NFPA 901

Standard Classifications for Incident Reporting and Fire Protection Data

2006 Edition

NFPA, 1 Batterymarch Park, Quincy, MA 02169-7471
An International Codes and Standards Organization

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Standard Classifications for

Incident Reporting and Fire Protection Data

2006 Edition

This edition of NFPA 901, *Standard Classifications for Incident Reporting and Fire Protection Data*, was prepared by the Technical Committee on Fire Reporting. It was issued by the Standards Council on January 27, 2006, with an effective date of February 16, 2006, and supersedes all previous editions.

This edition of NFPA 901 was approved as an American National Standard on February 16, 2006.

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 toward the control of fires in rooms, the need for uniform information about fire incidents as well as for an effective method of collecting and using that information has become recognized.

In 1938, a fire reporting system prepared by NFPA was published by the International City Manager's 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 quote: "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. The document was updated in 1971 with minor revisions. With the 1973 edition, data elements were added to report mobile property and details of fire casualties (deaths and injuries). By the time of the 1976 edition, the committee was getting feedback from persons using the data elements in reporting systems and was able to effect modifications to improve the understanding of the data elements. Data elements were also added to report structural fire defenses and their performance at the time of an incident.

In 1981, data elements were added to enhance the reporting of wildland fires, fire fighter casualties, and pre-hospital medical care administered. The 1986 edition introduced data elements for reporting hazardous material. These were expanded to a comprehensive set of hazardous materials data elements in the 1991 edition. The 1995 edition reorganized the document editorially to better group the data elements as they relate to each other. Discussion of how the data elements are 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.

The 2001 edition added several new data elements and extensively revised others based on a detailed analysis by the United States Fire Administration and the National Fire Information Council of the way that data is collected and used by fire departments. Some of the changes split data elements so that a data element focuses on a single question or issue rather than mixing multiple issues in the same data element as had sometimes been done in the past. The changed technology available for data capture and storage no longer places limitations on record size and data manipulation that have sometimes been obstacles in the past.

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

Technical Committee on Fire Reporting

Linda E. Smith, *Chair*
U.S. Consumer Product Safety Commission, MD [C]

Delvin R. Bunton, USDA Forest Service, WA [E]
Dal L. Howard, Valencia, CA [SE]
David J. Icove, Tennessee Valley Authority, TN [U]
Rep. TC on Fire Investigations
Marion A. Long, Virginia Department of Fire Programs, VA [IM]
Rep. National Fire Information Council
William D. Morrison, Dallas Fire Department, TX [IM]
Rep. National Fire Information Council
Mary Prencipe, Ontario Office of the Fire Marshal, Canada [E]
Philip S. Schaenman, TriData Corporation, VA [C]
Stanford D. Stewart, U.S. Department of Homeland Security, MD [C]
Peter Tom, Emergency Management Solutions, Inc., NJ [M]
Rexford Wilson, FIRECOM Institute Ltd., VA [SE]

Alternates

John R. McIntire, Los Angeles County Fire Department, CA [IM]
(Alt. to W. D. Morrison)
Michael G. Meyer, Emergency Management Solutions, Inc., NJ [M]
(Alt. to P. Tom)

Laurence J. Stewart, NFPA Staff Liaison

This list represents the membership at the time the Committee was balloted on the final text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the back of the document.

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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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. As an aid to the user, the complete title and edition of the source documents for extracts in advisory sections of the document are given in Chapter 2 and those for extracts in the informational sections are given in Annex B. Editorial changes to extracted material consist of revising references to an appropriate division in this document or the inclusion of the document number with the division number when the reference is to the original document. Requests for interpretations or revisions of extracted text should be sent to the technical committee responsible for the source document.

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

Chapter 1 Introduction

1.1 Scope. This document describes and defines data elements and classifications used by many fire departments in the United States and other countries to describe fire damage potential and experience during incidents. It does not provide guidelines for a reporting system or related forms.

1.2 Purpose. This document provides a common language for the collection of pre-incident information (such as fire defense features of a structure), fire and other emergency incident data, and post-incident damage assessments. It also defines numeric classifications for various data elements that describe fire protection and fire service information.

Chapter 2 Referenced Publications

2.1 General. The documents or portions thereof listed in this chapter are referenced within this guide and should be considered part of the recommendations of this document.

