.	
117	Packaged cereals or grains.	
118	Fat or cooking grease.	
	Included are lard and animal fat.	
110	Food not able to be classified further.	
12	Beverages.	
121	Alcoholic beverage.	
122	Nonalcoholic beverage.	
120	Beverages not able to be classified further.	
13	Agricultural materials.	
131	Trees, plants, flowers.	
132	Feed, grain, seed.	
133	Hay, straw.	
134	Crop, not grain.	
135	Livestock.	
136	Pets.	
137	Pesticides.	
138	Fertilizer.	
130	Agricultural materials not able to be classified further.	
10	Foods, beverages, or agricultural materials not able to be classified further.	
100	Foods, beverages, or agricultural materials not able to be classified further.	
2	Personal and Home Products.	
21	Fabrics.	
211	Curtains, drapes.	
212	Linens.	
213	Bedding.	
214	Cloth, yarn, dry goods.	
210	Fabrics not able to be classified further.	
22	Wearable products.	
221	Clothes.	
222	Footwear.	
223	Eyeglasses.	
225	Perfumes, colognes, cosmetics.	
226	Toiletries.	
220	Wearable products not able to be classified further.	
23	Accessories.	
231	Jewelry, watches.	
232	Luggage, suitcases.	
233	Purses, satchels, briefcases, wallets, belts, backpacks.	
230	Accessories not able to be classified further.	
24	Furnishings.	
241	Furniture.	
242	Beds, mattresses.	
243	Clocks.	
244	Housewares.	
245	Glass, ceramics, china, pottery, stoneware, earthenware.	
246	Silverware.	

(continues)

Table A.6.7.2 *Continued*

	Code	Description
	240	Furnishings not able to be classified further.
20		Personal and home products not able to be classified further.
	200	Personal and home products not able to be classified further.
3	Raw Materials.	
	31	Wood.
	311	Lumber, sawn wood.
	312	Timber.
	313	Cork.
	314	Pulp.
	315	Sawdust, wood chips.
	310	Wood not able to be classified further.
	32	Fibers.
	321	Cotton.
	322	Wool.
	323	Silk.
	320	Fibers not able to be classified further.
	33	Animal skins.
	331	Leather.
	332	Fur.
	330	Animal skins not able to be classified further.
	34	Other raw materials.
	341	Ore.
	342	Rubber.
	343	Plastics.
	344	Fiberglass.
	345	Salt.
	30	Raw material not able to be classified further.
	300	Raw material not able to be classified further.
4	Paper Products, Rope.	
	41	Paper products.
	411	Newspaper, magazines.
	412	Books.
	413	Greeting cards.
	414	Paper — rolled.
	415	Cardboard.
	416	Packaged paper products, including stationery.
	417	Paper records or reports.
	410	Paper products not able to be classified further.
	42	Rope, twine, cordage.
	421	Rope, twine, cordage.
	40	Paper products or rope not able to be classified further.
	400	Paper products or rope not able to be classified further.
5	Flammables, Chemicals, Plastics.	
	51	Flammable or combustible liquids.
	511	Gasoline, diesel fuel.
	512	Flammable liquid.
		Excluded is gasoline (511).
	513	Combustible liquid.
		Included is heating oil.
		Excluded is diesel fuel (511).
	514	Motor oil.
	515	Heavy oils, grease, non-cooking-related.
	516	Asphalt.
	517	Adhesive, resin, tar.
	510	Flammable or combustible liquids not able to be classified further.

(continues)

Table A.6.7.2 *Continued*

	Code	Description
	52	Flammable gases.
	521	Natural gas.
	522	LP-Gas, butane, propane.
	523	Hydrogen gas.
	520	Flammable gas not able to be classified further.
	53	Solid fuel — coal type.
	531	Charcoal.
	532	Coal.
	533	Peat.
	534	Coke.
	530	Solid fuel — coal type not able to be classified further.
	54	Chemicals or drugs.
	541	Hazardous chemicals.
	542	Nonhazardous chemicals.
	543	Cleaning supplies.
	544	Pharmaceuticals, drugs.
	545	Illegal drugs.
	540	Chemicals or drugs not able to be classified further.
	55	Radioactive materials.
	551	Radioactive materials.
	50	Flammables, chemicals, plastics not able to be classified further.
	500	Flammables, chemicals, plastics not able to be classified further.
6	Construction, Machinery, Metals.	
	61	Machinery or tools.
	611	Industrial machinery.
	612	Machine parts.
	613	Tools (power and hand tools).
	610	Machinery or tools not able to be classified further.
	62	Construction supplies.
	621	Hardware products.
	622	Construction and home improvement products.
		Excluded are pipes and fittings (623), electrical parts and supplies (626), insulation (627), and lumber (311).
	623	Pipes, fittings.
	624	Stone-working materials.
	625	Lighting fixtures and lamps.
	626	Electrical parts, supplies, equipment.
	627	Insulation.
	628	Abrasives.
		Included are sandpaper and grinding materials.
	629	Fencing, fence supplies.
	620	Construction supplies not able to be classified further.
	63	Floor and wall coverings.
	631	Carpets, rugs.
	632	Linoleum, tile.
	633	Ceramic tile.
	634	Wallpaper.
	635	Paint.
	630	Floor and wall coverings not able to be classified further.
	64	Metal products.
	641	Steel, iron products.

(continues)



Table A.6.7.2 *Continued*

Code	Description
642	Nonferrous metal products. Included are aluminum products (no combustible metals).
643	Combustible metals products. Included are magnesium and titanium.
640	Metal products not able to be classified further.
60	Construction, machinery, metals not able to be classified further.
600	Construction, machinery, metals not able to be classified further.
7	Appliances, Electronics, Medical and Laboratory Products.
71	Appliances and electronics.
711	Appliances.
712	Electronic parts, supplies, equipment. Included are components such as circuit boards, radios, and computers.
713	Electronic media. Included are diskettes, CD-ROMs, and recorded music.
714	Photographic equipment, supplies, materials. Included are cameras and film. Excluded are digital electronic cameras (712) and electronic storage media (713).
710	Appliances and electronics not able to be classified further.
72	Medical and laboratory products.
721	Dental supply.
722	Medical supply. Included are surgical products.
723	Optical products.
724	Veterinary supplies.
725	Laboratory supplies.
720	Medical and laboratory products not able to be classified further.
70	Appliances, electronics, and medical and laboratory products not able to be classified further.
700	Appliances, electronics, and medical and laboratory products not able to be classified further.
8	Vehicles and Vehicle Parts.
81	Motor vehicles and motor vehicle parts.
811	Autos, trucks, buses, recreational vehicles. Included are riding mowers and farm vehicles.
812	Construction vehicles.
813	Motor vehicle parts. Excluded are tires (814).
814	Tires.
810	Motor vehicles and motor vehicle parts not able to be classified further.
82	Watercraft.
821	Boats, ships.
820	Watercraft not able to be classified further.
83	Aircraft.
831	Planes, airplanes.
832	Helicopters.
830	Aircraft not able to be classified further.
84	Rail.
841	Trains, light rail, rapid transit cars.
842	Rail equipment.

(continues)

Table A.6.7.2 *Continued*

Code	Description
840	Rail not able to be classified further.
85	Nonmotorized vehicles.
851	Bicycles, tricycles, unicycles. Included are tandem bicycles.
850	Nonmotorized vehicles not able to be classified further.
80	Vehicles and vehicle parts not able to be classified further.
800	Vehicles and vehicle parts not able to be classified further.
9	Other Products.
91	Containers, packing materials.
911	Bottles, barrels, boxes.
912	Packing material.
913	Pallets.
910	Containers, packing materials not able to be classified further.
92	Previously owned products.
921	Antiques.
922	Collectibles.
923	Used merchandisc.
920	Previously owned products not able to be classified further.
93	Ordnance, explosives, fireworks.
931	Guns.
932	Ammunition.
933	Explosives.
934	Fireworks commercially made.
935	Rockets, missiles.
930	Ordnance, explosives, fireworks not classified above.
94	Recreational or art products.
941	Musical instruments.
942	Hobbies, crafts. Excluded is artwork (943).
943	Art supplies and artwork. Included are finished works, paint, and finishing materials.
944	Sporting goods. Included are balls, nets, rackets, and protective equipment used in sport.
945	Camping, hiking, outdoor products. Included are related equipment such as portable stoves and rope.
946	Games, toys.
940	Recreational or art products not able to be classified further.
95	Mixed sales products.
951	Office supplies.
952	Restaurant supplies, not including food.
950	Mixed sales products not able to be classified further.
96	Discarded material.
960	Discarded material, other.
961	Junkyard materials.
962	Recyclable materials. Included are materials gathered specifically for the purpose of recycling.
963	Trash, not recyclable.
00	On-site materials, other.
000	On-site materials not able to be classified further.

(continues)

**Table A.6.7.2** *Continued*

Code	Description
NNN	No on-site materials.
UUU	On-site material undetermined or not reported.

**Table A.7.4.2 Method of Construction Coding Structure**

1	Site-built structure.
2	Factory-built, site-installed, or assembled structure. Included are panelized structures, modular structures, and industrialized units. Also included are industrialized units designed to be portable in nature and located on a specific property on a temporary basis. Excluded are manufactured homes (3).
3	Manufactured home. Included are all manufactured homes built on a permanent chassis, whether or not constructed to the Federal Manufactured Home Construction Safety Standards.
0	Method of construction not able to be classified further.
U	Method of construction undetermined or not reported.

**A.7.4.8.2** Table A.7.4.8.2 details the inclusions and exclusions for the structure type coding given in 7.4.8.2.

**A.7.4.9.3** Property values, even though they can be estimates that change significantly with time, provide vital trending and management information necessary for the development and allocation of resources.

**A.7.4.10** Structure status, when used in conjunction with specific property use (*see Chapter 6*), can help to identify the likely effectiveness of fire protection that existed prior to or at the time of an incident.

Table A.7.4.10 details the inclusions and exclusions for the structure status coding given in 7.4.10.

**A.7.5.1.1** Interior finish is the material used to cover the walls, the ceiling, and the floor of an area. Thick surfacing such as paneling and carpet are included. Thin surfacing such as wallpaper and paint are excluded.

**A.7.6.1.2** Fire division walls are walls with a 2-hour or longer fire rating. Fire-rated walls are walls with a 30-minute or longer fire rating.

**A.8.1** The “general property use” data element classifies the entire multi-use property or group of buildings, and the “specific property” use data element classifies that portion of a multi-use property having one fixed use or occupancy. The data element “area of origin or release” is used to identify that portion of the property devoted to a specific use or process. For example, an office building could be the general property, a restaurant in that office building could be the specific property, and the kitchen in that restaurant, if an ignition occurs there, is the area of origin or release. The area of origin is a room, a space or portion of a room, a vehicle or portion of a vehicle, or an open area devoted to a single use.

**Table A.7.4.8.2 Structure Type Coding Structure**

1	Enclosed building. Included are buildings with earthen walls and fabricated roofs and buildings that are totally below grade but that are designed for gathering of people, such as subway terminals and underground buildings. Excluded are underground structures that persons may work in or pass through but which are not designed for occupancy by the public (7).
2	Portable or mobile structure. Included are mobile homes, campers, portable buildings, and the like that are used as permanent fixed structures.
3	Open structure. Included are roofs with no walls, open steel framing, bridges, trestles, outdoor process equipment, and outdoor tanks.
4	Air-supported structure.
5	Tent. Included are membrane structures.
6	Open platform. Included are piers and wharves without superstructure, and loading docks without roofs.
7	Underground structure work areas. Included are tunnels and mines. Excluded are subway terminals and underground buildings (1).
8	Connective structure. Included are fences, telephone poles, and pipelines.
0	Structure type not able to be classified further.
N	Not a structure.
U	Structure type undetermined or not reported.

The heat of ignition or release of hazardous materials can originate in equipment that fails and in equipment that operates properly. When a piece of equipment is identified, its power source and portability should also be recorded. When ignition occurs, the form of the heat energy is classified using the data element “heat source.” Regardless of whether or not equipment is involved in the ignition or release, there is always a heat source. For a fire to start, it needs heat that ignites a kindling fuel. The kindling fuel is in the form of a particular item, identified as the data element “item first ignited,” and is made of a particular substance or of a particular composition that is identified as the data element “type of material first ignited.” The type or composition of material is typically the material in its raw, common, or natural state. Finally, there is a cause of ignition — that is, what circumstance created the environment for the heat and the material to be related so that ignition occurred. There are often physical factors and human factors that contribute to the ignition and the data elements; “physical factors contributing to ignition” and “human factors contributing to ignition” data elements are used to classify that data.

**Table A.7.4.10 Structure Status Coding Structure**

1	Under construction. The specific property use should show its intended use.
2	In use, with furnishings in place and the property being routinely used.
3	Idle, with furnishings in place but the property not being routinely used. Included are seasonal properties during the off-season.
4	Under major renovation. The specific property use should show its new intended use.
5	Vacant, but property secured and maintained. The specific property use should show its last significant use.
6	Vacant, with property unsecured and not maintained. The specific property use should show its last significant use.
7	Being demolished. The specific property use should show its last significant use.
0	Structure status not able to be classified further.
U	Structure status undetermined or not reported.

**A.8.3.2** The following alphabetical list is based on the logic and definitions presented in 8.3.2 for area of fire origin or release of hazardous materials. It is designed to assist a user in selecting the proper classification for area of fire origin or release of hazardous materials. A person using this list should review the classification assigned in 8.3.2 to ensure that there are no qualifications on the definition of the term.

67	Air pressurized area
53	Air shaft
55	Air-conditioning duct
85	Aircraft cockpit
11	Arena
16	Art gallery
46	Ash pit
11	Assembly area over 100 persons
12	Assembly area over 100 persons without fixed seats
13	Assembly area under 100 persons
38	Assembly area: manufacturing
21	Attic for sleeping
43	Attic for storage
74	Attic: unused
11	Auditorium
85	Automobile dashboard area
78	Awning
36	Backstage
12	Ballroom
44	Bank vault
23	Bar
28	Barber shop
22	Barracks
	Basement — classify as actual use of area
36	Basketball floor

(continues)

25	Bathroom
28	Beauty shop
21	Bedroom
62	Boiler room
12	Bowling alley
36	Boxing ring
85	Bridge of ship
81	Cab of truck
55	Cable way
23	Cafeteria
23	Canteen
82	Cargo area: vehicle
47	Carport
73	Ceiling and floor assembly
74	Ceiling and roof assembly
21	Cell
11	Chapel
25	Check room
38	Chemical reactor
57	Chimney
74	Church steeple
54	Chute: mail, laundry
13	Classroom
25	Cloak room
42	Closet
85	Cockpit of plane
41	Cold storage room
14	Common room
46	Compactor
35	Computer area
73	Concealed floor/ceiling space
74	Concealed roof/ceiling space
75	Concealed wall space
52	Conduit shaft
35	Control center
58	Conveyor
24	Cooking area
01	Corridor
93	Court
71	Crawl space
74	Cupola
12	Dance hall
35	Data processing center
14	Den
33	Dentist's treatment room
23	Dining area, room
56	Display window
33	Doctor's treatment room
22	Dormitory
36	Dressing room
92	Driveway
55	Duct space
51	Dumbwaiter, shaft
63	Electrical panel area
35	Electronic equipment area
51	Elevator
61	Elevator machinery room
68	Enclosure with enriched atmosphere
67	Enclosure with pressurized air
83	Engine area
61	Engine room
05	Entrance way

(continues)

04	Escalator way	34	Operating room, theater
55	Exhaust duct	25	Outhouse
16	Exhibit space	68	Oxygen atmosphere area
72	Exterior balcony	45	Packing department
86	Exterior of vehicle	65	Paint spraying for repair
77	Exterior roof surface	38	Painting, coating area: production
76	Exterior wall surface	43	Pantry
76	External trim	94	Park
14	Family room	92	Parking lot
94	Farmyard	81	Passenger area: vehicle
94	Field	94	Pasture
02	Fire escape	21	Patient room
33	First aid room	93	Patio
73	Floor/ceiling assembly	36	Performance area
84	Fuel tank, line	28	Personal service area
62	Furnace room	32	Photographic room
47	Garage	52	Pipe shaft
46	Garbage chute	11	Place of worship
12	Gymnasium	72	Porch
01	Hallway	25	Portable toilet
61	Head house	25	Powder room
28	Health club	32	Printing room
55	Heating duct	38	Process production
62	Heating equipment area	37	Projection room
92	Highway	92	Public way
36	Ice rink	61	Pump room
64	Incinerator room	35	Radar room
46	Industrial waste container	91	Railroad right of way
24	Kitchen	02	Ramp: exterior
31	Laboratory	03	Ramp: interior
54	Laundry chute	94	Range land
26	Laundry room	45	Receiving area
25	Lavatory	44	Records storage room
94	Lawn	34	Recovery room
11	Lecture hall	14	Recreation room
16	Library	61	Refrigeration room
53	Light shaft	65	Repair shop
14	Living room	25	Rest room
82	Load carrying area: vehicle	12	Roller rink
45	Loading area, bay	74	Roof member
05	Lobby	77	Roof surface: exterior
25	Locker room	74	Roof/ceiling assembly
21	Lockup	46	Rubbish area
14	Lounge area	46	Rubbish container
23	Lunchroom	15	Sales area
38	Machine or processing area	25	Sauna bath
61	Machine room: building service	51	Shaft: dumbwaiter, elevator
54	Mail chute	53	Shaft: light
45	Mail room	52	Shaft: pipe, vent
65	Maintenance shop	85	Ship bridge
43	Maintenance supply room	45	Shipping area
01	Mall	15	Shop
38	Manufacturing area	25	Shower room
28	Massage parlor	15	Showroom area
13	Meeting room	14	Sitting room
13	Multipurpose room	22	Sleeping area, 5 or more persons
12	Multi-use room without fixed seats	21	Sleeping area, under 5 persons
16	Museum	37	Spotlight area
14	Music room	38	Spray painting: production
33	Nurse's office: school	65	Spray painting: repair
27	Office	36	Stage
94	Open area	37	Stage light area

(continues)

(continues)

02 Stairway: exterior  
 03 Stairway: interior  
 74 Steeple  
 82 Storage area: vehicle  
 41 Storage bin, tank  
 41 Storage of processed goods  
 43 Storage of supplies  
 15 Store  
 92 Street  
 71 Substructure space  
 43 Supply storage area  
 17 Swimming pool  
 63 Switchgear area  
 41 Tank: storage  
 35 Telephone booth  
 35 Telephone equipment  
 93 Terrace  
 66 Test cell  
 11 Theater  
 25 Toilet: portable  
 43 Tool room  
 63 Transformer vault  
 85 Transportation equipment control area  
 84 Transportation equipment fuel area  
 46 Trash chute, room  
 33 Treatment room  
 76 Trim: external  
 81 Truck cab  
 82 Truck cargo area  
 82 Trunk: vehicle  
 14 TV room  
 96 Under construction, renovation  
 52 Utility shaft  
 98 Vacant area  
 94 Vacant lot  
 44 Vault: records  
 63 Vault: transformer  
 82 Vehicle cargo area  
 85 Vehicle control area: non-passenger  
 83 Vehicle engine area  
 86 Vehicle exterior  
 84 Vehicle fuel tank, line  
 81 Vehicle passenger area  
 83 Vehicle running gear, wheels  
 47 Vehicle storage area  
 52 Vent shaft  
 55 Ventilation duct  
 14 Waiting room  
 75 Wall assembly  
 22 Ward  
 26 Wash house  
 25 Washroom  
 46 Waste container  
 46 Waste paper storage area  
 62 Water heater area  
 65 Welding shop for maintenance  
 38 Welding with production  
 83 Wheels  
 95 Wildland area  
 95 Woods  
 38 Workroom: production  
 65 Workshop: maintenance

**A.8.4.3.2** The following alphabetical list is based on the logic and definitions presented in 8.4.3.2 for equipment identification. It is designed to assist a user in selecting the proper classification for equipment identification. A person using this list should review the classification assigned in 8.4.3.2 to ensure that there are no qualifications on the definition of the term.

265 Adapter: electrical  
 721 Adding machine  
 513 Agricultural elevator or conveyor  
 341 Air compressor  
 111 Air conditioner  
 881 Airplane: model  
 218 Aluminum branch circuit wiring  
 748 Amplifier  
 431 Amusement ride equip  
 722 Answering machine: telephone  
 444 Arcade game  
 253 Arrester, grounding device  
 871 Ashtray  
 325 Asphalt-saturating coating machine  
 343 Atomizing equip  
 861 Automatic door opener  
 851 Baby bottle warmer  
 234 Ballast: fluorescent lighting  
 643 Barbecue  
 144 Baseboard heater  
 279 Battery  
 278 Battery charger, rectifier  
 365 Bearing  
 411 Bed: powered  
 362 Belt power transfer equip  
 374 Bench motor  
 852 Blanket: heated  
 611 Blender  
 362 Block power transfer equip  
 333 Blowtorches  
 881 Boat: model  
 132 Boiler: power, process, heating  
 365 Brake  
 218 Branch circuit wiring: aluminum  
 217 Branch circuit wiring: copper  
 641 Bread maker machine  
 126 Brick chimney  
 639 Broiler: countertop  
 831 Broom: elec  
 533 Brush grinder or chipper  
 316 Buffer  
 875 Bug zappers  
 238 Bulb: elec  
 333 Bunsen burners  
 866 Burglar alarm system  
 333 Burner: Bunsen  
 373 Butane regulator and hose connectors  
 751 Cable converter box  
 362 Cable power transfer equip  
 721 Calculator  
 756 Camcorder, video camera  
 757 Camera: photographic or digital  
 647 Camping stove

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621	Can opener	332	Cutting torch
635	Canner	242	Decorative lights, line voltage
377	Car washing equip	243	Decorative or landscape lighting, low voltage
371	Carding machine	642	Deep fryer
832	Carpet cleaning equip	116	Dehumidifier
723	Cash register	412	Dental equip
355	Casting equip	411	Dental powered bed or chair
414	CAT scan equip	231	Desk lamp
142	Catalytic heater	413	Dialysis equip
741	CD player (audio)	357	Digester
712	CD-ROM device: external	757	Digital camera
522	Chain saw	321	Dipper: paint
411	Chair: powered	272	Disconnect equipment: overcurrent
125	Chimney connector	651	Dishwasher
127	Chimney flue	712	Disk drive: external
126	Chimney: brick, stone, masonry	356	Distilling equip
127	Chimney: metal	215	Distribution panel: circuit breaker
533	Chipper for brush	216	Distribution panel: fuse type
242	Christmas lights: line voltage	271	Distribution transformer
873	Cigarette lighter	861	Door opener: automatic
215	Circuit breaker distribution panel	862	Door opener: garage
218	Circuit wiring: aluminum	315	Drill
217	Circuit wiring: copper	348	Drilling machy or equip
891	Clock	811	Dryer: clothes
811	Clothes dryer	654	Duct: exhaust fan/grease hood
855	Clothes iron	152	Duct: hot air
854	Clothes steamer	346	Dumbwaiter
814	Clothes washing machine	712	DVD device: external
325	Coating machine: asphalt-saturating, rubber-spreading	525	Edger: lawn
322	Coating machine: paint	221	Electric dryer receptacle
612	Coffee grinder	251	Electric fence
631	Coffee maker	213	Electric meter or meter box
841	Comb	265	Electrical adapter
511	Combine	244	Electrical neon lighting
341	Compressor: air	221	Electrical outlet, receptacle
342	Compressor: gas	213	Electrical service entrance conductors
711	Computer	245	Electrical sign
713	Computer modem: external	222	Electrical switch
714	Computer monitor	211	Electrical utility line
715	Computer printer	212	Electrical wiring: distribution transformer to structure
716	Computer projection device	214	Electrical wiring: meter box to distribution panel
125	Connector: chimney or vent	212	Electrical wiring: utility pole to structure
252	Control device: traffic	843	Electrolysis equip
423	Control panels with multiple TV monitors	451	Electron microscope
275	Converter, inverter	732	Electronic piano
513	Conveyor: agricultural	513	Elevator: agricultural
361	Conveyor: industrial or materials-handling	433	Elevator: passenger or freight
635	Cooker: pressure	748	Equalizers
647	Cooktop	434	Escalator
117	Cooler: evaporative	117	Evaporative cooler
117	Cooling tower	654	Exhaust fan: grease hood/duct
724	Copier	263	Extension cord: flat
217	Copper branch circuit wiring	264	Extension cord: round
371	Cotton gins	712	External computer storage device
639	Countertop broiler	358	Extractor
346	Crane: permanently installed	122	Factory-built fireplace
518	Cream separator	113	Fan
538	Cultivator	513	Farm elevator or conveyor
842	Curling iron	521	Farm sprayer
314	Cutting tool	725	Fax machine

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515	Feed grinder, mixer, blender	152	Heat pipe
251	Fence, elec	112	Heat pump
752	Film projector	146	Heat tape
866	Fire alarm	852	Heated blanket
874	Fire extinguishing equip	141	Heater
122	Fireplace: factory-built	144	Heater: baseboard
123	Fireplace: insert/stove	142	Heater: catalytic
121	Fireplace: masonry	131	Heater: central
232	Flashlight	141	Heater: local heating, built-in
263	Flat extension cord	143	Heater: oil-filled
833	Floor buffer	141	Heater: wall or floor
833	Floor cleaner	132	Heating boiler
141	Floor furnace	853	Heating pad
231	Floor lamp	124	Heating stove
833	Floor waxer	351	Heat-treating equip
322	Flow coating machine: paint	643	Hibachi
234	Fluorescent lighting fixture, ballast	346	Hoist for equip or materials
611	Food mixer	242	Holiday lighting: line voltage
611	Food processor	373	Hose connectors: fuel gas, flexible
632	Food warmer	152	Hot air duct
355	Forging equip	633	Hot plate
652	Freezer separate from refrigerator	821	Hot tub
656	Freezer/refrigerator	151	Hot water heater
433	Freight elevator	131	Humidifier with central heating system
644	Frying pan	114	Humidifier: non-heat-producing
131	Furnace: central heating	347	Hydraulic rescue tools
131	Furnace: floor or wall	655	Ice maker separate from refrigerator
353	Furnace: industrial or process	233	Incandescent lighting fixture
141	Furnace: local heating, built-in	352	Incinerator
333	Furnace: plumber	361	Industrial conveyor
216	Fuse-type distribution panel	875	Insect trap
862	Garage door opener	151	Instant hot water heater
653	Garbage disposer	867	Intercom
521	Garden sprayer	375	Internal combustion engine (non-vehicular)
358	Garnetting equip	275	Inverter, converter
342	Gas compressor	115	Ionizer
865	Gas detector (in system)	855	Iron
864	Gas detector (self-contained)	317	Jackhammer
348	Gas drilling equip	347	Jacking equip
373	Gas regulator	893	Jewelry cleaning machine
274	Generator	313	Jointer
513	Grain elevator	611	Juicer
654	Grease hood/duct exhaust fan	636	Kettle
645	Griddle	733	Keyboard: musical
643	Grill	353	Kiln
316	Grinder: abrasive	622	Knife
515	Grinder: feed	623	Knife sharpener
533	Grinder: wood, brush, or stumps	452	Laboratory equip
223	Ground-fault interrupter: plug-in	235	Lamp: halogen
223	Ground-fault interrupter: wired-in	231	Lamp: tabletop, floor, or desk
253	Grounding device	236	Lamps: sodium, mercury vapor
731	Guitar	243	Landscape lighting, low voltage
892	Gun	525	Landscape trimmer, edger
841	Hair brush	232	Lantern
844	Hair curler warmer	742	Laser disk player
845	Hair dryer	312	Lathe
235	Halogen lighting fixture or lamp	524	Lawn mower
317	Hammer	525	Lawn trimmer, edger
512	Hay processing equip	531	Lawn vacuum
865	Heat detector (in system)	716	LCD panel
145	Heat lamp	532	Leaf blower

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533	Leaf mulchers	322	Paint flow coating machine
346	Lift for equip or materials	323	Paint mixing machine
433	Lift, elevator: passenger or freight	324	Paint sprayer
238	Light bulb	726	Paper shredder
222	Light switch	433	Passenger elevator
873	Lighter: cigarette or pipe	517	Pasteurizer
872	Lighter: utility	422	PBX telephone equip
233	Lighting fixture: incandescent	745	Phonograph
234	Lighting fixture: fluorescent	442	Photo processing equip
235	Lighting fixture: halogen	757	Photographic camera and equip
236	Lighting fixtures: sodium, mercury vapor	371	Picking machine
243	Lighting: low voltage, decorative or landscape	537	Pile driver
253	Lightning rod, arrester/grounding device	444	Pinball machines
242	Lights: Christmas or holiday, line voltage	873	Pipe lighter
535	Log splitter	313	Planer
273	Low-voltage transformer (not more than 50 volts)	732	Player piano
373	LP-Gas regulator and hose connectors	261	Plug or power cord detachable from appliance
846	Makeup mirror — lighted	262	Plug or power cord permanently attached to appliance
126	Masonry chimney	333	Plumber furnace
121	Masonry fireplace	316	Polisher
361	Materials-handling conveyor	634	Popcorn popper
852	Mattress pad	237	Portable or movable work light, trouble light
414	Medical imaging equip	537	Post driver
415	Medical monitoring equip	727	Postage meter equip
411	Medical powered bed or chair	536	Post-hole auger
418	Medical sterilizer	636	Pot: warming
236	Mercury vapor lighting fixtures or lamps	132	Power boiler
213	Meter or meter box	261	Power cord or plug detachable from appliance
442	Microfilm processing equip	262	Power cord or plug permanently attached to appliance
441	Microfilm, microfiche viewing equip	314	Power cutting tool
657	Microwave oven	315	Power drill, screwdriver
517	Milk pasteurizers	317	Power hammer, jackhammer
516	Milking machine	312	Power lathe
846	Mirror: lighted	318	Power nail gun, stud driver, stapler
611	Mixer: food	316	Power sander, grinder, buffer, polisher
323	Mixing machine: paint	311	Power saw
881	Model vehicles	313	Power shaper, router, jointer, planer
713	Modem: external	276	Power supply: uninterruptible
355	Molding equip	363	Power take-off
714	Monitor: computer	362	Power transfer equip: ropes, cables, blocks, belts
423	Monitoring station: security	347	Powered jacking equip
374	Motor: separate	364	Powered valves
524	Mower, lawn	881	Powered vehicle: model
414	MRI equip	411	Powered wheelchair
533	Mulcher	635	Pressure cooker
733	Musical keyboard	715	Printer: computer
733	Musical synthesizer	376	Printing press
318	Nail gun	132	Process boiler
373	Natural gas regulator and hose connectors	716	Projector: computer
244	Neon lighting	752	Projector: film, slide, overhead
241	Nightlight	373	Propane regulator and hose connectors
143	Oil-filled heater	344	Pump
732	Organ	426	Radar equip
221	Outlet: elec	417	Radiation therapy equip
244	Outline lighting	152	Radiator on heating system
646	Oven: cooking food	446	Radio telescope
353	Oven: industrial or process	743	Radio: AM/FM
272	Overcurrent disconnect equipment	744	Radio: two-way
752	Overhead projector	417	Radiological equip
416	Oxygen administration equip		
321	Paint dipper		

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648	Range with oven and cooking surface	221	Stove receptacle
847	Razor	124	Stove: heating
357	Reactor	127	Stovepipe
748	Receiver	318	Stud driver
221	Receptacle: elec	425	Studio-type sound recording/modulating equip
745	Record player	424	Studio-type TV camera
656	Refrigerator	848	Sunlamp
656	Refrigerator/freezer	848	Suntan equip
373	Regulator: fuel gas	277	Surge protector
347	Rescue tools: hydraulic	822	Swimming pool equip
881	Rocket: model	222	Switch, light
362	Rope power transfer equip	733	Synthesizer, musical
646	Rotisserie	231	Table lamp
264	Round extension cord	712	Tape drive: external
313	Route	749	Tape recorder or player
325	Rubber-spreading coating machine	354	Tar kettle
832	Rug shampooers	354	Tarpot
316	Sander	631	Teapot
311	Saw	722	Telephone
522	Saw: chain	422	Telephone switching gear
894	Scissors	446	Telescope
315	Screwdriver	753	Television
423	Security monitoring station	424	Television camera: studio-type
374	Separate motor	372	Testing equip
895	Sewing machine	419	Therapeutic equip
313	Shaper	868	Thermostat
623	Sharpener: knife	511	Threshing machine
847	Shaver	538	Tiller
727	Shipping meter equip	876	Timer
896	Shoe polisher	637	Toaster
345	Shop vacuum	638	Toaster oven
726	Shredder: paper	849	Toothbrush
245	Sign: elec	333	Torch: blow
514	Silo loader, unloader	332	Torch: cutting
151	Sink-mounted instant hot water heater	331	Torch: welding
244	Skeleton neon or outline elec discharge lighting	882	Toy, powered
432	Ski lift	252	Traffic control device
644	Skillet	273	Transformer, not over 50 volts
752	Slide projector	271	Transformer: distribution type
636	Slow cooker	421	Transmitter
863	Smoke alarm (self-contained)	812	Trash compactor
865	Smoke detector (in system)	525	Trimmer: lawn
534	Snow blower, thrower	237	Trouble light: portable or movable
236	Sodium, mercury vapor lighting fixtures or lamps	745	Turntable
334	Soldering equipment	423	TV monitor array
358	Solvent extractor	728	Typewriter
425	Sound recording/modulating equip: studio-type	414	Ultrasound equip
821	Spa	276	Uninterruptible power supply (UPS)
144	Space heater: baseboard	872	Utility lighter
142	Space heater: catalytic	211	Utility line: elec
143	Space heater: oil-filled	834	Vacuum cleaner
747	Speakers: audio — separate components	345	Vacuum: shop, wet/dry
521	Sprayer, farm or garden	754	VCR or VCR/TV combination
324	Sprayer: paint	443	Vending machine
318	Stapler	125	Vent connector
649	Steam table	756	Video camera, camcorder
152	Steamline	755	Video game — electronic
748	Stereo equip	645	Waffle iron
418	Sterilizer: medical	141	Wall heaters
897	Sterilizer: nonmedical	222	Wall switch
126	Stone chimney	623	Warmer: food

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649	Warming drawer/table
636	Warming pot
813	Washer/dryer combination
814	Washing machine — clothes
358	Waste recovery machine
445	Water cooler
348	Water drilling equip
445	Water fountain
151	Water heater
151	Waterbed heaters
371	Weaving machine
523	Weed burner
331	Welding torch
345	Wet/dry vacuum (shop vacuum)
411	Wheelchair: powered
821	Whirlpool
212	Wires: distribution transformer to structure
212	Wires: utility pole to structure
218	Wiring: aluminum branch circuit
217	Wiring: copper branch circuit
214	Wiring: meter box to distribution panel
644	Wok
883	Woodburning kit
237	Work light: portable or movable
417	X-ray equip

**A.8.5.2** Table A.8.5.2 details the inclusions and exclusions for the heat source coding given in 8.5.2.

**Table A.8.5.2 Heat Source Coding Structure**

1	Heat Source from Operating Equipment.
11	Spark, ember, or flame from operating equipment.
12	Radiated, conducted heat from operating equipment.
13	Electrical arcing.
10	Heat source from operating equipment not able to be classified further.
4	Hot or Smoldering Object.
41	Heat, spark from friction. Included are overheated tires.
42	Molten, hot material. Included are molten metal, hot forging, and hot glass, hot metal fragment, brake shoe, hot box, and slag from arc welding operations.
43	Hot ember or ash. Included are hot coals, coke, and charcoal from a previous fire; embers and ash discarded from solid fuel-fired equipment; and sparks or embers from a chimney that ignites the roof of the same structure. Excluded are embers accidentally escaping from operating equipment (11) and embers or sparks from an exposure fire (83) or embers and sparks from smoking materials (division 6).
40	Hot or smoldering object not able to be classified further.