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

NFPA 10, *Standard for Portable Fire Extinguishers,* 2002 edition.

NFPA 11, *Standard for Low-, Medium-, and High-Expansion Foam,* 2005 edition.

NFPA 12, *Standard on Carbon Dioxide Extinguishing Systems,* 2000 edition.

NFPA 12A, *Standard on Halon 1301 Fire Extinguishing Systems,* 2004 edition.

NFPA 13, *Standard for the Installation of Sprinkler Systems,* 2002 edition.

NFPA 13D, *Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes,* 2002 edition.

NFPA 13R, *Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height,* 2002 edition.

NFPA 14, *Standard for the Installation of Standpipe and Hose Systems,* 2003 edition.

NFPA 15, *Standard for Water Spray Fixed Systems for Fire Protection,* 2001 edition.

NFPA 17, *Standard for Dry Chemical Extinguishing Systems,* 2002 edition.

NFPA 69, *Standard on Explosion Prevention Systems,* 2002 edition.

NFPA 72®, National Fire Alarm Code®, 2002 edition.

NFPA 80A, *Recommended Practice for Protection of Buildings from Exterior Fire Exposures,* 2001 edition.

NFPA *101®, Life Safety Code®,* 2006 edition.

NFPA 220, *Standard on Types of Building Construction,* 2006 edition.

NFPA 251, *Standard Methods of Tests of Fire Resistance of Building Construction and Materials,* 2006 edition.

NFPA 256, *Standard Methods of Fire Tests of Roof Coverings,* 2003 edition.

NFPA 750, *Standard on Water Mist Fire Protection Systems,* 2006 edition.

NFPA 5000®, Building Construction and Safety Code®, 2006 edition.

Fire Protection Guide to Hazardous Materials, 13th edition, 2001.

2.3 Other Publications.

2.3.1 ICBO Publication. International Conference of Building Officials, 5360 Workman Mill Road, Whittier, CA 90601-2298.

Uniform Building Code™, 1997 edition.

2.3.2 ICC Publications. International Code Council, 5203 Leesburg Pike, Suite 600, Falls Church, VA 22041.

International Building Code, 2003 edition.

National Building Code, 1996 edition.

2.3.3 SBCCI Publication. Southern Building Code Congress International, Inc., 900 Montclair Road, Birmingham, AL 35213-1206.

Standard Building Code©, 1997 edition.

2.3.4 U.S. Government Publications. U.S. Government Printing Office, Washington, DC 20402.

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.

2.3.5 U.S. Postal Service Publication. U.S. Postal Service, 475 L'Enfant Plaza SW, Washington, DC 20260-6800.

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

2.3.6 Other Publication.

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

2.4 References for Extracts in Mandatory Sections.

NFPA 30B, *Code for the Manufacture and Storage of Aerosol Products,* 2002 edition.

NFPA 68, *Guide for Venting of Deflagrations,* 2002 edition.

NFPA *101®*, *Life Safety Code®,* 2006 edition.

NFPA 306, *Standard for the Control of Gas Hazards on Vessels,* 2003 edition.

NFPA 402, *Guide for Aircraft Rescue and Fire Fighting Operations,* 2002 edition.

NFPA 921, *Guide for Fire and Explosion Investigations,* 2004 edition.

NFPA 5000®, *Building Construction and Safety Code®,* 2006 edition.

Chapter 3 Definitions

3.1 General. The definitions contained in this chapter apply to the terms used in this guide. Where terms are not defined in this chapter or within another chapter, they should be defined using their ordinarily accepted meanings within the context in which they are used. *Merriam-Webster's Collegiate Dictionary*, 11th edition, is 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 the fire department that a situation exists or may exist that requires a response.

3.3.2 Arc. A high-temperature luminous electric discharge across a gap.

3.3.3 Area of Origin. The room or area where a fire began. [**921,** 2004]

3.3.4 Automatic. That which provides a function without the necessity of human intervention. [***101,*** 2006]

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 3.3.98, Structure Fire.

3.3.8 Burning. The process of self-perpetuating combustion, with or without an open flame. Smoldering is burning.

3.3.9 Cardiopulmonary Resuscitation (CPR). A system used to revive a victim whose heart and breathing have stopped; it includes applying external heart massage and ventilating the lungs and may be accomplished manually or mechanically.