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**Table A.8.5.2 Continued**

5	Heat from Explosives or Fireworks.
51	Munitions. Included are bombs, ammunition, and military rockets. Excluded is tracer or incendiary ammunition (52).
52	Tracer or incendiary ammunition.
53	Blasting agent, primer cord, black powder fuse. Included are fertilizing agents, ammonium nitrate, and sodium, potassium, or other chemical agents.
54	Fireworks. Included are sparklers, paper caps, party poppers, and firecrackers.
55	Model and amateur rockets.
56	Incendiary device. Included are Molotov cocktails and arson sets.
50	Explosive, fireworks not able to be classified further.
6	Heat from Other Open Flame or Smoking Materials. Included is heat from material in use or after use.
61	Cigarette.
62	Pipe or cigar.
63	Heat from undetermined smoking material.
64	Match.
65	Lighter. Included are cigarette lighters, cigar lighters, novelty lighters, and fireplace lighters.
66	Candle, taper.
67	Warning or road flare.
68	Backfire from internal combustion engine. Excluded are flames and sparks from an exhaust system (11).
69	Flames and torches used for lighting. Included are gas lights and gas/liquid-fueled lanterns.
60	Heat from open flame or smoking materials not able to be classified further.
7	Heat from Chemical or Natural Source.
71	Sun's heat. Usually magnified through items such as glass, bottles.
72	Spontaneous ignition, chemical reaction.
73	Lightning discharge.
74	Static discharge. Excluded are electrical arcs (13) or sparks (11).
70	Heat from chemical or natural source not able to be classified further.
8	Heat Spread from Another Fire.
81	Heat from direct flame, convection currents spreading from another fire.
82	Radiated heat from another fire. Excluded is heat from operating equipment (12).
83	Heat from flying brand, ember, spark. Excluded are embers or sparks from a chimney igniting the roof of the same structure (43).
84	Conducted heat from another fire.

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**Table A.8.5.2** *Continued*

80	Heat spreading from another fire not able to be classified further.
9	Other Heat Sources.
99	Multiple heat sources including multiple ignitions. This subdivision should be used only where there are multiple fires started at approximately the same time on the same property and more than one heat source was initially involved. If one major heat source was involved, the appropriate classification should be used.
00	Heat source not able to be classified further.
UU	Heat source undetermined or not reported.

The following alphabetical list is based on the logic and definitions presented in 8.5.2 for heat source. It is designed to assist a user in selecting the proper classification for heat source. A person using this list should review the classification assigned in 8.5.2 to ensure that there are no qualifications on the definition of the term.

51	Ammunition
52	Ammunition: tracer or incendiary
13	Arcing: electrical
43	Ash
68	Backfire: internal comb engine
53	Black powder fuse
53	Blasting agent
51	Bomb
42	Brake shoes
42	Brakes, hot
66	Candle
53	Chemical agent
72	Chemical reaction
62	Cigar
61	Cigarette
65	Cigarette lighter
12	Conducted heat
84	Conducted heat from exposure
81	Convection currents from exposure
81	Direct flame from exposure
13	Electrical arcing
83	Ember from exposure
11	Ember from operating equipment
12	Ember from welding torch
51	Explosive
84	Exposure from conducted heat
81	Exposure from convection currents
81	Exposure from direct flame
83	Exposure from flying brands, sparks
82	Exposure from radiated heat
53	Fertilizer
54	Firecracker
54	Fireworks
69	Flame for lighting
11	Flame from operating equipment
81	Flames, exposure fire

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67	Flare
83	Flying brand
41	Friction
67	Fusee
42	Glass, hot
82	Heat, exposure fire
12	Heat: conducted
12	Heat: radiated
43	Hot coals
43	Hot ember
42	Hot material
72	Hypergolic ignition
52	Incendiary ammunition
56	Incendiary device
65	Lighter: flame type
69	Lighting torch
73	Lightning discharge
64	Match
51	Military rocket
55	Model rocket
56	Molotov cocktail
42	Molten material
41	Overheated tire
54	Paper cap
54	Party popper
62	Pipe
53	Primer cord
72	Pyrophoric ignition
12	Radiated heat
82	Radiated heat from exposure
51	Rocket: military, space
55	Rocket: model
43	Slag
63	Smoking material
11	Spark from operating equip
54	Sparkler
83	Sparks from exposure
72	Spontaneous ignition
74	Static discharge
71	Sun's heat
66	Taper
41	Tire overheated
69	Torch for lighting
52	Tracer ammunition
67	Warning flare

**A.8.6.1.2** The following alphabetical list is based on the logic and definitions presented in 8.6.1.2 for item ignited. It is designed to assist a user in selecting the proper classification for item ignited. A person using this list should review the classification assigned in 8.6.1.2 to ensure that there are no qualifications on the definition of the term.

65	Accelerant
18	Acoustical insulation
93	Adhesive
61	Aerosol
71	Agricultural product
74	Animal
25	Appliance housing

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61	Atomized liquid	36	Drapery
46	Awning	23	Dresser
51	Bag	83	Drive belt
56	Bale goods, material	37	Dry goods
51	Barrel	66	Duct
51	Basket	67	Duct covering
32	Bed linen	94	Dust
32	Bedding	58	Duster
83	Belt: conveyor	88	Dynamite
83	Belt: drive	12	Eaves
22	Bench: not upholstered	32	Electric blanket
43	Billboard	81	Electrical insulation
32	Blanket	25	Equipment housing
36	Blind	68	Evaporative cooler pads
13	Blinds: external	88	Explosives
37	Bolt of cloth	12	Exterior sidewall covering
91	Book	13	Exterior trim
23	Bookcase	37	Fabric goods
51	Box	77	Feathers not on bird
58	Broom	86	Fence
58	Brush: paint, dusting	87	Fertilizer
73	Brushy growth outdoors	94	Fiber
57	Bulk storage	92	Files
23	Cabinet	23	Filing cabinet
23	Cabinetry	95	Film: paint
46	Canopy	68	Filter
14	Carpet	12	Finish: exterior sidewall
51	Carton	11	Finish: roof
51	Case	88	Firecracker
16	Ceiling covering	88	Fireworks
16	Ceiling lining		Flammable liquid vapors escaping (see 63 and 64)
72	Chaff		
22	Chair: not upholstered	14	Floor covering
21	Chair: upholstered	14	Flooring
23	Chest of drawers	58	Fluids: cleaning
95	Chimney residue	73	Forest
44	Chips	17	Framing: building
41	Christmas tree	17	Framing: structural
58	Cleaning cloth	62	Fuel
58	Cleaning fluids	77	Fur not on animal
58	Cleaning supplies	21	Furniture: upholstered
26	Cleaning utensils	45	Game
34	Clothing not on person		Gas escaping (see 63 and 64)
35	Clothing on person	72	Grass
32	Comforter	72	Hay
66	Conduit	32	Heating pad
67	Conduit covering	66	Hose
	Container leaking (see 63 and 64)	75	Human
83	Conveyor belt	81	Insulation: electrical
76	Cooking material	18	Insulation: thermal
54	Cord	15	Interior wall covering
51	Crate	24	Ironing board
71	Crops	26	Kitchen utensils
23	Cupboard	33	Laundry
36	Curtain	33	Linen: other than bedding
21	Davenport	94	Lint
42	Decoration		Liquid escaping (see 63 and 64)
23	Desk	65	Liquid spilled: ignitable
21	Divan	38	Luggage
13	Door: external	17	Lumber in place
23	Drainboard	92	Magazine

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15	Mantle	36	Tapestry
87	Manure	47	Tarpaulin
52	Material to make product	47	Tent
31	Mattress	18	Thermal insulation
58	Mop	14	Tile: floor
92	Newspaper	73	Timber standing
92	Newsprint: not rolled	84	Tire
59	Newsprint: rolled	33	Towel
82	Oil: transformer	45	Toy
97	Oily rags	82	Transformer
25	Organ case	82	Transformer oil
55	Packing material	96	Trash
95	Paint film, residue	73	Tree
53	Pallet	13	Trim: exterior
58	Palletized material	54	Twine
92	Paper	21	Upholstered furniture
23	Piano	26	Utensil: kitchen, cleaning
31	Pillow	61	Vaporized liquid
66	Pipe	83	V-belt
67	Pipe covering	21	Vehicle seats
	Pipe leaking (see 63 and 64)	15	Wall covering: interior
13	Platform	96	Waste
86	Pole	51	Waste basket
13	Porch	34	Wearing apparel not on person
71	Product: agricultural	35	Wearing apparel on person
88	Pyrotechnics	72	Weeds
58	Rags for cleaning	73	Wildland product: standing
97	Rags: oily	13	Window sash
85	Railroad ties	58	Wiping cloth
89	Recyclable material	15	Wood paneling
95	Residue: paint	11	Wood shingle roof
95	Resin residue	17	Woodwork: structural
59	Rolled material	23	Work bench
59	Rolled paper	55	Wrapping material
11	Roof covering	92	Writing paper
54	Rope	37	Yard goods
96	Rubbish	54	Yarn
14	Rug	37	Yarn for making cloth
55	Sacking		
21	Seat or cushion: automobile		
32	Sheet		
23	Shelf		
12	Siding		
43	Sign		
53	Skid		
21	Sofa: upholstered		
14	Stair covering		
17	Stair supports		
52	Stock for making products		
56	Storage: baled		
57	Storage: bulk		
58	Stored material: palletized		
17	Structural member		
72	Stubble		
16	Surface: ceiling		
12	Surface: exterior sidewall		
14	Surface: floor		
15	Surface: interior wall		
11	Surface: roof		
23	Table		
33	Tablecloth		

**A.8.6.2.2** Table A.8.6.2.2 details the inclusions and exclusions for the type of material coding given in 8.6.2.2.

**Table A.8.6.2.2 Type of Material Coding Structure**

0	Wood, Cellulose — Naturally Occurring.
01	Grass.
02	Leaves, needles, litter (vegetative).
03	Duff (the material between the leaf and/or needle cover and the mineral soil). Included are decomposed material and humus.
04	Peat.
05	Live tree, brush.
06	Snag (standing dead tree).
07	Logs.
08	Slash (felled brush, limbs, tree tops).
09	Rotten wood.
1	Flammable Gas (Not Gasoline). Included are benzene, benzol, carbon disulfide, carbon monoxide, ethylene, ethylene oxide, and vinyl chloride.

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Table A.8.6.2.2 *Continued*

11	Natural gas. Included are methane and marsh gas.
12	LP-Gas. Included are butane, butane and air mixtures, and propane gas.
13	Anesthetic gas.
14	Acetylene gas.
15	Hydrogen.
10	Gas not able to be classified further.
2	Flammable, Combustible Liquid. Classification information is given in NFPA's <i>Fire Protection Guide to Hazardous Materials</i> .
21	Class IA flammable liquid. Flash point less than 73°F (22.8°C) and boiling point less than 100°F (37.8°C). Included are ethyl ether, pentane, and ethylene oxide.
22	Class IB flammable liquid. Flash point less than 73°F (22.8°C) and boiling point at or above 100°F (37.8°C). Included are acetone ethyl alcohol, JP-4 jet fuel, and methyl ethyl ketone. Excluded is gasoline (23).
23	Gasoline.
24	Class IC flammable liquid. Flash point at or above 73°F (22.8°C) and below 100°F (37.8°C). Included are butyl alcohol, propyl alcohol, styrene, and turpentine.
25	Class II combustibile liquid. Flash point at or above 100°F (37.8°C) but less than 140°F (60°C). Included are kerosene, Nos. 1 and 2 fuel oil, and diesel fuel.
26	Class IIIA combustibile liquid. Flash point at or above 140°F (60°C) but less than 200°F (93.4°C). Included are Nos. 4, 5, and 6 fuel oil, cottonseed oil, and creosote oil.
27	Class IIIB combustibile liquid. Flash point at or above 200°F (93.4°C). Included are cooking oil, transformer oil, and lubricating oil.
20	Flammable, combustibile liquid not able to be classified further.
3	Volatile Solid, Chemical.
31	Fat, grease (food). Included are butter, tallow, margarine, and lard.
32	Grease (nonfood). Included are petroleum jellies.
33	Polish. Included are paraffin and wax.
34	Adhesive, resin, tar. Included are glue, gelatin, rosin, elemi, kauri, asphalt, pitch, contact cement, soot, carbon, and creosote. Excluded is asphalt-impregnated material (86).
35	Applied paint, varnish.
36	Combustibile metal.

(continues)

Table A.8.6.2.2 *Continued*

	Included are magnesium, titanium, and zirconium.
37	Solid chemical. Included are explosives. Excluded are liquid chemicals (division 2) and gaseous chemicals (division 1).
38	Radioactive material.
30	Volatile solid, chemical not able to be classified further.
4	Plastics. Included are all solid, nonfibrous forms of plastic and synthetic rubber. Examples are polypropylene, polystyrene, polyurethane, and polyvinylchloride in molded, laminate, foam, film, or sheet form. Excluded are synthetic fibers, coated fabrics, and plastic upholstery (division 7).
41	Plastics.
5	Natural Product.
51	Rubber. Excluded are synthetic rubbers, which should be classified as plastics (41).
52	Cork.
53	Leather.
54	Hay, straw.
55	Grain, natural fiber (preprocess). Included are feathers, felt, kapok, hessian, hemp, sisal, jute, coco film, flax, and cotton. Excluded are fabrics and furniture batting (71).
56	Coal, coke, briquettes, peat. Included are briquettes of carbon black and charcoal.
57	Food, starch. Excluded are fat and grease (31).
58	Tobacco.
50	Natural product not able to be classified further.
6	Wood, Paper (Processed).
61	Wood residue. Included are chips, sawdust, shavings, excelsior, and processed wood used as thermal insulation.
62	Round timber. Included are round posts, poles, and piles.
63	Sawn wood. Included are wood shingles and all finished lumber.
64	Plywood.
65	Fiberboard, particleboard, and hardboard. Included are low-density pressed wood fiberboard products.
66	Wood pulp, wood fibers.
67	Paper. Included are cellulose, waxed paper, sensitized paper, and ground-up, processed paper and newsprint used as thermal insulation.
68	Cardboard.
60	Wood, paper (processed) not able to be classified further.

(continues)



Table A.8.6.2.2 *Continued*

7	Fabric, Textile, Fur.	34	Adhesive
71	Fabric, fibers, cotton, blends, rayon, wool, silk, finished goods. Included are yarn and canvas. Excluded is fur (74).	22	Alcohol: ethyl
74	Fur, whether as natural material or finished goods.	37	Ammonium nitrate
75	Synthetic hair. Included are wigs, hairpieces, and toupees.	13	Anesthetic gas
76	Human hair.	94	Animal
77	Plastic-coated fabric. Included are plastic upholstery fabric and other vinyl fabrics.	34	Asphalt
70	Fabric, textile, fur not able to be classified further.	86	Asphalt siding
8	Material Compounded with Oil.	55	Barley
81	Linoleum.	66	Beaverboard
82	Oilcloth.	10	Benzene
86	Asphalt-treated material. Excluded are by-products of combustion, soot, carbon, and creosote (34).	10	Benzol
80	Material compounded with oil not able to be classified further.	34	Bitumen
9	Other Type of Material.	56	Briquettes
91	Chaff.	08	Brush: felled
92	Mulch.	05	Brush: live
93	Litter, combinations of materials having no value in the same container or pile.	06	Brush: standing dead
94	Animal.	22	Butadiene
98	Type of material not significant or not applicable. This subdivision should be used only when this data element is being used for reporting a type of material as other than the first material ignited and when the circumstances of the situation are such that the type of material is not applicable or significant.	12	Butane
99	Multiple types of material first ignited. This subdivision should be used only when multiple fires started at approximately the same time on the same property and more than one type of material was initially involved. If one major material was involved, the appropriate classification should be used.	31	Butter
00	Type of material not able to be classified further.	24	Butyl alcohol
UU	Type of material undetermined or not reported.	71	Canvas: non-waterproof
		34	Carbon
		56	Carbon black
		10	Carbon disulfide
		10	Carbon monoxide
		68	Cardboard
		67	Cellulose
		91	Chaff
		56	Charcoal
		65	Chipboard
		61	Chips: wood
		21	Class IA flammable liquid
		22	Class IB flammable liquid
		24	Class IC flammable liquid
		25	Class II combustibile liquid
		26	Class IIIA combustibile liquid
		27	Class IIIB combustibile liquid
		71	Cloth
		56	Coal
		25	Coal oil
		67	Coated paper
		55	Cocofilm
		55	Coconut fiber
		56	Coke
		25	Combustible liquid: Class II
		26	Combustible liquid: Class IIIA
		27	Combustible liquid: Class IIIB
		34	Contact cement
		27	Cooking oil
		52	Cork
		27	Corn oil
		55	Cotton
		71	Cotton yarn, fabric, finished goods
		26	Cottonseed oil
		34	Creosote
		26	Creosote oil
		20	Crude petroleum
22	Acetic acid: glacial	03	Decomposed material
22	Acetone	25	Diesel fuel
14	Acetylene	03	Duff
22	Acrylic acid	34	Elemi

(continues)

(continues)

21	Ether	53	Leather
21	Ethyl ether	02	Leaves
10	Ethylene	81	Linoleum
10	Ethylene oxide	27	Linseed oil
21	Ethylene oxide	93	Litter: man-made products
61	Excelsior	02	Litter: vegetation
37	Explosives	07	Logs
77	Fabric: plastic-coated	12	LP-Gas
31	Fat: food	32	Lubricant grease
55	Feathers	27	Lubricating oil
55	Felt	63	Lumber
71	Fiber	36	Magnesium
55	Fiber: natural	71	Man-made fabric
55	Fiber: silk	50	Manure
65	Fiberboard	31	Margarine
71	Finished goods	11	Marsh gas
07	Firewood	11	Methane
27	Fish oil	22	Methyl ethyl ketone (MEK)
21	Flammable liquid: Class IA	27	Mineral oil
22	Flammable liquid: Class IB	92	Mulch
24	Flammable liquid: Class IC	22	Naphtha: V.M. & P. regular
55	Flax	55	Natural fiber
57	Flour	11	Natural gas
57	Food: not fat or grease	51	Natural rubber
25	Fuel oil: No. 1 and No. 2	02	Needles
26	Fuel oil: No. 4 and No. 6	71	Nylon fabric
74	Fur fabric	55	Oats
74	Fur finished goods, products	25	Oil: coal
26	Furfural	26	Oil: No. 6 fuel
13	Gas: anesthetic	25	Oil: range
11	Gas: natural	82	Oilcloth
23	Gasoline	35	Paint: applied
34	Gelatin	67	Paper
34	Glue	67	Paper: coated
55	Grain	67	Paper: treated with oil
01	Grass	67	Paper: waxed
31	Grease: food	33	Paraffin
32	Grease: non-food	04	Peat
76	Hair: human	56	Peat
75	Hairpiece	32	Petroleum jelly
65	Hardboard	20	Petroleum, crude
54	Hay	26	Phenol
55	Hemp	37	Phosphorus
55	Hessian	67	Photographic paper
55	Hops	62	Piles: wood
76	Human hair	34	Pitch
03	Humus	41	Plastic
27	Hydraulic fluid	77	Plastic-coated fabric
22	Hydrazine	64	Plywood
15	Hydrogen	62	Pole: wood
67	Insulation: newsprint	33	Polish
61	Insulation: processed wood	71	Polyester/cotton fabric, finished goods
22	Jet fuel: JP-4	62	Posts: wood
25	Jet fuel: JP-5 and -6	36	Potassium
55	Jute	65	Presswood
55	Kapok	12	Propane
34	Kauri	24	Propyl alcohol
25	Kerosene	07	Pulpwood felled
22	Lacquer	38	Radioactive material
35	Lacquer: applied	55	Ramie
31	Lard	25	Range oil

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(continues)

71 Rayon fabric  
 67 Records: paper  
 93 Refuse  
 34 Resin  
 86 Roof covering: composition  
 86 Roofing: asphalt  
 63 Roofing: wood shingle  
 34 Rosin  
 09 Rotten wood  
 51 Rubber: natural  
 93 Rubbish  
 61 Sawdust  
 22 Shellac  
 53 Shoe leather  
 86 Siding: asphalt  
 71 Silk fabric  
 71 Silk finished goods  
 55 Sisal  
 53 Skin: animal  
 08 Slash  
 06 Snag  
 36 Sodium  
 34 Soot  
 55 Soybean  
 57 Starch  
 54 Straw  
 24 Styrene  
 34 Sulfur  
 71 Synthetic fabric  
 31 Tallow  
 27 Tallow oil  
 34 Tar  
 71 Textile products: cotton  
 51 Tire rubber  
 36 Titanium  
 58 Tobacco  
 22 Toluol, toluene  
 75 Toupee  
 27 Transformer oil  
 93 Trash  
 67 Treated paper  
 05 Tree: live  
 06 Tree: standing dead  
 08 Treetops: felled  
 24 Turpentine  
 22 Varnish  
 35 Varnish: applied  
 55 Vegetable fibers  
 27 Vegetable oil  
 02 Vegetation litter  
 10 Vinyl chloride  
 77 Vinyl fabric  
 67 Waste paper  
 33 Wax  
 67 Waxed paper  
 55 Wheat  
 75 Wig  
 61 Wood chips  
 07 Wood felled but not sawed  
 66 Wood fibers  
 61 Wood flour

62 Wood piles, pole  
 62 Wood post  
 66 Wood pulp  
 61 Wood shavings  
 63 Wood shingles  
 63 Wood: finished  
 09 Wood: rotten  
 63 Wood: sawed or split  
 63 Wood: structural  
 71 Wool yarn, fabric, finished goods  
 71 Yarn  
 36 Zirconium

**A.8.9.2** Table A.8.9.2 details the inclusions and exclusions for the wildland fuel model coding given in 8.9.2.

**A.9.2.4** Table A.9.2.4 details the inclusions and exclusions for the contributing factors coding given in 9.2.4.

**A.10.3.1** Automatic detector coverage measures the extent to which a fire in the property might be detected by an automatic system. This data element does not indicate where the signal from a detector goes or whether it automatically notifies someone responsible for emergency action.

**A.10.3.2** The “detector type” data element identifies the type and operating principle of a smoke, heat, flame, or gas detector present in the area of origin or in near proximity to the area of origin such that it would be instrumental in detecting the fire in its early stages. This data element can also be used with the “detector power supply” data element (*see 10.3.3*) in a prefire inventory to further explain the type of automatic detection recorded in 10.3.1.

Table A.10.3.2 details the inclusions and exclusions for the detector type coding given in 10.3.2.

**A.10.3.3** The reliability of the detector power supply is an important part of detector performance, especially if maintenance was poor or a power failure occurred before or during the fire. This data element can also be used with the “detector type” data element (*see 10.3.2*) in a prefire inventory to further explain the type of automatic detection recorded in 10.3.1.

Table A.10.3.3 details the inclusions and exclusions for the detector power supply coding given in 10.3.3.

**A.10.3.4** Two data elements are used to measure the performance of fire detection equipment. One indicates whether it operated or not, and the other indicates the impact on the occupants. These data elements are not designed to evaluate any alarm transmission capability of the system, only the detection of the fire.

**A.10.3.5** The “reason for detector failure” data element is used to record the reason why a detector failed to operate properly.

Table A.10.3.5 details the inclusions and exclusions for the reason for detector failure coding given in 10.3.5.

**A.10.4** This section classifies the automatic alarm system transmission features provided to get the alarm from the structure to the responding fire department. *NFPA 72* provides system details.

Table A.10.4 details the inclusions and exclusions for the automatic alarm transmission coding given in Section 10.4.

(continues)

**Table A.8.9.2 Wildland Fuel Model Coding Structure**

1	<b>Fuel Model A — Annual grasses.</b> This fuel model represents grasslands vegetated by annual grasses and forbs. Brush or trees may be present but are very sparse, occupying less than one-third of the area. Examples of types where Fuel Model A should be used are cheatgrass and medusahead. Open pinyon-juniper, sagebrush-grass, and desert shrub association may appropriately be assigned this fuel model if the woody plants meet the density criteria. The quantity and continuity of the ground fuels vary greatly with rainfall from year to year.
2	<b>Fuel Model B — Mature brush [6 ft (2 m) and over].</b> Mature, dense fields of brush 6 ft (2 m) or more in height are represented by this fuel model. One-fourth or more of the aerial fuel in such stands is dead. Foliage burns readily. Model B fuels are potentially very dangerous, fostering intense, fast-spreading fires. This model is for California mixed chaparral generally 30 years or older. The B model is more appropriate for pure chemise stands. The B model may also be used for the New Jersey pine barrens.
3	<b>Fuel Model C — Open pine with grass.</b> Open pine stands typify Model C fuels. Perennial grasses and forbs are the primary ground fuel, but there is enough needle litter and branchwood present to contribute significantly to the fuel loading. Some brush and shrubs may be present, but they are of little consequence. Situations covered by Fuel Model C are open, longleaf, slash, ponderosa, Jeffrey, and sugar pine stands. Some pinyon-juniper stands may qualify.
4	<b>Fuel Model D — Southern rough.</b> This fuel model is specifically for the palmetto-gallberry understory-pine overstory association of the southeast coastal plains. It can also be used for the so-called "low pocosins," where Fuel Model O might be too severe. This model should be used only in the Southeast because of a high moisture of extinction.
5	<b>Fuel Model E — Hardwood litter (fall).</b> This model applies after leaf fall for hardwood and mixed hardwood-conifer types where the hardwoods dominate. The fuel is primarily hardwood leaf litter. The oak-hickory types are best represented by Fuel Model E, but E is an acceptable choice for northern hardwoods and mixed forests of the Southeast. In high winds, the fire danger may be underrated because rolling and blowing leaves are not accounted for. In the summer after the trees have leafed out, Fuel Model E should be replaced by Fuel Model R.
6	<b>Fuel Model F — Intermountain West brush.</b>

*(continues)***Table A.8.9.2 Continued**

	Model F represents mature closed chemise stands and oakbrush fields of Arizona, Utah, and Colorado. It also applies to young, closed stands and mature, open stands of California mixed chaparral. Open stands of pinyon-juniper are represented; however, fire activity will be overrated when windspeeds are low and where ground fuels are sparse.
7	<b>Fuel Model G — West Coast conifers; close, heavy down materials.</b> Fuel Model G is used for dense conifer stands where there is a heavy accumulation of litter and downed woody material. Such stands are typically overmature and might also be suffering insect, disease, wind, or ice damage—natural events that create a very heavy buildup of dead material on the forest floor. The duff and litter are deep, and much of the woody material is more than 3 in. (7.5 cm) in diameter. The undergrowth is variable, but shrubs are usually restricted to openings. Types meant to be represented by Fuel Model G are hemlock-Sitka spruce, coast Douglas fir, and wind-thrown or bug-killed stands of lodgepole pine and spruce.
8	<b>Fuel Model H — Short-needle conifers; normal down woody materials.</b> The short-needled conifers (white pines, spruces, larches, and firs) are represented by Fuel Model H. In contrast to Model G fuels, Fuel Model H describes a healthy stand with sparse undergrowth and a thin layer of ground fuels. Fires in H fuels are typically slow spreading and are dangerous only in scattered areas where the downed woody material is concentrated.
9	<b>Fuel Model I — Heavy slash, clear-cut conifers greater than 25 tons/acre (25,400 kg/acre).</b> Fuel Model I was designed for clear-cut conifer slash where the total loading of materials less than 6 in. (15 cm) in diameter exceeds 25 tons/acre (25,400 kg/acre). After settling and the fines (needles and twigs) fall from the branches, Fuel Model I will overrate the fire potential. For lighter loadings of clear-cut conifer slash, Fuel Model J should be used, and for light thinnings and partial cuts where the slash is scattered under a residual overstory, Fuel Model K should be used.
10	<b>Fuel Model J — Medium slash, heavily thinned conifers [less than 25 tons/acre (25,400 kg/acre)].</b> This model complements Fuel Model I. It is for clear-cuts and heavily thinned conifer stands where the total loading of materials less than 6 in. (15 cm) in diameter is less than 25 tons/acre (25,400 kg/acre). Again, as the slash ages, the fire potential will be overrated.
11	<b>Fuel Model K — Light slash [less than 15 tons/acre (15,240 kg/acre)].</b> Slash fuels from light thinnings and partial cuts in conifer stands are represented by Fuel Model K. Typically, the slash is scattered about under an open overstory.

*(continues)*

Table A.8.9.2 *Continued*

	This model applies to hardwood slash and to southern pine clear-cuts where the loading of all fuels is less than 15 tons/acre (15,240 kg/acre).
12	Fuel Model L — Perennial grasses. This fuel model is meant to represent grasslands vegetated by perennial grasses. The principal species are coarser and the loading heavier than those in Model A fuels. Otherwise the situations are very similar; shrubs and trees occupy less than one-third of the area. The quantity of fuel in these areas is more stable from year to year. In sagebrush areas Fuel Model T may be more appropriate.
13	( <i>This subdivision not used in this edition.</i> )
14	Fuel Model N — Sawgrass, marsh needle-like grass. This fuel model was constructed specifically for the sawgrass prairies of south Florida. It may be useful in other marsh situations where the fuel is coarse and reed-like. The model assumes that one-third of the aerial portion of the plants is dead. Fast-spreading, intense fires can occur even over standing water.
15	Fuel Model O — High pocosin. The O fuel model applies to dense, brush-like fuels of the Southeast. O fuels, except for a deep litter layer, are almost entirely living, in contrast to B fuels. The foliage burns readily except during the active growing season. The plants are typically over 6 ft (2 m) tall and are often found under an open stand of pine. The high pocosins of the Virginia, North Carolina, and South Carolina coasts are the ideal of Fuel Model O. If the plants do not meet the 6 ft (2 m) criterion in those areas, Fuel Model D should be used.
16	Fuel Model P — Southern long-needle pine. Closed, thrifty stands of long-needle southern pines are characteristic of P fuels. A 2 to 4 in. (5 to 10 cm) layer of lightly compacted needle litter is the primary fuel. Some small-diameter branchwood is present, but the density of the canopy precludes more than a scattering of shrubs and grass. Fuel Model P has the high moisture of extinction characteristic of the Southeast. The corresponding model for other long-needled pines is U.
17	Fuel Model Q — Alaska black spruce. Upland Alaskan black spruce is represented by Fuel Model Q. The stands are dense but have frequent openings filled with usually flammable shrub species. The forest floor is a deep layer of moss and lichens, but there is some needle litter and small-diameter branchwood. The branches persist on the trees, and ground fires easily reach into the tree crowns. This fuel model may be useful for jack pine stands in the Lake States. Ground fires are typically slow spreading, but a dangerous crowning potential exists.
18	Fuel Model R — Hardwood litter (summer).

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Table A.8.9.2 *Continued*

	This fuel model represents the hardwood areas after the canopies leaf out in the spring. It is provided as the off-season substitute for Fuel Model F. It should be used during the summer in all hardwood and mixed conifer-hardwood stands where more than half of the overstory is deciduous.
19	Fuel Model S — Tundra. Alaskan or alpine tundra on relatively well-drained sites is the S fuel. Grass and low shrubs are often present, but the principal fuel is a deep layer of lichens and moss. Fires in these fuels are not fast spreading or intense, but are difficult to extinguish.
20	Fuel Model T — Sagebrush with grass. The bothersome sagebrush-grass types of the Great Basin and the Intermountain West are characteristic of T fuels. The shrubs burn easily and are not dense enough to shade out grass and other herbaceous plants. The shrubs must occupy at least one-third of the site, or the A or L fuel models should be used. Fuel Model I might be used for immature scrub oak and desert shrub associations in the West, and the scrub oak-wire grass type in the Southeast.
21	Fuel Model U — Western long-needle pine. Closed stands of western long-needled pines are covered by this model. The ground fuels are primarily litter and small branchwood. Grass and shrubs are precluded by the dense canopy but occur in the occasional natural opening. Fuel Model U should be used for ponderosa, Jeffrey, sugar, and red pine stands of the Lake States. Fuel Model P is the corresponding model for southern pine plantations.
NN	Wildland fuel model not applicable.
UU	Wildland fuel model undetermined or not reported.

**A.10.5.1.1** The “automatic extinguishing system” data element is used to record the identification of an automatic fire-suppression system within a business or tenant space. The hazard against which the suppression system is designed to protect should also be recorded. This information is important to the understanding of fire control and life safety in buildings with and without extinguishing systems.

If there are multiple suppression systems present and only one can be reported, the one that should have had the greatest influence on the fire should be identified and the details of that system recorded, regardless of whether it provides general area coverage as an automatic sprinkler system or more local special hazard protection.

Table A.10.5.1.1 details the inclusions and exclusions for the type of automatic extinguishing system present coding given in 10.5.1.1.

Table A.9.2.4 Contributing Factors Coding Structure

1	Building Construction or Design Factors.
112	Roof collapse.
121	Ceiling collapse.
125	Holes or openings in walls or ceilings.
131	Wall collapse.
132	Difficult to ventilate.
134	Combustible interior finish.
137	Balloon construction.
138	Arrangement of partitions.
139	Arrangement of stock or contents.
141	Floor collapse.
151	Lack of fire barrier walls or doors.
153	Transoms.
161	Attic undivided.
166	Insulation: combustible.
173	Stairwell not enclosed.
174	Elevator shaft.
175	Dumbwaiter.
176	Ducts: vertical.
177	Chute: rubbish, garbage, laundry, etc.
181	Supports unprotected.
182	Wood I-joist or open truss floor construction.
183	Wood roof truss construction.
185	Wood truss construction.
186	Metal truss construction.
187	Fixed burglar protection assemblies (bars, grills on windows and doors).
188	Quick-release failure of bars on windows or doors.
192	Previous damage by fire.
100	Building construction or design factors not able to be classified further.
2	Act or Omission.
	Included are misuse of equipment and improper operation of equipment.
213	Doors left open or outside door unsecured.
214	Operation of fire doors obstructed or impeded.
218	Violation of fire or life safety code.
222	Illegal and clandestine drug operation.
232	Intoxication: drugs or alcohol.
253	Riot or civil disturbance.
	Included are political activities or terrorist acts.
254	Person(s) interfered with operations.
283	Accelerant used.
200	Acts or omissions not able to be classified further.
3	On-Site Materials.
311	Aisles blocked.
312	Significant and unusual fuel load from structure components
313	Significant and unusual fuel load from contents.
314	Significant and unusual fuel load outside from natural environment conditions.
315	Significant and unusual fuel load from manmade condition.

(continues)

Table A.9.2.4 Continued

321	Radiological hazard on site.
322	Biological hazard on site.
323	Cryogenic hazard on site.
324	Hazardous chemical, corrosive material, or oxidizer.
325	Flammable or combustible liquid hazard.
327	Explosives.
328	Fireworks.
331	Decorations.
	Included are contents such as crepe paper, garland.
341	Gas: natural or lighter than air.
342	Gas: Liquefied petroleum (LP-Gas) or heavier than air.
361	Combustible storage greater than 12 ft (4 m) to top of storage
	Excluded is rack storage (362).
362	High rack storage.
300	Building contents not able to be classified further.
4	Delays.
411	Delayed detection of fire.
412	Delayed reporting of fire.
	Included are occupants investigating the source of the alarm or smoke before calling the fire department.
413	Alarm system malfunction.
414	System appropriately shut off.
	Included are systems being maintained or repaired.
415	System inappropriately shut off.
421	Inability to contact fire department.
	Included are use of wrong phone number and problems with cellular mobile phones.
424	Information incomplete or incorrect.
	Included is incorrect location.
425	Communications problem; system failure of local, public, or other telephone network.
431	Blocked roadway due to construction.
434	Poor access for fire apparatus.
435	Traffic delay.
436	Trouble finding location.
437	Size, height, or other building characteristic delayed access to fire.
438	Power lines down/arcing.
441	Hydrant access blocked.
442	Fire department connection access blocked.
	Included are sprinkler and standpipe connection.
443	Poor access for fire fighters.
444	Secured area.
445	Guard dogs.
446	Aggressive animals, excluding guard dogs.
447	Suppression delayed due to evaluation of hazardous or unknown materials at incident scene.
448	Locked or jammed doors.
451	Apparatus failure at remote location.
452	Hydrants inoperative.