3.3.10 Census Data. Demographic population data available by statistical areas from a governmental agency.

3.3.11 Char. Material that has been partially burned on the exterior of the object and has a blackened, carbonized appearance.

3.3.12 Combustible. A material or structure that will release heat energy on burning.

3.3.13 Combustible Liquid. Any liquid that has a closed-cup flash point at or above 100°F (37.8°C). [**306,** 2003]

3.3.14 Complex. See 3.3.50, General Property Use.

3.3.15* Confine a Fire. To restrict the fire within determined boundaries established either prior to the fire or during the fire.

3.3.16 Contain a Fire. To take suppression action as needed that can reasonably be expected to check the fire spread under prevailing conditions.

3.3.17 Contents Fire. See 3.3.98, Structure Fire.

3.3.18 Defibrillation. A system that utilizes a machine-produced electric shock to abolish a life-threatening heart rhythm.

3.3.19 Emergency Care Attendant. One who has trained to at least advanced first aid and has additional training but is not an EMT.

3.3.20 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.

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

3.3.22 EMS. Emergency Medical Services.

3.3.23 EMT. An emergency medical technician — a person who has completed a certified basic life support program and is holding a current certificate.

3.3.24* Explosion. Violent bursting caused by either a combustion process or an overpressure condition.

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

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

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

3.3.28 Fire. A rapid oxidation process, which is a chemical reaction resulting in the evolution of light and heat in varying intensities. [**921,** 2004]

3.3.29 Fire Area (Structure). The space within a structure bounded by fire division assemblies (2-hour fire rating or greater).

3.3.30 Fire Area (Wildland). The area within wildland fire perimeter control lines.

3.3.31 Fire Blackout. That point in time when there is no longer any evidence of open flame or glow of burned material.

3.3.32 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.

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

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

3.3.35* 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.

3.3.36 Fire Division Assembly. A "fire-rated assembly" that has a fire resistance rating of 2 test hours or longer.

3.3.37* Fire Division Compartment. A complete compartment surrounded on all sides by fire-rated assemblies with a 2-hour fire protection rating or more.

3.3.38 Fire Extinguished. That point in time when there is no longer any abnormal heat or smoke being generated in material that was previously burning.

3.3.39 Fire Ground. See 3.3.21, Emergency Scene.

3.3.40 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.

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

3.3.42 Fire Service Personnel. All employees, whether career or volunteer, of a fire department who are assigned or may be assigned to perform duties at emergency incidents.

3.3.43* Fire Under Control. That point in time when a fire is sufficiently surrounded and quenched so that in the judgment of the commanding officer it no longer threatens destruction of additional property, or in wildland fire, that point in time when a control line is around a fire, any spot fires therefrom, and any interior islands to be saved.

3.3.44 Fire Wall. A fire division assembly with a fire resistance rating of 3 test hours or longer, built to permit complete burnout and collapse of the structure on one side without extension of fire through the fire wall or collapse of the fire wall.

3.3.45 Fixed Object. An object, device, or appliance that is fastened or secured at a specific location, for example, a steam radiator.

3.3.46 Fixed Property Use. See 3.3.94, Specific Property Use.

3.3.47 Flames. Products of combustion that are illuminated by the heat of combustion and accompany the burning of most materials in normal atmospheres.

3.3.48 Flammable Liquid. A liquid that has a closed-cup flash point that is below 100°F (37.8°C) and a maximum vapor pressure of 40 psia (2068 mm Hg) at 100°F (37.8°C). [**30B,** 2002]

3.3.49* Gas. The state of matter characterized by complete molecular mobility and unlimited expansion; used synonymously with the term *vapor.* [**68,** 2002]

3.3.50 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 6.5.)*

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

3.3.52 Ground Fault. A current that flows outside the normal circuit path, such as (a) through the equipment grounding conductor, (b) through conductive material other than the electrical system ground (metal water or plumbing pipes, for example), (c) through a person, or (d) through a combination of these ground return paths.

3.3.53 Hazardous Material. Any material that is an air-reactive material, flammable or combustible liquid, flammable gas, corrosive material, explosive material, organic peroxide, oxidizing material, radioactive material, toxic material, unstable material, biological material or water-reactive material, and any substance or mixture of substances that is an irritant or a strong sensitizer or that generates pressure through exposure to heat, decomposition, or other means.