(continues)

**Table A.9.2.4** *Continued*

	461	Airspace restriction.
	462	Military activity.
	471	Hostile activity.
	481	Closest apparatus unavailable.
	400	Delays not able to be classified further.
5		Protective Equipment.
	510	Extinguishing system failure.
	520	Standpipe/fire department connection problem.
	531	Water supply: inadequate private.
	532	Water supply: inadequate public.
	543	Electrical power outage.
	561	Failure of rated fire protection assembly. Included are fire doors, fire walls, floor/ceiling assemblies, and other fire-rated assemblies.
	562	Protective equipment or systems negated illegally or irresponsibly. Included are fire doors, dampers, sprinklers, and the like.
	500	Protective equipment not able to be classified further.
7		Natural Conditions.
	711	Drought or low fuel moisture.
	712	Humidity: low.
	713	Humidity: high.
	714	Temperature, low.
	715	Temperature, high.
	721	Fog.
	722	Flooding.
	723	Ice.
	724	Rain.
	725	Snow.
	732	Wind. Included are hurricanes and tornados.
	741	Earthquake.
	760	Vegetation fuel loading.
	771	Threatened or endangered species.
	772	Timber sale activity.
	773	Fire restriction.
	774	Historic disturbance (past fire history can dictate fire behavior).
	775	Urban-wildland interface.
	700	Natural conditions not able to be classified further.
9		Egress and Exit Factors.
	911	Occupancy load above legal limit.
	912	Evacuation activity impeded fire department access.
	913	Window type impedes egress. Included are windows too small.
	914	Windowless wall.
	921	Young occupants.
	922	Elderly occupants.
	923	Physically disabled occupants.
	924	Mentally disabled occupants.
	925	Physically restrained/confined occupants.
	926	Medically disabled occupants.
	941	Special event.

(continues)

**Table A.9.2.4** *Continued*

	942	Public gathering.
	900	Egress and exit factor not able to be classified further.
	UUU	Contributing factors undetermined or not reported.
	NI	Not investigated by a certified fire investigator.

**Table A.10.3.2** **Detector Type Coding Structure**

1	Smoke detector.
2	Heat detector.
3	Combination smoke detector and heat detector.
4	Sprinkler/water flow detection.
5	More than one type of detection system present.
N	No detector present.
0	Other type of detector present. Included are gas-sensing and flame-sensing devices.
U	Detector type undetermined or not reported.

**Table A.10.3.3** **Detector Power Supply Coding Structure**

1	Battery only.
2	Hard wire only.
3	Plug-in only.
4	Hard wire with battery backup.
5	Plug-in with battery backup.
6	Mechanical power. Included are springs and pressurized cylinders of gas.
7	More than one type of power supply (different detectors).
N	No detector present.
0	Detector power supply not able to be classified further.
U	Detector power supply undetermined or not reported.

**Table A.10.3.5** **Reason for Detector Failure Coding Structure**

1	Failure of hardwired power supply. Included is power supply shut off or disconnected.
2	Improper installation or placement of detector. Included are situations where the detector is placed in dead air space.
3	Defective detector instrument.
4	Inadequate maintenance. Included is lack of cleaning. Excluded are missing batteries (5) and discharged batteries (6).
5	Battery missing or disconnected.
6	Battery was discharged.
N	No detector failure.
0	Reason for detector failure not able to be classified further.
U	Reason for detector failure undetermined or not reported.



**Table A.10.4 Automatic Alarm Transmission Coding Structure**

1	Remote station system to fire department managed location. An alarm system connecting protected premises over leased telephone lines to a fire department location such as the communication center. It includes a separate receiver for the individual functions being monitored, such as a fire alarm signal or a sprinkler waterflow alarm.
2	Remote station system to non-fire department-managed location. An alarm system connecting protected premises over leased telephone lines to a site other than a fire department-managed location. It includes a separate receiver for the individual functions being monitored, such as a fire alarm signal or a sprinkler waterflow alarm.
3	Proprietary system. An alarm system that serves contiguous or noncontiguous properties under one ownership from a central supervising station at a protected property. It is similar to a central station system but is owned by the protected property.
4	Central station system. An alarm system connecting protected premises to a privately owned central station whose function is to monitor the connecting lines constantly and record any indication of fire, supervisory, or trouble signals from the protected premises. When a signal is received, the central station takes such action as is required, such as informing the municipal fire department of a fire.
5	Auxiliary system with automatic master box. An alarm system utilizing a standard municipal coded fire alarm box to transmit a fire alarm from the protected premises to the municipal fire department. These alarms are received on the same municipal equipment and are carried over the same transmission lines that are used to connect fire alarm boxes on the street. Operation is initiated by the local fire detection and alarm system installed at the protected property.
6	Manual local. Alarms sound to warn occupants; alarm does not transmit remotely.
7	Manual remote. This system transmits the alarm to a remote site.
N	No automatic alarm transmission equipment provided.
0	Automatic alarm transmission equipment not able to be classified further.
U	Automatic alarm transmission equipment undetermined or not reported.

**A.10.5.1.2** The “coverage of automatic extinguishing system” data element is for use with the **type** of automatic extinguishing system” data element (*see 10.5.1.1*). It is used to classify an evaluation of the extent of coverage provided by the automatic extinguishing system. The applicable standards for each type of system are shown in 10.5.1.2 and should be used to evaluate the installation.

**Table A.10.5.1.1 Type of Automatic Extinguishing System Present Coding Structure**

1	Wet-pipe sprinkler system.
2	Dry-pipe sprinkler system.
3	Other sprinkler system. Included are deluge sprinkler systems and preaction sprinkler systems.
4	Dry chemical system.
5	Foam system.
6	Halogen-type system.
7	Carbon dioxide system.
8	Water spray system.
0	Type of automatic extinguishing system not able to be classified further. Included are explosion suppression systems, steam smothering systems, chemical foam systems, and systems dispensing dry powder for metal fires.
N	No automatic extinguishing system present.
U	Type of automatic extinguishing system undetermined or not reported.

“Total flooding” means completely filling the room or space protected. “Localized coverage” means completely protecting the hazard within a room or space. A restaurant hood and duct system is an example of localized coverage.

Table A.10.5.1.2 details the inclusions and exclusions for the coverage of automatic extinguishing system coding given in 10.5.1.2.

**A.10.5.1.3** Automatic sprinkler systems generally operate so that additional sprinklers open if a fire spreads beyond its incipient location. It is important to record the number of sprinklers that operated. This record is an indication of how fast the fire progressed but is not necessarily an indication of the performance of the sprinkler system. The data elements “performance of automatic extinguishing system” (*see 10.5.1.4*) and “reason for extinguishing system failure” (*see 10.5.1.5*) should be used to record the performance of the sprinkler system and the reasons for any failures.

**A.10.5.1.4** The “performance of automatic extinguishing system” data element records the evaluation of the performance of an automatic extinguishing system in the room or space of fire origin. If the automatic suppression system performance was not satisfactory, details of the failure should

**Table A.10.5.1.2 Coverage of Automatic Extinguishing System Coding Structure**

1	Complete coverage of a building or structure.
2	Partial coverage of a building or structure.
3	Total flooding of a room or space protected. Excluded are systems designed to provide complete protection of a building (1).
4	Localized coverage. Included are systems designed for complete protection against a hazard within a room or space.
0	Coverage of automatic extinguishing system not able to be classified further.
U	Coverage of automatic extinguishing system undetermined or not reported.

be explained. The “reason for extinguishing system failure” data element (*see* 10.5.1.5) should be used to record the failure.

**A.10.5.1.5** If there was an automatic suppression system in the room or space of fire origin and it failed to operate as designed, the data element “reason for extinguishing system failure” is used to record the reasons for the failure.

Table A.10.5.1.5 details the inclusions and exclusions for the reason for extinguishing system failure coding given in 10.5.1.5.

**Table A.10.5.1.5 Reason for Extinguishing System Failure Coding Structure**

1	Extinguishing system shut off prior to the fire.
2	Not enough agent discharged to control the fire.
3	Agent discharged, but did not reach the fire. Included are situations where the fire was above the discharge head, the fire originated in an unprotected space, or the discharged agent was shielded from the fire by stock, machinery, or contents.
4	Inappropriate system for the type of fire.
5	Fire not in the area protected by the extinguishing system.
6	System components damaged.
7	Lack of maintenance. Included are situations where there was corrosion or the heads were painted.
8	Manual intervention during the fire defeated the system. Excluded are systems shut off before the fire (1).
0	Reason for extinguishing system failure not able to be classified further.
N	No extinguishing system failure.
U	Reason for extinguishing system failure undetermined or not reported.

**A.10.5.2** It is useful to know what systems or devices are or were available to the occupants of the building or the fire department to deal with the fire. A factor in the size of the fire might be what is available in the immediate area for manual firefighting equipment. It is recommended that a reporting system allow for multiple entries so that any manual protection system or device available and its performance can be recorded.

**A.10.5.2.1** See NFPA 10 for requirements on the installation of portable fire extinguishers.

**A.10.5.2.2** See NFPA 14 for requirements on the installation of occupant use hose stations.

**A.10.5.2.3** See NFPA 14 for requirements on the installation of standpipe systems.

**A.10.5.2.4.1** This data element for the performance of a manual protection system or device records the evaluation of the performance of a manual protection system or device available to persons in the area of fire origin. If the performance of the manual protection system or device was not satisfactory, details of the failure should be explained. The “reason for a

manual protection system or device failure” data element (*see* 10.5.2.5) shall be used to record the failure.

**A.10.5.2.5** Table A.10.5.2.5 details the inclusions and exclusions for the reason for a manual protection system or device failure coding given in 10.5.2.5.

**Table A.10.5.2.5 Reason for a Manual Protection System or Device Failure Coding Structure**

1	Manual system shut off prior to the fire.
2	System or device not adequate for the situation. Included are hose lines too short, inadequate flow from hose lines, and inadequate size fire extinguisher.
3	Not enough agent discharged to control the fire. Included are situations where there was more agent available but it was not used.
4	Agent discharged, but did not reach the fire or was not applied properly. Included are situations where the person using the system or device did not apply the agent correctly, or did not get close enough for the agent to reach the fire, or the agent did not reach the fire because the agent was shielded from the fire by room arrangement, stock, machinery, or contents.
5	Inappropriate agent for the type of fire — for example, electrical equipment or combustible metals.
6	System or device components not installed correctly, damaged, or missing. Included are failures due to physical actions prior to the fire. Excluded is lack of maintenance (7).
7	Lack of maintenance. Included are corrosion of components, lack of pressure in fire extinguishers, and valves too hard to open.
8	Manual intervention during the fire defeated the system. Included are systems shut off during firefighting operations. Excluded are systems shut off before the fire (1).
N	No manual protection system or device failure.
0	Reason for manual protection system or device failure not able to be classified further.
U	Reason for manual protection system or device failure undetermined or not reported.

**A.11.3.2** Table A.11.3.2 details the inclusions and exclusions for the incident type coding given in 11.3.2.

**Table A.11.3.2 Incident Type Coding Structure**

1	Fire or Explosion.
11	Structure fire.
111	Building fire.
112	Fire in a structure fire other than in a building.
113	Fire involving the contents of a cooking vessel without fire extension beyond the vessel.

(continues)

Table A.11.3.2 *Continued*

114	Fires originating in and confined to a chimney or flue.
118	Trash or rubbish fire in a structure, with no flame damage to structure or its contents.
110	Structure fire not able to be classified further.
12	Fire in mobile property when used as a structure.
121	Fire in manufactured home used as a fixed residence.
122	Fire in a motor home, camper, or recreational vehicle when used as a structure.
123	Fire in a portable building, when used at a fixed location.
120	Fire in mobile property when used as a fixed structure not able to be classified further.
13	Fire in mobile property outside a structure.
131	Passenger vehicle fire.
132	Road freight or transport vehicle fire.
133	Rail vehicle fire.
134	Water vehicle fire.
135	Aircraft fire.
136	Self-propelled motor home or recreational vehicle.
137	Camper or recreational vehicle (RV) fire, not self-propelled.
138	Off-road vehicle or heavy equipment fire.
130	Fire in mobile property outside a structure not able to be classified further.
14	Fire in natural vegetation.
141	Forest, woods, or wildland fire.
142	Brush fire or brush-and-grass fire mixture.
143	Fire confined to area characterized by grass ground cover.
140	Fire in natural vegetation not able to be classified further.
15	Refuse fire outside.
151	Outside rubbish, trash, or waste fire not in a container or receptacle.
152	Garbage dump or sanitary landfill fire.
153	Construction or demolition landfill fire.
154	Outside trash receptacle fire.
155	Outside stationary compactor or compacted trash fire.
150	Outside rubbish fire not able to be classified further.
16	Special outside fire (not included in 15 series above or 18 series below).
161	Outside storage fire on residential or commercial/industrial property, not rubbish.
162	Outside equipment fire. Included are outside trash compactors, outside HVAC units, and irrigation pumps.
163	Outside gas or vapor combustion.
164	Outside mailbox fire.
165	Mulch.
160	Special outside fire not able to be classified further.
17	Fire in cultivated vegetation or crop.
171	Cultivated grain or crop fire.
172	Cultivated orchard or vineyard fire.
173	Cultivated trees or nursery stock fire.
170	Fire in cultivated vegetation or crop not able to be classified further.
10	Fire or explosion not able to be classified further.
100	Fire or explosion not able to be classified further.
2	Overpressure Rupture, Explosion, Overheat (No Fire).
21	Overpressure rupture from steam, air, or gas (no fire).

(continues)

Table A.11.3.2 *Continued*

211	Overpressure rupture of pipe or pipeline.
212	Overpressure rupture of boiler.
213	Steam rupture of pressure or process vessel.
210	Overpressure rupture from steam, air, or gas not able to be classified further.
23	Overpressure rupture from chemical reaction — no fire.
231	Overpressure rupture of pressure or process vessel due to a chemical reaction, with no ensuing fire.
24	Explosion (no fire).
241	Munitions or bomb explosion (no fire).
242	Blasting agent explosion (no fire).
243	Fireworks explosion (no fire).
240	Explosion (no fire) not able to be classified further.
25	Excessive heat, overheat scorch burns with no ignition.
251	Excessive heat, overheat scorch burns with no ignition.
20	Overpressure rupture, explosion, overheat not able to be classified further.
200	Overpressure rupture, explosion, overheat not able to be classified further.
3	Rescue and Emergency Medical Service Incidents.
31	Medical assist.
311	Medical assist.
32	Emergency medical services incident.
321	Cardiac or related cardiovascular system issues.
322	Motor vehicle accident with injuries.
323	Motor vehicle/pedestrian (MV Ped) accident.
324	Motor vehicle accidents with no injuries.
325	Trauma not related to motor vehicle. Medical illness (including diabetics, seizures, or other internal medical systems illness).
320	Emergency medical incident not able to be classified further.
33	Lock-in.
331	Lock-in.
34	Search for lost person.
341	Search for person on land.
342	Search for person in water.
343	Search for person underground.
340	Search for lost person not able to be classified further.
35	Extrication, rescue.
351	Extrication of victims from a building or structure, such as a building collapse.
352	Extrication of victim(s) from vehicle.
353	Removal of victim(s) from stalled elevator.
354	Trench/below-grade rescue.
355	Confined space rescue.
356	High-angle rescue.
357	Extrication of victim(s) from machinery.
350	Extrication, rescue not able to be classified further.
36	Water- or ice-related rescue.
361	Swimming/recreational water areas rescue.
362	Ice rescue.
363	Swift-water rescue.
364	Surf rescue.
365	Watercraft rescue.
360	Water- or ice-related rescue not able to be classified further.
37	Electrical hazard rescue.
371	Electrocution or potential electrocution.
372	Trapped by power lines.

(continues)

Table A.11.3.2 *Continued*

370	Electrical hazard rescue not able to be classified further.
38	Rescue or EMS standby.
381	Rescue or EMS standby for hazardous conditions. Excluded is standby at sporting events or special events.
30	Rescue and emergency medical service incidents not able to be classified further.
300	Rescue and emergency medical service incidents not able to be classified further.
4	Hazardous Condition (No Fire).
41	Flammable or combustible liquid or flammable gas spill or leak.
411	Gasoline or other flammable liquid spill.
412	Gas leak (natural gas or LP-Gas).
413	Oil or other combustible liquid spill.
410	Flammable or combustible liquid or gas spilled or leaking not able to be classified further.
42	Chemical release, chemical reaction, or toxic condition.
421	Chemical hazard (no spill or leak).
422	Chemical spill or leak.
423	Refrigeration leak, including ammonia.
424	Carbon monoxide incident.
420	Chemical release, chemical reaction, or toxic condition not able to be classified further.
43	Radioactive condition.
431	Radiation leak, radioactive material.
430	Radioactive condition not able to be classified further.
44	Electrical wiring or equipment problem.
441	Heat from short circuit (wiring) or arcing from electrical equipment.
442	Overheated motor or wiring.
443	Breakdown of light ballast.
444	Power line down.
440	Electrical wiring or equipment problem not able to be classified further.
45	Biological hazard.
451	Confirmed or suspected biological hazard.
46	Accident, potential accident.
461	Building or structure weakened or collapsed.
462	Aircraft standby.
463	Vehicle accident, general cleanup.
460	Accident, potential accident not able to be classified further.
47	Explosive hazard present.
471	Explosive hazard present. Included are bombs and munitions. Excluded are bomb scares where no bomb is found (721).
48	Attempted burning, illegal action.
481	Attempt to burn. Included are situations in which incendiary devices fail to function.
482	Threat to burn. Included are verbal threats and persons threatening to set themselves on fire. Excluded are attempts to burn (481).
480	Attempted burning, illegal action not able to be classified further.
40	Hazardous condition, standby not able to be classified further.
400	Hazardous condition, standby not able to be classified further.

(continues)

Table A.11.3.2 *Continued*

5	Service Call.
51	Person in distress.
511	Lock-out.
512	Ring or jewelry removal, without transport to hospital.
510	Person in distress not able to be classified further.
52	Water problem.
521	Water (not people) evacuation.
522	Water or steam leak.
520	Water problem not able to be classified further.
53	Smoke, odor problem.
531	Smoke or odor problem.
54	Animal problem or rescue.
541	Animal problem.
542	Animal rescue.
540	Animal problem or rescue not able to be classified further.
55	Public service assistance.
551	Assist to police or other governmental agency.
552	Police matter.
553	Service to the public.
554	Assist to invalid.
556	Standby special event. Includes mass gathering or other event where there is potential threat; readiness.
550	Public service assistance not able to be classified further.
56	Unauthorized burning.
561	Unauthorized burning.
57	Cover assignment, standby at fire station, move-up.
571	Cover assignment, standby at fire station, move-up.
50	Service call not able to be classified further.
500	Service call not able to be classified further.
6	Good Intent Call.
61	Incident cleared prior to arrival.
611	Incident cleared prior to arrival.
62	No emergency found.
621	Wrong location.
622	No incident on arrival at dispatched address.
623	Lines other than power lines down. Includes low or no voltage cable. Excludes power lines down (444).
63	Controlled burning.
631	Authorized controlled burning.
632	Prescribed fire.
64	Vicinity alarm.
641	Vicinity alarm (incident at another location).
65	Steam, other gas mistaken for smoke.
651	Smoke scare, odor of smoke, not steam (652). Excluded are gas scares or odors of gas use (671).
652	Steam, vapor, fog, or dust thought to be smoke.
653	Smoke from barbecue or tar kettle.
650	Steam, other gas mistaken for smoke not able to be classified further.
66	EMS call where injured parties have been transported or have left the scene prior to arrival.
661	EMS call where injured parties have been transported by a non-fire service agency or have left the scene prior to arrival.
67	Hazardous materials release investigation, with no hazardous condition found.
671	Hazardous materials release investigation, with no hazardous condition found.
672	Biological hazard investigation with no hazard condition found.

(continues)

Table A.11.3.2 *Continued*

60	Good intent call not able to be classified further.
600	Good intent call not able to be classified further.
7	False Alarm or False Call.
71	Malicious or mischievous false call.
711	Malicious or mischievous false alarm.
710	Malicious or mischievous false call not able to be classified further.
72	Bomb scare, no bomb.
721	Bomb scare, no bomb.
73	System or detector malfunction.
731	Sprinkler activated due to the failure or malfunction of the sprinkler system.
732	Extinguishing system activation due to malfunction.
733	Smoke detector activation due to malfunction.
734	Heat detector activation due to malfunction.
735	Alarm system sounded because of malfunction.
736	Carbon monoxide detector activation due to malfunction.
730	System or detector malfunction not able to be classified further.
74	Unintentional system or detector operation with no fire.
741	Sprinkler alarm activation, no fire — unintentional.
742	Extinguishing system activation.
743	Smoke detector activation, no fire — unintentional.
744	Heat detector activation, no fire — unintentional. A result of a proper system response to environmental stimuli such as high heat conditions.
745	Alarm system sounded, no fire — unintentional.
746	Carbon monoxide detector activation, but no carbon monoxide detected with test equipment. Excluded are carbon monoxide detector malfunctions (736).
740	Unintentional system or detector operation with no fire not able to be classified further.
70	False alarm or false call not able to be classified further.
700	False alarm or false call not able to be classified further.
8	Natural Condition.
	When the response is to another specific type of incident during these conditions, the type of incident is described more specifically using the classifications in the 1 series through 7 series.
81	Severe Weather and Natural Disaster.
811	Earthquake damage assessment where no rescue or other service is rendered.
812	Flood assessment. Excluded are water rescues (36 series).
813	Storm damage assessment.
814	Lightning strike (no fire). Included are investigations of lightning strikes.
815	Severe weather or natural disaster standby.
800	Severe weather or natural disaster not able to be classified further.
9	Special Incident Type.
91	Code or ordinance violation.
911	Code or ordinance violation. Includes suspected or confirmed code or ordinance violation.

(continues)

Table A.11.3.2 *Continued*

90	Special incident type not able to be classified further.
900	Special incident type not able to be classified further.
U	Undetermined incident type.
UU	Undetermined incident type.
UUU	Undetermined incident type.

**A.11.4** The “condition of fire on arrival” data element is used to describe the apparent scope of the fire at the time emergency forces arrive at the fire site. This element can assist in assessments of response time and effectiveness of emergency forces.

**A.11.5.2.1** Table A.11.5.2.1 details the inclusions and exclusions for the type of action taken coding given in 11.5.2.1.

Table A.11.5.2.1 *Type of Action Taken Coding Structure*

1	Fire Control or Extinguishment.
11	Extinguishment by fire service personnel.
12	Salvage and overhaul.
13	Establish fire lines around wildland fire perimeter.
14	Contain fire.
15	Confine fire.
16	Control fire.
17	Manage prescribed fire in wildland.
18	Laddering complete.
19	First water or extinguishing agent on fire.
10	Fire control or extinguishment not able to be classified further.
2	Search and Rescue Activity.
21	Search for lost or missing person.
22	Rescue, remove from harm.
23	Extrication or disentangling of a person.
24	Recovery of body or body parts.
26	Primary search complete.
25	Assign rapid intervention team (RIT)/rapid intervention crew (RIC).
20	Search and rescue activity not able to be classified further.
3	Administer Emergency Medical Services (EMS).
31	Provide first aid and check for injuries.
32	Provide basic life support.
33	Provide advanced life support (ALS).
34	Transport of person from scene in fire service ambulance or apparatus.
35	At patient.
39	Control bleeding.
30	Administer emergency medical services not able to be classified further.
4	Mitigate Hazardous Conditions.
41	Identification, analysis of hazardous materials.
42	Monitor hazardous materials.
43	Hazardous materials spill control and confinement.
44	Hazardous materials leak control and containment.
45	Remove hazard.

(continues)

**Table A.11.5.2.1** *Continued*

46	Decontaminate persons or equipment.
47	Decontamination of occupancy or area exposed to hazardous materials.
48	Remove hazardous materials.
40	Mitigate hazardous conditions not able to be classified further.
5	Support Actions.
51	Ventilation.
52	Forcible entry.
53	Evacuate area.
	Removal of civilians from an area determined to be hazardous.
54	Determine the materials released to be nonhazardous.
55	Establish safe area.
56	Provide air supply.
57	Provide light or electrical power.
58	Utility control.
50	Fire extinguishment, rescue, and hazardous condition mitigation support not able to be classified further.
6	Restore Systems or Provide Services.
61	Restore utilities..
62	Restore sprinkler or fire protection system.
63	Restore fire alarm system.
64	Shut down system.
65	Secure property.
66	Remove water or control flooding condition.
60	Restore systems or provide services not able to be classified further.
7	Provide Assistance.
71	Assist physically disabled.
72	Assist animal.
73	Provide manpower or additional assistance.
74	Provide apparatus.
75	Provide equipment, where equipment is used by another agency.
76	Provide water.
77	Control crowd.
78	Control traffic.
79	Assess damage from severe weather or the results of a natural disaster.
70	Provide assistance not able to be classified further.
8	Provide Information, Investigate, or Enforce Codes or Regulations.
81	Incident command.
82	Notify other relevant agencies.
83	Provide information to the public or media.
84	Refer to proper authorities.
85	Enforce fire code and other codes.
86	Investigate.
87	Investigate, fire out on arrival.
80	Provide information, investigate, or enforce codes or regulations not able to be classified further.
9	Fill-In, Standby.
91	Fill in, move up to another fire station.
92	Stand by.

(continues)

**Table A.11.5.2.1** *Continued*

93	Canceled en route.
90	Fill-in, standby not able to be classified further.
0	Other Actions Taken.
00	Type of action taken not able to be classified further.
UU	Type of action taken undetermined or not reported.

**A.11.6** Fire suppression factors are those that contributed to the growth, spread, or suppression of the fire.

**A.11.7.2** Table A.11.7.2 details the inclusions and exclusions for the method of extinguishment coding given in 11.7.2.

**Table A.11.7.2** Method of Extinguishment Coding Structure

1	Self-extinguished.
2	Makeshift aids.
	Included are garden hoses, sand, rakes, shovels, baking soda, and the like.
3	Portable extinguisher.
4	Automatic extinguishing system.
5	Water carried on apparatus initially assigned to the incident (first-alarm units).
6	Water from hydrant, draft, or standpipe.
7	Water from tanker shuttle regardless of where tankers are refilled.
8	Ground crews with equipment and/or air support.
0	Method of extinguishment not able to be classified further.
U	Method of extinguishment undetermined or not reported.

**A.12.1** Fire casualty data identifies the characteristics of persons injured in fires started by children playing, but it does not identify the characteristics of the children who started the fires. Establishing a database for fire starters will permit retrieval of this data. It will also identify the characteristics of nonjuvenile fire starters, such as suspected arsonists or persons who have started fires through negligence or reckless behavior. A comparison of the characteristics of persons at the scene of an incident who were not injured with those characteristics of persons who were injured can also be of interest. For example, the age distributions of the two groups might be substantially different. Establishing a database for uninjured persons at the fire scene will permit such a comparison.

**A.12.4** Table A.12.4 details the inclusions and exclusions for the race and origin coding given in Section 12.4.

**Table A.12.4** Race and Origin Coding Structure

1	White.
2	Black or African American.
3	American Indian or Alaska native.
4	Asian.
	Included are Japanese, Chinese, Filipino, Korean, Asian Indian, and Vietnamese.

(continues)

**Table A.12.4** *Continued*

5	Native Hawaiian or other Pacific Islander
0	Other, includes multiracial.
U	Race undetermined or not reported.

**A.12.5** Table A.12.5 details the inclusions and exclusions for the ethnicity coding given in Section 12.5.

**Table A.12.5** Ethnicity Coding Structure

1	Hispanic, Spanish, or Latino. Included are Mexican, Puerto Rican, and Cuban.
0	Not Hispanic, Spanish, or Latino.
U	Ethnicity undetermined or not reported.

**A.12.6.2** Table A.12.6.2 details the inclusions and exclusions for the affiliation coding given in 12.6.2.

**Table A.12.6.2** Affiliation Coding Structure

10	Fire service personnel.
20	EMS personnel not fire service.
30	Law enforcement.
40	Other emergency personnel. Excluded are EMS personnel (20) and police (30).
50	Civilian.
00	Affiliation not able to be classified further.
UU	Affiliation undetermined or not reported.

**A.13.3.1.2** Examples of person who are not firefighters but who are at the scene in an emergency capacity include, but are not limited to, police, public works employees, and utility company employees.

**A.13.3.2.2** Examples of person who are not firefighters but who are at the scene in an emergency capacity include, but are not limited to, police, public works employees, and utility company employees.

**A.13.3.7** This data element is primarily used for wildland fires but can aid other fire departments when fires cover relatively large areas in urban and suburban areas.

**A.14.3.2** The following alphabetical list is based on the logic and definitions presented in 14.3.2 for apparent symptoms. It is designed to assist a user in selecting the proper classification for apparent symptoms. A person using this list should review the classification assigned in 14.3.2 to ensure that there are no qualifications on the definition of the term.

61	Abortion
25	Abrasion
93	Alcohol impairment
91	Allergic reaction to medicines
36	Amputation
02	Asphyxiation
63	Avulsion of eye
73	Bleeding
72	Blunt internal trauma (closed)

(continues)

24	Bruise
13	Burn (scald)
12	Burn (thermal)
11	Burn and smoke inhalation
14	Burn from chemicals
15	Burn from electricity
42	Cardiac arrest
41	Cardiac symptoms
14	Chemical burn
51	Chills
32	Closed fracture
24	Contusion
71	Convulsion or seizure
35	Crushing
21	Cut
83	Dehydration
62	Delivery, obstetrics
74	Diabetic coma
74	Diabetic shock
03	Difficulty breathing
31	Dislocation
81	Disorientation
82	Dizziness
64	Drowning
92	Drug overdose
15	Electric burn
66	Electric shock
94	Emotional stress
63	Eye (avulsion of)
63	Eye out of socket
63	Eye trauma
82	Fainting — weakness
52	Fever
65	Foreign body
32	Fracture
57	Frostbite
02	Fume inhalation
71	Grand mal
23	Gunshot wounds
23	Gunshot, projectile wound
02	Hazardous fumes inhalation
73	Hemorrhaging
91	Hypersensitivity
93	Impairment similar to that caused by alcohol
72	Internal trauma (closed blunt)
21	Laceration
95	Mental disorder
24	Minor trauma
61	Miscarriage
53	Nausea
NN	No apparent symptom
55	Numbness
62	Obstetrics — delivery
61	Obstetrics — miscarriage
65	Obstruction
32	Open fracture
98	Pain only
56	Paralysis
55	Paresthesia, numbness, tingling
71	Petit mal
67	Poison

(continues)



23	Projectile wound — high velocity
94	Psychological stress
22	Puncture wound (penetrating)
44	Respiratory arrest
13	Scald
71	Seizure
96	Shock, anaphylactic
66	Shock, electrical
03	Shortness of breath
50	Sickness
01	Smoke inhalation
11	Smoke inhalation and burns
33	Sprain
22	Stab wounds
22	Stabbing
33	Strain
43	Stroke (C.V.A.)
34	Swelling
12	Thermal burn
55	Tingling
97	Unconscious
54	Vomiting
82	Weakness

**A.14.3.2.1** Table A.14.3.2.1 details the inclusions and exclusions for the apparent symptoms coding given in 14.3.2.1.

**Table A.14.3.2.1 Apparent Symptoms Coding Structure**

01	Smoke inhalation.
02	Hazardous fumes inhalation.
03	Breathing difficulty or shortness of breath.
11	Burns and smoke inhalation.
12	Burns only: thermal.
13	Burn: scald.
14	Burn: chemical.
15	Burn: electric.
21	Cut or laceration.
22	Stab wound/puncture wound: penetrating.
23	Gunshot wound, projectile wound.
24	Contusion, bruise, minor trauma.
25	Abrasion.
31	Dislocation.
32	Fracture.
33	Strain or sprain.
34	Swelling.
35	Crushing.
36	Amputation.
41	Cardiac symptoms.
42	Cardiac arrest.
43	Stroke.
44	Respiratory arrest.
51	Chills.
52	Fever.
53	Nausea.
54	Vomiting.
55	Numbness or tingling, paresthesia.
56	Paralysis.
57	Frostbite.
58	Sickness, other.

(continues)

**Table A.14.3.2.1 Continued**

61	Miscarriage.
62	Obstetrics — delivery.
63	Eye trauma, avulsion.
64	Drowning.
65	Foreign body obstruction.
66	Electric shock.
67	Poison.
71	Convulsion or seizure.
72	Internal trauma.
73	Hemorrhaging, bleeding internally.
74	Diabetic shock.
75	Diabetic coma.
81	Disorientation.
82	Dizziness/fainting/weakness.
83	Exhaustion/fatigue, including heat exhaustion.
84	Heat stroke.
85	Dehydration.
91	Allergic reaction.
	Included are anaphylactic shock and hypersensitivity to medication.
92	Drug overdose.
93	Alcohol impairment.
94	Emotional/psychological stress.
95	Mental disorder.
96	Shock.
97	Unconscious.
98	Pain only.
00	Apparent symptom not able to be classified further.
NN	No apparent symptom.
UU	Apparent symptom undetermined or not reported.

**A.14.4.1** It is recommended that the “apparent symptom(s)” and “part(s) of the body” data elements be reported as a pair.

**A.14.5.2** Table A.14.5.2 details the inclusions and exclusions for the casualty type by situation found coding given in 14.5.2.

**Table A.14.5.2 Casualty Type by Situation Found Coding Structure**

1	Vehicle Related.
	Excluded are pedestrians struck by vehicle (27).
11	Aviation accident.
12	Boat accident.
13	Train accident.
14	Motor vehicle accident.
15	Motorcycle, moped accident.
	Excluded are two-wheel powered vehicles designed exclusively for use off the road (16).
16	Other motorized vehicle accident.
	Included are snowmobiles, all-terrain vehicles, two-wheel powered vehicles designed exclusively for use off the road, and similar vehicles.
17	Bicycle accident.
18	Nonmotorized vehicle accident.
	Included are accidents involving skateboards, tricycles, sleds, and the like.

(continues)

Table A.14.5.2 *Continued*

	Excluded are bicycle accidents (17).
10	Vehicle related not able to be classified further.
2	Natural Activity Related.
21	Exposure to weather. Included are frostbite, heat exhaustion, and the like.
22	Insect sting.
23	Snake bite.
24	Animal bite.
25	Sports accident, supervised.
26	Sports accident, unsupervised.
27	Pedestrian struck by vehicle.
20	Natural activity related not able to be classified further.
3	Fire, Explosive, Fireworks Related. Included is smoke or gas related to fire.
31	Structure fire injury.
32	Vehicle fire injury.
33	Grass, brush, woodlands fire injury.
34	Flammable gas, flammable liquid, or chemical fire injury outside.
35	Outside fire injury (not included in 33 or 34 above).
36	Explosives injury.
37	Fireworks injury.
30	Fire, explosive, fireworks related not able to be classified further.
4	Inflicted Injury Related.
41	Altercation (fistfight).
42	Physical abuse.
43	Thermal burn not associated with hostile fire (30–37). Included are scalds. Excluded are chemical burns (62).
44	Gunshot.
45	Rape, sexual assault.
46	Knifing, cutting, stabbing.
47	Mugging.
48	Struck by thrown or falling object.
40	Inflicted injury related not able to be classified further.
5	Miscellaneous Injury Related.
51	Building collapse.
52	Cave-in.
53	Construction accident. Excluded are building collapse (51) and cave-in (52).
54	Hand tool mishap. Excluded are construction accidents (53).
55	Lawn mower mishap.
56	Power tool mishap. Excluded are construction accidents (53).
57	Minor slip or fall. Included are most household falls and other falls of 15 ft (5 m) or less.
58	Major slip or fall. Included are falls of greater than 15 ft (5 m).
6	Miscellaneous Injury Related (continued).
61	Body part stuck in or caught in machinery.