3.3.54 Heat of Ignition. The heat energy that brings about ignition. Heat energy comes in various forms and usually from a specific object or source. Therefore, the heat of ignition is divided into two parts: (a) equipment involved in ignition and (b) heat source. *(See Sections 8.4 and 8.5.)*

3.3.55* Hostile Fire. Any instance of destructive and uncontrolled burning, including explosion, of combustible solids, liquids, or gases.

3.3.56 Human Exposure. Potential for injury or death to humans.

3.3.57 Ignitible 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.

3.3.58 Ignition. The process of initiating self-sustained combustion. [**921,** 2004]

3.3.59* Incident. An event to which the reporting agency responds or should have responded.

3.3.60 Incident Casualty. A person who is injured or killed as a result of responding to or handling an incident or who is the reason for the incident.

3.3.61 Incident Record. The official file on an incident.

3.3.62* Incident Report. A document prepared by fire department personnel on a particular incident.

3.3.63* 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.

3.3.64 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.

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

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

3.3.67 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^2 (28 m^2) 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 3.3.63, Industrialized Unit.)*

3.3.68 Material First Ignited. The combustible that is first set on fire by the heat of ignition. To be meaningful, both a type of material and an item ignited should be identified. *(See Section 8.6.)*

3.3.69 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.

3.3.70 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 6.7.4.)*

3.3.71 Modular Structure. See 3.3.63, Industrialized Unit.

3.3.72 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.)*

3.3.73 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.

3.3.74 Not Occupied. An area with no persons present; contents or equipment present indicates that the structure is not vacant.

3.3.75* Occupancy. The purpose for which a building or other structure, or part thereof, is used or intended to be used. [***5000,*** 2006]

3.3.76* Occupied. An area with persons present.

3.3.77 Overhaul. The act of making a fire scene safe after the fire is controlled, such as extinguishing or removing burned material, checking inside walls and hidden spaces, etc. [**402,** 2002] *(For wildland fires, see 3.3.72, Mop-up.)*

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

3.3.79 Panelized Structure. See 3.3.63, Industrialized Unit.

3.3.80 Paramedic. A person who has been certified as an EMT-paramedic and is qualified to perform body-invasive techniques, defibrillation, and similar procedures.

3.3.81 Physician's Assistant. A person who has been trained to take patient histories, perform simple diagnostic laboratory tests, initiate basic treatment for common illness, treat emergency cases, give comprehensive physical examinations, provide continual care and counseling, and work directly with patients, all under the supervision of a licensed physician.

3.3.82 Portable Object. An object, device, or appliance that can readily be moved from one place to another, for example, a vacuum cleaner.

3.3.83 Prescribed Fire. Controlled application of fire to wildland fuels in either their natural or modified state, under specified environmental conditions that allow the fire to be confined to a predetermined area and at the same time to produce the intensity of heat and rate of spread required to attain planned resource management objectives.

3.3.84* Property. A thing of value.

3.3.85* Property Inventory. Information known about a property before an emergency occurs.

3.3.86* Property Use. The use to which a property is put.

3.3.87* Rekindle. A return to flaming combustion after apparent but incomplete extinguishment. [**921,** 2004]

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

3.3.89 Response. The deployment of an emergency service resource to an incident.

3.3.90* Room. The space or area bounded by walls.

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

3.3.92 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.

3.3.93 Smoldering. Combustion without flame, usually with incandescence and smoke. [**921,** 2004]

3.3.94 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.

3.3.95 Stationary Object. Any object, device, or appliance that is not fastened but that is not readily moved from one place to another in normal use, for example, a refrigerator.

3.3.96 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,*** 2006]

3.3.97* Structure. An assembly of materials forming a construction for occupancy or use for a specific purpose.

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

3.3.99 Toxic Material. Any material that may constitute a hazard to life or health, either temporary or permanent, from exposure by contact, inhalation, or ingestion.

3.3.100 Vacant. No furnishings or equipment present.

3.3.101 Water Supply Flow. The sustained water supply capacity available for a period of 1 hour to apparatus on the first alarm.

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

3.3.103* Wildland Fire. An unplanned and uncontrolled fire burning in vegetation, including any structures or other improvements thereon.