(continues)

Table A.14.5.2 *Continued*

62	Hazardous materials or chemical burn. Excluded is inhalation of fumes from hazardous materials or chemicals (66) or exposure to same (67).
63	Electrical shock.
64	Motor vehicle repair accident.
65	Radiation, exposure to.
66	Smoke or gas inhalation (other than when related to a fire).
67	Exposure to hazardous materials (not included in 62, 65, or 66).
60	Miscellaneous injury related not able to be classified further.
7	General Type Sickness Related.
8	Other Medical Situation Related.
81	Alcoholic overdose.
82	Unconsciousness, stupor.
83	Childbirth or pregnancy problem.
84	Drowning.
85	Drug overdose, legal drugs. Excluded are attempted suicide and suicide (88).
86	Drug overdose, illegal drugs. Excluded are attempted suicide and suicide (88).
88	Suicide or attempted suicide.
80	Other medical situation related not able to be classified further.
9	No Casualty Found.
91	Person seen, but not in need of medical care. Included is a person sleeping in car or alongside road.
92	Patient not seen, unable to determine situation. Included is a patient who left scene.
93	Stand-by at scene or crew used at a fire incident.
94	Manpower assist to another EMS vehicle.
95	Nothing found at location given, not suspect. Included is dispatch to wrong location.
96	Suspected false alarm.
00	Casualty type by situation found not able to be classified further.
UU	Casualty type by situation found undetermined or not reported.

**A.14.6.2** Table A.14.6.2 details the inclusions and exclusions for the human factors contributing to injury or death coding given in 14.6.2.

Table A.14.6.2 Human Factors Contributing to Injury or Death Coding Structure

1	Asleep, no known impairment.
2	Unconscious.
3	Possibly impaired by alcohol.
4	Possibly impaired by other drug or chemical. Excluded are alcohol-induced impairment (3) and drug- or chemical-induced impairment (4).
5	Possibly mentally impaired.
6	Physically impaired. Included are temporary conditions and overexertion.

(continues)

Table A.14.6.2 *Continued*

7	Physically restrained.
8	Unattended or unsupervised person. Included are "latchkey" situations whether the person involved is young or old, and situations where the person involved required supervision or care but that supervision or care was not given.
0	Human factor contributing to injury not able to be classified further.
N	No human factor contributing to injury. Included are persons who are awake and unimpaired.
U	Human factor contributing to injury undetermined or not reported.

**A.14.7.1** It is recommended that the "situational factors contributing to injury or death" data element be used with the "cause of injury" data element to supplement the information reported about the cause of the injury.

**A.14.7.2** Table A.14.7.2 details the inclusions and exclusions for the situational factors contributing to injury or death coding given in 14.7.2.

Table A.14.7.2 Situational Factors Contributing to Injury or Death Coding Structure

1	Egress Problem.
11	Crowd situation, limited exits.
12	Mechanical obstacles to exit.
13	Locked exit or other problem with exit.
14	Problem with quick-release burglar or security bar.
15	Permanently locked or installed burglar or security bar, intrusion barrier.
16	Window type or size impeded egress.
10	Egress problem not able to be classified further.
2	Fire Pattern.
21	Exits blocked by flame.
22	Exits blocked by smoke.
23	Vision blocked or impaired by smoke.
24	Trapped above fire.
25	Trapped below fire.
20	Fire pattern not able to be classified further.
3	Escape.
31	Unfamiliar with exits.
32	Excessive travel distance to nearest clear exit.
33	Chose inappropriate exit route.
34	Reentered building.
35	Clothing caught fire while escaping. Excluded is clothing on a person closely involved with ignition (91).
30	Escape not able to be classified further.
4	Collapse.
41	Roof collapse.
42	Wall collapse.
43	Floor collapse.
40	Collapse not able to be classified further.
5	Vehicle-Related Factors.
51	Trapped in/by vehicle.

(continues)

Table A.14.7.2 *Continued*

52	Vehicle collision, roll-over.
50	Vehicle-related not able to be classified further.
6	Equipment-Related Factors.
61	Unvented heating equipment.
62	Improper use of heating equipment.
63	Improper use of cooking equipment.
60	Equipment-related factors not able to be classified further.
9	Other.
91	Clothing burned, not while escaping. Included is clothing on a person closely involved with ignition.
92	Overexertion.
99	Multiple situational factors contributing to injury.
00	Situational factor contributed to injury not able to be classified further.
NN	No situational factor contributing to injury.
UU	Situational factor contributing to injury undetermined or not reported.

**A.14.8.3** If the patient is transported from the scene, the first location where the patient was taken should be reported regardless of where the patient might have been subsequently taken for treatment or rehabilitation.

**A.14.8.3.2** Table A.14.8.3.2 details the inclusions and exclusions for the disposition of casualty coding given in 14.8.3.2.

Table A.14.8.3.2 Disposition of Casualty Coding Structure

1	Hospital or emergency care facility.
4	Non-emergency health care facility. Included are doctor's offices.
5	Morgue or funeral home.
6	Residence.
7	Station, quarters, assigned work location.
8	Treatment at scene and release.
9	Treatment refused. Excluded are situations where the patient is treated at the scene and released without being transported (8).
0	Disposition of casualty not able to be classified further.
U	Disposition of casualty undetermined or not reported.

**A.14.9.2** Table A.14.9.2 details the inclusions and exclusions for the activity at time of injury coding given in 14.9.2.

Table A.14.9.2 Activity at Time of Injury Coding Structure

1	Escaping.
2	Rescue attempt.
3	Fire control attempt.
4	Return to vicinity of fire before it is controlled. Excluded are rescue attempts (2).

(continues)

**Table A.14.9.2 Continued**

5	Return to vicinity of fire after it is controlled. Included are cleanup, salvage, and mop-up.
6	Sleeping, no known impairment.
7	Inability to act.
8	Irrational action.
0	Activity at time of injury not able to be classified further.
U	Activity at time of injury undetermined or not reported.

**A.14.12.2** Table A.14.12.2 details the inclusions and exclusions for the activity at time of fire service injury or accident coding given in 14.12.2.

**Table A.14.12.2 Activity at Time of Fire Service Injury or Accident Coding Structure**

1	Boarding, Driving, or Riding on a Vehicle.
11	Boarding fire department vehicle.
12	Driving fire department vehicle.
13	Tillering fire department vehicle.
14	Riding fire department vehicle.
15	Exiting fire department vehicle.
16	Driving/riding non-fire department vehicle.
17	Boarding/exiting non-fire department vehicle.
10	Driving or riding on a vehicle not able to be classified further.
2	Operating Fire Department Apparatus.
21	Operating an engine or pumper.
22	Operating an aerial ladder or elevating platform.
23	Operating an EMS vehicle.
24	Operating a hazardous materials vehicle.
25	Operating a rescue vehicle.
20	Operating fire department apparatus not able to be classified further.
3	Extinguishing Fire or Neutralizing Incident.
31	Handling charged hose lines.
32	Using hand extinguishers.
33	Operating master stream device.
34	Using hand tools in extinguishment activity.
35	Removing power lines.
36	Removing flammable liquids or chemicals.
37	Shutting off utilities, gas lines, and the like.
30	Extinguishing fire or neutralizing incident not able to be classified further.
4	Suppression Support Operations.
41	Forcible entry.
42	Ventilation with power tools.
43	Ventilation with hand tools.
44	Salvage.
45	Overhaul.
40	Suppression support not able to be classified further.
5	Access or Egress Using Ladders.
51	Carrying ground ladder.
52	Raising ground ladder.
53	Lowering ground ladder.

(continues)

**Table A.14.12.2 Continued**

54	Climbing ladder.
55	Scaling.
56	Escaping fire or hazard.
57	Moving or lifting a patient with carrying device.
58	Moving or lifting a patient without carrying device.
50	Access or egress not able to be classified further.
6	Rescue or EMS.
61	Searching for victim.
62	Rescue of fire victim.
63	Rescue of nonfire victim.
64	Water rescue.
65	Providing emergency medical care.
66	Diving operations.
67	Extraction with power tools.
68	Extraction with hand tools.
60	Rescue or EMS not able to be classified further.
7	Miscellaneous Incident Scene Activity.
71	Directing traffic.
72	Catching hydrant.
73	Laying hose.
74	Moving tools or equipment around scene.
75	Picking up tools, equipment, hose on scene.
76	Setting up lighting. Included are portable generator operations.
77	Operating portable pump.
70	Miscellaneous incident scene activity not able to be classified further.
8	Station Activity.
81	Moving about station, alarm sounding.
82	Moving about station, normal activity.
83	Station maintenance.
84	Vehicle maintenance.
85	Equipment maintenance.
86	Physical fitness activity: supervised.
87	Physical fitness activity: unsupervised.
88	Training activity or drill.
80	Station activity not able to be classified further.
9	Other Activity.
91	Incident investigation: during incident.
92	Incident investigation: after incident.
93	Inspection activity.
94	Administrative work.
95	Communication work.
00	Activity at time of fire service injury or accident not able to be classified further.
UU	Activity at time of fire service injury or accident undetermined or not reported.

**A.14.13.2** Table A.14.13.2 details the inclusions and exclusions for the general location where injury occurred coding given in 14.13.2.

**Table A.14.13.2 General Location Where Injury Occurred Coding Structure**

1	En route to fire department location.
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(continues)

**Table A.14.13.2** *Continued*

	Included are volunteers responding to the fire station or apparatus traveling between fire department locations.
2	At fire department location.
3	En route to incident or assignment.
4	En route to medical facility.
5	At scene, in or on structure.
6	At scene, outside structure.
7	At medical facility.
8	Returning from incident or assignment.
9	Returning from medical facility.
0	General location where injury occurred not able to be classified further.
U	General location where injury occurred undetermined or not reported.

**A.14.13.3** Table A.14.13.3 details the inclusions and exclusions for the specific location where injury occurred coding given in 14.13.3.

**Table A.14.13.3 Specific Location Where Injury Occurred Coding Structure**

22	Outside at grade.
23	On roof.
24	On aerial ladder or in basket.
25	On ground ladder.
26	On vertical surface or ledge.
27	On fire escape or outside stairway.
28	On steep grade.
31	In open pit.
32	In ditch or trench.
33	In quarry or mine.
34	In ravine.
35	In well.
36	In water.
45	In attic, crawl space, or other confined structural space.
46	In structure at or above grade. Excluded are attics, crawl spaces, and confined structural spaces (45) and roofs (23).
47	In structure, below grade. Excluded are tunnels (53) and sewers (54).
53	In tunnel.
54	In sewer.
61	In or on motor vehicle.
63	In or on rail vehicle.
64	In or on boat, ship, or barge.
65	In or on aircraft.
00	Specific location where injury occurred not able to be classified further.
UU	Specific location where injury occurred undetermined or not reported.

**A.14.14.2** Table A.14.14.2 details the inclusions and exclusions for the cause of civilian injury coding given in 14.14.2.

**Table A.14.14.2 Cause of Civilian Injury Coding Structure**

1	Exposure to fire products, such as flame, heat, smoke, and gas.
2	Exposure to hazardous materials or toxic fumes other than smoke.
3	Jump in escape attempt.
4	Fall, slip, or trip.
5	Caught or trapped.
6	Structural collapse.
7	Struck by or contact with object. Included are assaults by persons or animals.
8	Overexertion or strain.
9	Multiple causes.
0	Cause of civilian injury not able to be classified further.
U	Cause of civilian injury undetermined or not reported.

**A.14.14.3** Table A.14.14.3 details the inclusions and exclusions for the cause of firefighter injury coding given in 14.14.3.

**Table A.14.14.3 Cause of Firefighter Injury Coding Structure**

1	Fall.
2	Jump.
3	Slip or trip.
4	Exposure to hazard, including exposure to heat, smoke, or toxic agents.
5	Struck or assaulted by person, animal, or moving object.
6	Contact with object (firefighter moved into or onto object). Included are running into objects, stepping on objects, and grabbing a hot or electrically charged object.
7	Overexertion or strain.
0	Cause of firefighter injury not able to be classified further.
U	Cause of firefighter injury undetermined or not reported.

**A.14.16.2** Table A.14.16.2 details the inclusions and exclusions for the object involved in injury coding given in 14.16.2.

**Table A.14.16.2 Object Involved in Injury Coding Structure**

11	Coupling.
12	Uncharged hose.
13	Charged hose.
14	Water from master stream.
15	Water from hose line.
16	Water that is not from a hose.
17	Steam.
18	Extinguishing agent, not water.
21	Aerial ladder, elevating platform.
22	Ground ladder.
23	Tools or equipment.
24	Knife, scissors.
25	Syringe.
26	Fire department vehicle or apparatus.

(continues)

**Table A.14.16.2 Continued**

27	Fire department vehicle door. Included are apparatus compartment doors.
28	Station sliding pole.
30	Structural component, other.
31	Curb.
32	Door in building.
33	Fire escape.
34	Ledge.
35	Stairs.
36	Wall or other vertical surfaces such as cliffs.
37	Window.
38	Roof.
39	Floor or ceiling.
41	Asbestos.
42	Dirt, stones, or debris.
43	Glass.
45	Nails.
46	Splinters.
47	Embers.
48	Hot tar.
49	Hot metal.
51	Biological agents.
52	Chemicals.
53	Fumes, gases, or smoke.
54	Poisonous plants.
55	Insects.
56	Radioactive materials.
61	Electricity.
62	Extreme weather.
63	Utility flames, flares, torches.
64	Heat or flame.
90	Person, other. Includes other emergency personnel and bystanders.
91	Person: victim.
92	Property and structure contents.
93	Animal.
94	Non-fire department vehicle.
95	Guns. Included are all other projectile weapons.
00	Object involved not able to be classified further.
NN	No object involved in injury.
UU	Object involved in injury undetermined or not reported.

**A.15.5.2** Table A.15.5.2 details the inclusions and exclusions for the prehospital care provided coding given in 15.5.2.

**Table A.15.5.2 Prehospital Care Provided Coding Structure**

01	Antishock trousers.
02	Aspirate (suction).
03	Blood drawn.
04	Cardiopulmonary resuscitation (CPR).
05	Cervical collar.
06	Control bleeding.
07	Defibrillation.
08	Demand valve ventilation (inhalation).
09	Dress wound.

(continues)

**Table A.15.5.2 Continued**

10	EKG transmitted.
11	Esophageal obturator airway.
12	Extricate patient.
13	Ice pack.
14	Irrigate with water or saline.
15	OB delivery.
16	Oropharyngeal airway.
17	Orthopedic stretcher.
18	Positive pressure ventilation (resuscitation). Excluded is demand valve ventilation (08).
20	Psychiatric intervention.
21	Restrain patient.
22	Rotating tourniquet.
23	Sandbags.
24	Sling.
25	Spine board [3 ft (1 m)].
26	Spine board [6 ft (2 m)].
27	Splint. Included are air, board, and other splints.
28	Thrust — abdomen or chest.
29	Tourniquet.
30	Tracheal intubation.
31	Traction splint.
32	Valsalva maneuver.
41	Pearrival instruction given by dispatcher via telephone based on predetermined instruction.
00	Prehospital treatment not able to be classified further.
NN	No treatment given.
UU	Prehospital treatment undetermined or not reported.

**A.15.6.1** Table A.15.6.1 details the inclusions and exclusions for the drugs or fluids administered coding given in 15.6.1.

**Table A.15.6.1 Drugs or Fluids Administered Coding Structure**

01	Activated charcoal.
02	Atropine.
03	Calcium chloride or gluconate.
04	Corticosteroids.
05	Dextrose in water (D5W) with glucose.
06	Diazepam.
07	Diphenhydramine HCl.
08	Dopamine.
09	Epinephrine.
10	Furosemide.
11	Intravenous fluids. Included are dextrose in water (D5W), dextrose in saline, dextrose in Ringer's lactate (RL), RL, and normal saline (NS).
12	Ipecac.
13	Isoproterenol.
14	Lidocaine HCl.
15	Metaraminol.
16	Naloxone.
17	Narcotic.
18	Nitroglycerine (NTG).

(continues)

Table A.15.6.1 *Continued*

19	Nitrous oxide (NO <sub>2</sub> ).
21	Sodium bicarbonate.
00	Drugs or fluids administered not able to be classified further.
UU	Drugs or fluids administered undetermined or not reported.

**A.16.6.5.2** The following alphabetical list is based on the logic and definitions presented in 16.6.5.2 for factors that caused or contributed to the hazardous materials release. It is designed to assist a user in selecting the proper classification for factors that caused or contributed to the hazardous materials release. A person using this list should review the classification assigned in 16.6.5.2 to ensure that there are no qualifications on the definition of the term.