Chapter 4 Objectives

4.1 Abbreviations for States and Provinces.

4.1.1 States. The following list is consistent with the Federal Information Processing Standard (FIPS).

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

4.1.2 U.S. Territories and Possessions. The following list is consistent with the FIPS.

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
U.S. Minor Outlying Islands	74	UM
Virgin Islands	78	VI

4.1.3 Canadian Provinces. The following list of abbreviations is from Canada Post.

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

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

4.2 Abbreviations for Street Types. When it is desired to standardize the abbreviations for street type or street suffixes, the abbreviations in the U.S. Postal Service's Publication 65, *National Five-Digit ZIP Code and Post Office Directory,* should be used. These abbreviations are also available at the U.S. Postal Service web site at http://www.usps.gov/ncsc/

4.3 Objectives. Hostile fire, medical emergencies, and the release of hazardous materials are societal problems common to all jurisdictions regardless of size. It is only through analysis of data gathered at the time of these incidents and subsequently that an intelligent approach to solving these problems can be made. To this end, there must be a common language for the descriptions of the community and the fire protection in place as well as the emergency incident information. Systematic methods must be available for the routine collection, processing, and use of significant local information.

4.3.1 The major objectives of a uniform reporting system should 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 with information to indicate trends; to measure the effectiveness of fire prevention, fire suppression, and emergency mitigation procedures currently being used; to evaluate the impact of new materials and methods; 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, comprise a complete reporting system. Only through such a system can a dependable body of facts — essential for a knowledgeable and economical attack on fire, emergency medical, and hazardous materials problems — be developed. While some of the data elements have been primarily designed for documenting local fire service activity, many of the data elements also are used by fire protection and fire service agencies at all levels of government, commercial and industrial concerns, other government agencies, and insurance companies. Communities using definitions and data elements compatible with this document will be able to share and compare meaningful information with other communities (jurisdictions) that follow these same standards.

4.4 Guiding Concepts for a Reporting System. The need for information and the capability to collect data are not the same for all fire services. Urban, suburban, rural, and wildland fire agencies could vary tremendously in the amount of data they desire or the level of detail they need. Also, many fire service organizations will tailor their data collection efforts to meet their local information needs. However, each reporting community must use a uniform set of definitions and a uniform data classification structure if it is to maintain compatibility with other communities. This compatibility allows the issues of concern to the community to be represented and considered in broader assessments of fire and emergency service problems. In order to assist a fire service organization that wishes to build its own reporting system and to realize the objectives of collecting and using data in a manner that will provide for a uniform language among agencies, several guiding concepts have been developed. The following concepts are intended to ensure that any method used for the collection of data will be practical and compatible whether handwritten or computerized.

4.4.1 Commitment. Any reporting system should be based on commitment by the entire organization. Imposition of a particular reporting system without commitment by that organization could lead to inaccurate results and should be avoided. Training of personnel in the purposes, benefits, and procedures of a reporting system is critical to its success.

4.4.2 Feedback Information. The original data from reports, when combined and summarized, should provide meaningful information to the reporting units. This should give them access to details that will help them make planning decisions to optimize the allocation and location of resources and encourage accurate input. When this kind of information is developed and used by local agencies, there is an automatic improvement both in the accuracy and completeness in the collection of data and in the agencies' ability to direct their resources.

4.4.3 Simplicity. An incident reporting system should be based on a single incident record for each fire service incident. The contents of that record will depend on the complexity of the incident and on the amount of follow-up information needed to understand that incident. Each report that becomes part of that record should be geared to what that person can gather within his or her normal duties. The incident record should then tie the various reports together.

4.4.4 Raise Questions. Any system should reveal areas for action and areas for additional study. Thus, a basic system should raise important questions, not try to give answers to all preconceived questions. Special studies should be conducted to answer "one-time" questions or areas of special concern.

4.4.5 Report Completion. The original report(s) should be completed by the person who gathered the data. It should reflect what was actually seen or done at the incident. To describe the situation accurately, the report can be written in the person's own words, coded using the data element classifications in this document, or presented as a combination of both. The classification of the data can be done by the person completing the report or by a central coding office.

4.4.6 Report All Incidents. Every incident should be reported regardless of the type or extent of that incident. An incident occurs when there is a response to any alarm. This includes responses to actual emergencies as well as false calls, situations when the responding units are returned by radio, and all other incidents whether or not any work was performed at the scene.