31	Abandoned or discarded
72	Accidentally turned on
37	Alcohol use by individual
91	Animal
33	Asleep
51	Automatic control failure
54	Break
93	Chemical reaction
48	Child with hazardous material
75	Cleaning inadequate
43	Cleaning with flammable liquid
71	Collision
62	Construction deficiency
46	Container movement improper
45	Container unsafe
51	Control failure: automatic
52	Control failure: manual
34	Control inadequate
61	Design deficiency
31	Discarded improperly
37	Drug use by individual
82	Earthquake
55	Electrical failure
78	Equipment not being properly operated
73	Equipment unattended
77	Equipment used for wrong purpose
56	Excess wear
	Explosion (see 94–96)
75	Failure to clean
97	Failure to use ordinary care
33	Fell asleep
	Fire (see 94–96)
	Firefighting operation (see 94–96)
83	Flood
34	Gas released accidentally
53	Ground fault
48	Hazardous material and child
47	Hazardous material placed near heat
43	Hazardous materials used to kindle fire
86	High humidity
88	High temperature
83	High water

(continues)

81	High wind
43	Home dry cleaning
86	Humidity: high
85	Humidity: low
54	Hydraulic line not tight
45	Improper container
61	Improper design
64	Improper installation
42	Improper mixing technique
46	Improper movement of container
76	Improper startup, shutdown
47	Improper storage
34	Inadequate control
64	Installation deficiency
64	Installed too close to heat source
71	Knockdown
56	Lack of maintenance
54	Leak
84	Lightning
85	Low humidity
87	Low temperature
56	Maintenance fault
52	Manual control failure
38	Mental lapse
42	Mixing technique improper
46	Movement of container improper
72	Not turned off
56	Out of adjustment
34	Overfilled container
32	Overheated
74	Overloaded equipment
71	Overturn
43	Painting
54	Part failure
56	Part worn out
37	Person impaired by alcohol, drugs
38	Person with mental, physical impairment
38	Physical handicap
93	Reaction with chemical
43	Refinishing
34	Released or spilled
78	Safety controls bypassed
92	Secondary release
53	Short circuit
76	Shutdown improper
34	Spilled
47	Spontaneous heating
76	Startup improper
47	Storage arrangement unsafe
88	Temperature: high
87	Temperature: low
32	Thawing
34	Transfer improper
73	Unattended equipment
43	Washing with flammable liquid
81	Wind high
56	Worn-out equipment

**A.17.1.1** This data can be useful in tracking and identifying trends with such fires. Elements that are addressed in other sections of this document might also be useful in understanding the circumstances of these fires. These include condition of



fire on arrival (*see Section 11.4*) and property management/ownership (*see Section 6.6*).

**A.17.2.1** In some cases the incident might be referred to another agency, such as law enforcement, for follow-up. Identification of that agency is important to keep track of the investigation. The name of the agency, address, and phone number should be recorded.

**A.17.2.2.1** If a laboratory was used to analyze evidence from a fire scene, it is important to be able to identify that laboratory. The name, address, and phone number of the laboratory should also be recorded.

**A.17.3.1** An analysis of the reasons that motivate persons to intentionally start fires is helpful in developing strategies to prevent such fires.

**A.17.3.2** This information permits analysis of incendiary incident trends based on a person's participation in criminal groups or organizations, and it provides possible links to other similar incendiary cases. The subject might have been motivated to commit the act because of involvement in a larger group or organization or as a means to promote the cause of a larger group or organization.

**A.17.4.1.2** Table A.17.4.1.2 details the inclusions and exclusions for the container type coding given in 17.4.1.2.

**Table A.17.4.1.2 Container Type Coding Structure**

Code	Description
11	Bottle, glass.
12	Bottle, plastic.
13	Jug.
14	Pressurized container.
15	Can.
	Excluded are gasoline and liquid fuel cans (16).
16	Gasoline or liquid fuel can.
17	Box.
NN	No container.
00	Container type not able to be classified further.
UU	Container type undetermined or not reported.

**A.17.5.1.1** Information on the cause of ignition is essential as a guide to fire prevention efforts. It can indicate whether a fire is potentially preventable through public education, code enforcement, investigations, or another strategy.

**A.17.5.1.2** Table A.17.5.1.2 details the inclusions and exclusions for the cause of ignition coding given in 17.5.1.2.

**Table A.17.5.1.2 Cause of Ignition Coding Structure**

1	Intentional. Includes deliberate misuse of a heat source or a fire of an incendiary nature.
2	Unintentional. Includes fires caused by careless, reckless, or accidental acts.
3	Failure of equipment or heat source. Includes mechanical problems.
4	Act of nature.

(continues)

**Table A.17.5.1.2 Continued**

	Includes causes related to weather, earthquakes, floods, and animals.
5	Cause under investigation.
U	Cause undetermined after investigation.

**A.17.5.2** The following alphabetical list is based on the logic and definitions presented in 17.5.2 for physical factors contributing to ignition. It is designed to assist a user in selecting the proper classification for physical factors contributing to ignition. A person using this list should review the classification assigned in Table A.17.5.2.2 to ensure that there are no qualifications on the definition of the term.

11	Abandoned cigarette, cigar, pipe ashes
52	Accidentally turned on
75	Agricultural burn
66	Animals
35	Arc from faulty contact
36	Arc from properly operating equip
36	Arc from switch
21	Automatic control failure
26	Backfire: vehicle engine
73	Bonfire
23	Break
35	Broken conductor
73	Burning rubbish, debris
12	Candle used for light
41	Catalytic converter
19	Child and fireworks
19	Child with flammable liquid
19	Child with hazardous material
19	Child with ignition source
19	Child with matches, open flame
11	Cigar discarded
11	Cigarette discarded
17	Cleaning with flammable liquid
51	Collision
12	Combustible placed near heat
42	Construction deficiency
18	Container unsafe
21	Control failure: automatic
22	Control failure: manual
74	Cooking fire
13	Cutting too close
12	Debris too close to fire
21	Delayed ignition: oil burner
41	Design deficiency
11	Discarding hot material
64	Earthquake
36	Electric fence
	Electrical failure (see 30–37)
58	Equipment not being properly operated
53	Equipment unattended
57	Equipment used for wrong purpose
25	Excess wear
71	Exposure fire
55	Failure to clean
14	Flammable liquid spilled

(continues)

16 Flammable liquid used to kindle fire  
 63 Flood  
 37 Fluorescent light ballast  
 27 Fuel improper for application  
 14 Fuel released or spilled  
 15 Fueling technique improper  
 14 Gas released accidentally  
 Ground fault (see 32–34)  
 32 Ground fault from mechanical damage  
 33 Ground fault from faulty insulation  
 19 Hazardous material and child  
 43 Heater unsafely placed  
 60 High temperature  
 63 High water  
 61 High wind  
 17 Home dry cleaning  
 23 Hydraulic line not tight  
 18 Improper container  
 41 Improper design  
 27 Improper fuel used  
 15 Improper fueling technique  
 43 Improper installation  
 56 Improper startup, shutdown  
 18 Improper storage  
 43 Installation deficiency  
 43 Installation faulty  
 43 Installed too close to combustibles  
 51 Knockdown  
 25 Lack of maintenance  
 75 Land management burn  
 23 Leak  
 37 Light ballast  
 43 Light bulb unsafely placed  
 62 Lightning  
 60 Low humidity  
 60 Low temperature  
 25 Maintenance fault  
 22 Manual control failure  
 44 Manufacturing deficiency  
 12 Matches used for light  
 52 Not turned off  
 21 Oil burner delayed ignition  
 74 Open fire for warming, cooking  
 25 Out of adjustment  
 58 Over-fusing  
 54 Overloaded  
 51 Overturn  
 17 Painting  
 23 Part failure  
 25 Part worn out  
 11 Pipe ashes discarded  
 71 Property too close  
 17 Refinishing  
 72 Rekindle  
 Short circuit (see 32–34)  
 32 Short circuit from mechanical damage  
 33 Short circuit from faulty insulation  
 31 Short circuit, water caused  
 43 Spark arrester missing or improperly installed  
 36 Spark from properly operating equip  
 14 Spilled fuel

18 Spontaneous heating  
 18 Storage arrangement unsafe  
 36 Switch arc  
 60 Temperature: high  
 60 Temperature: low  
 12 Thawing  
 37 Transformer  
 53 Unattended equip  
 65 Volcano  
 74 Warming fire  
 17 Washing with flammable liquid  
 12 Welding too close  
 25 Worn-out equipment

**A.17.5.2.1** Information on the physical factors contributing to ignition is essential as a guide to fire prevention efforts. It can indicate whether a fire is potentially preventable through public education, code enforcement, or another strategy.

**A.17.5.2.2** Table A.17.5.2.2 details the inclusions and exclusions for the physical factors contributing to ignition coding given in 17.5.2.2.

**Table A.17.5.2.2 Physical Factors Contributing to Ignition Coding Structure**

1	Misuse of Material or Product.
11	Abandoned or discarded materials or products. Included are discarded cigarettes, cigars, tobacco embers, hot ashes, or other burning matter. Excluded are outside fires left unattended (division 7).
12	Heat source and combustibles too close to each other.
13	Cutting, welding too close to combustible.
14	Flammable liquid or gas spilled, released accidentally. Excluded are improper fueling technique (15) and accidental release due to improper container (18).
15	Improper fueling technique. Included are overfueling and failure to ground. Excluded are fuel spills (14) and using the improper fuel (27).
16	Flammable liquid used to kindle fire.
17	Washing part or material, cleaning, refinishing, or painting with flammable liquid.
18	Improper container or storage procedure. Included are gasoline in glass or plastic containers, gas containers stored at excessive temperature, and storage conditions that lead to spontaneous ignition.
19	Playing with heat source. Included are playing with matches, candles, and cigarette lighters, and bringing combustibles into a heat source.
10	Misuse of material or product not able to be classified further.
2	Mechanical Failure, Malfunction.
21	Automatic control failure.

(continues)

(continues)

Table A.17.5.2.2 *Continued*

	Included are delayed ignitions of automatic ignitors.
22	Manual control failure.
23	Leak or break, part failure. Included are leaks or breaks of containers or pipes. Excluded are operational deficiencies (division 50) and spill mishaps (14).
25	Worn out, lack of maintenance.
26	Backfire. Included is ignition outside the combustion chamber. Excluded are fires originating as a result of hot catalytic converters (41).
27	Improper fuel used. Included are the use of gasoline in a kerosene heater and the like.
20	Mechanical failure, malfunction not able to be classified further.
3	Electrical Failure, Malfunction.
31	Water-caused short-circuit arc.
32	Short circuit, ground fault, or arc from mechanical damage.
33	Short circuit, ground fault, or arc from defective, worn insulation.
34	Unspecified short circuit, ground fault, or arc.
35	Arc from faulty contact, broken conductor. Included are broken power lines and loose connections.
36	Arc or spark from operating equipment, switch, or electric fence.
37	Fluorescent-light ballast or transformer.
30	Electrical failure, malfunction not able to be classified further.
4	Design, Manufacturing, or Installation Deficiency.
41	Design deficiency. Included are catalytic converters and heat from properly operating equipment.
42	Construction deficiency. Included are improperly built chimneys.
43	Installation deficiency. Included are stoves, furnaces, or stove pipes installed too close to structural members or interior finish; and the improper installation of a flame or spark arrester, muffler, stove pipe, or factory-built chimney. Excluded is storage too close to heat source (12).
44	Manufacturing deficiency.
40	Design, manufacturing, or installation deficiency not able to be classified further.
5	Operational Deficiency.
51	Collision, overturn, knockdown, run over. Included are automobiles and other vehicles.
52	Accidentally turned on, not turned off.
53	Equipment unattended.
54	Equipment overloaded. Included are cords serving too many appliances.
55	Failure to clean.

(continues)

Table A.17.5.2.2 *Continued*

	Included are lint or grease buildups; chimneys, stove pipes, and railroad locomotive eductor tubes.
56	Improper startup or improper shutdown procedures.
57	Equipment used for purpose not intended. Excluded is overloaded equipment (54).
58	Equipment not being operated properly. Included are situations where safety or control devices are bypassed.
50	Operational deficiency not able to be classified further.
6	Natural Condition.
61	High wind.
62	Storm.
63	High water, including floods.
64	Earthquake.
65	Volcanic action.
66	Animal.
60	Natural condition not able to be classified further.
7	Fire Spread or Control.
71	Exposure fire.
72	Rekindle from a previous fire.
73	Outside or open fire for debris or waste disposal. Included are bonfires.
74	Outside or open fire for warming or cooking.
75	Agriculture or land management burns. Included is prescribed burning.
70	Fire spread or control not able to be classified further.
0	Other Factor Contributing to Ignition.
00	Physical factors contributing to ignition not able to be classified further.
NN	No factor contributing to ignition.
UU	Factor contributing to ignition undetermined or not reported.

**A.17.5.3.1** Human factors contributing to ignition are essential guides to fire prevention. They are particularly important when determining how to change human behavior to increase fire safety. Persons designing systems might want to make provision to capture more than one of these factors since they are not mutually exclusive. Likewise, where a person is identified as involved with ignition, the system design should consider collecting the person's age and gender.

**A.17.5.3.2** Table A.17.5.3.2 details the inclusions and exclusions for the human factors contributing to ignition coding given in 17.5.3.2.

Table A.17.5.3.2 Human Factors Contributing to Ignition Coding Structure

1	Person fell asleep. Included are fires that result from a person's falling asleep while smoking.
2	Person possibly was impaired by drugs or alcohol.

(continues)

Table A.17.5.3.2 *Continued*

	Included are people who fall asleep as a result of drugs or alcohol.
3	Excluded are people who simply fall asleep (1). Unattended or unsupervised person. Included are "latchkey" situations, whether the person involved is young or old, and situations where the person involved required supervision or care but that supervision or care was not given.
4	Person possibly mentally impaired. Excluded are impairments of a temporary nature such as that caused by drugs or alcohol (2).
5	Person physically impaired.
6	Multiple persons involved. Included is gang activity.
7	Age was a factor.
8	Gender was a factor.
N	No human factors contributing to ignition.
U	Human factors contributing to ignition undetermined or not reported.

**A.17.6.2.2** Table A.17.6.2.2 details the inclusions and exclusions for the factors contributing to flame travel coding given in 17.6.2.2.

Table A.17.6.2.2 Factors Contributing to Flame Travel Coding Structure

1	Interior Finish.
11	Combustible ceiling finish, covering.
12	Combustible wall finish, covering.
13	Combustible floor finish, covering.
14	Combustible ceiling and wall finish, covering.
15	Combustible ceiling and floor finish, covering.
16	Combustible wall and floor finish, covering.
17	Combustible ceiling, wall, floor finish.
19	Interior finish allowing fire spread not able to be classified further.
2	Structural Factor Allowing Vertical Travel.
21	Nonenclosed stairwell, elevator shaft.
22	Inadequate firestopping. Included are inside of walls, around pipes, poke-throughs, and the like.
23	Air-handling ducts.
24	Utility shaft, pipe shaft.
25	Failure of a rated assembly.
26	Exterior spread.
27	Floor, ceiling.
29	Structural factor allowing vertical travel not able to be classified further.

(continues)

Table A.17.6.2.2 *Continued*

3	Structural Factor Allowing Horizontal Travel.
31	Air-handling duct.
32	Attic space, ceiling, concealed space.
33	Door burned through.
34	Door open.
35	Corridor, excessive open area.
36	Utility opening, pipe opening.
37	Window.
38	Wall.
39	Structural factor allowing horizontal travel not able to be classified further.
4	Physical Transfer of Material Ignited.
41	Human being, animal.
42	Conveyor, special materials handling equipment.
43	Gravity (burning material fell onto unburned material).
44	Wind.
45	Pipeline, material transfer system.
49	Physical transfer of material ignited not able to be classified further.
5	Building Contents.
51	Decoration.
52	Furniture, fixture.
53	Flammable liquid not properly handled or contained.
54	Flammable gas not properly handled or contained.
55	Flammable dust, solid chemical.
56	Explosive, fireworks.
57	Stored material.
59	Building contents not able to be classified further.
6	Environmental Factors.
61	Slope.
62	Wind providing oxygen flow.
63	Flash fuels.
64	Ladder fuels.
65	No separation between vegetation and structure.
9	Other Flame Travel Factor.
98	No important factor contributing to flame travel.
00	Factor contributing to flame travel not able to be classified further.
UU	Factor contributing to flame travel undetermined or not reported.

**A.17.10.3** This information is particularly useful in tracking juvenile firesetting trends and in developing prevention and intervention strategies.

## Annex B Informational References

**B.1 Referenced Publications.** The documents or portions thereof listed in this annex are referenced within the informational sections of this standard and are not part of the requirements of this document unless also listed in Chapter 2 for other reasons.

**B.1.1 NFPA Publications.** National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.

NFPA 10, *Standard for Portable Fire Extinguishers*, 2018 edition.  
NFPA 14, *Standard for the Installation of Standpipe and Hose Systems*, 2019 edition.

NFPA 72<sup>®</sup>, *National Fire Alarm and Signaling Code*<sup>®</sup>, 2019 edition.

NFPA 220, *Standard on Types of Building Construction*, 2018 edition.

NFPA 251, *Standard Methods of Tests of Fire Resistance of Building Construction and Materials*, 2006 edition (withdrawn 2010).

NFPA 921, *Guide for Fire and Explosion Investigations*, 2017 edition.

NFPA 1033, *Standard for Professional Qualifications for Fire Investigator*, 2014 edition.

*Fire Protection Guide to Hazardous Materials*, 13th edition, 2010 edition.

**B.1.2 Other Publications.**

**B.1.2.1 ASTM Publications.** ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.

ASTM E620, *Standard Practice for Reporting Opinions of Technical Experts*, 2011 edition.

ASTM E678, *Standard Practice for Evaluation of Scientific or Technical Data*, 2013 edition.

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**B.1.2.3 Other References.**

Icove, D. J. and Haynes, G. A. "Guidelines for Conducting Peer Reviews of Complex Fire Investigations." *Fire and Materials Conference*, San Francisco, CA, January 29–31, 2007.

Icove, D. J. and Henry, B. P. "Expert Report Writing: Best Practices for Producing Quality Reports." *International Symposium on Fire Investigation Science and Technology*, College Park, MD, September 27–29, 2010.

**B.2 Informational References.** The following documents or portions thereof are listed here as informational resources only. They are not a part of the requirements of this document.

**B.2.1 NFPA Publications.** National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.

NFPA 251, *Standard Methods of Tests of Fire Resistance of Building Construction and Materials*, 2006 edition (withdrawn 2010).

**B.2.2 CPSE Publications.** Center for Public Safety Excellence (CPSE), 4501 Singer Court, Suite 180, Chantilly, VA 20151.

"Commission on Fire Accreditation International (CFAI) Accreditation Model Information Technology Specifications," October 2016.

**B.3 References for Extracts in Informational Sections.** (Reserved)

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