4.5 Fact Finding. The traditional legal function of reporting incidents can be satisfied with a written narrative of the basic facts, or it can be as sophisticated as an automated system from which data can be retrieved on demand. To serve as input to a fire reporting system, however, an incident report must be clearly structured and must use uniform definitions and terminology. The collection of incident data requires forms or a computer, instructions on how to complete the reports so that information collected is provided in a uniform manner, and the provision of centralized long-term storage of the records.

4.5.1 Pre-Incident Data. Any time a member of the fire service enters a property, an opportunity exists to collect data about that property. The purpose of the visit may be for checking a pre-fire plan, a hazard reduction inspection, or a fire equipment readiness evaluation (e.g., checking pumps, alarms, or standpipes). Many fire service agencies build and maintain a record in a file for each property within their jurisdiction. This file should 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.

4.5.1.1 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.

4.5.1.2 A well-maintained property file can assist the fire service agency in planning and prioritizing fire prevention activities, as well as provide tactical information at the time of an incident. Data collected prior to an incident can also be extremely useful during an incident investigation in understanding the condition of the property before the incident.

4.5.2 The Incident Report. Every time the fire service responds to an alarm, an incident occurs. The incident may be a fire, smoke scare, medical emergency, rescue, hazardous materials situation, or other need. In all cases an incident report should be filed. The reporting agency should establish in its administrative policy whether information gathered initially at the scene and included in reports is to be considered preliminary or final. Preliminary information is generally subject to updates and supplemental reports based on additional investigation. In this manner, the agency can clarify whether information in the report represents an initial determination or a

final determination with respect to specific data. For example, the initial determination of how a fire started and dollar loss may be adjusted upon further investigation. By establishing a policy (or even providing for the collection of multiple data elements labeled "preliminary" and "final"), personnel will be encouraged to complete each report without concern about whether subsequently gathered information appears to contradict preliminary determinations.

4.5.3 Updating the Report. Data to update the report could become available from departmental sources such as a safety officer, fire investigator, or training officer. Other sources such as hospital personnel and insurance adjusters could also yield helpful data. In both cases an updated report should be filed. Information from these reports is also useful in keeping property information current.

4.6 Data Processing. Once data has been received, it should be processed into a record useful for legal, planning, and management purposes. The first step involves checking the reports for accuracy and completeness and then aggregating information into a composite record. The second step involves the creation of a file consisting of data from incident records and data gathered during pre-incident inspections.

4.7 Data Use. Once an incident report is complete, it has many potential uses. At the least, it should meet the informational needs of all the sectors of the local fire service. These include information required both from a legal standpoint and for strategic and tactical planning. A specific use would be to provide information back to the company officers on their specific part of the protected community. A more general use would be to spot trends in fire and other emergency incidents and to provide 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 grows, the company officer, the fire service manager, and the chief of the department will have increasingly better information to use in managing their local problem. Regional and national agencies can combine the data and create useful, broad-based information. Another vital function of a reporting system is to provide input to those designing and marketing new products and equipment (potential ignition sources) and to those designing and providing interior finishes and furnishings (available fuels), so prevention efforts can focus on real fire problems. Other standard-setting and enforcement agencies can use this information to evaluate the effectiveness of their work. Each time a system of fire protection 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 system of fire protection fails, as indicated by an expensive loss, injuries, or death, then this failure must be accurately recorded so that the confidence in that system of fire protection can be reduced. On a broader scale, industry, educators, medical personnel, architects, research scientists, fire protection engineers, and fire service managers can work as a team to reduce the fire problems and other demands for emergency services.

4.8 Standard Classifications. To ensure that the least number of errors are made when fire protection and incident data is transcribed into classifications and later processed, several classification conventions have been used throughout this document.

4.8.1 Hierarchical Structure. Some data elements in this document (for example, Section 6.6, Specific Property Use) are broken down into great detail. To encode the maximum level of detail may require the use of as many as three digits. However, some agencies might wish to incorporate less detail into their fire reports. Therefore, the classifications have been designed so that the last digit in a two-digit classification, or even the last two digits in a three-digit classification, can be dropped, while retaining the broad meaning of the category. It is recommended, however, that as much detail be gathered as practical, for it will be very difficult to gather later. It is also possible for users to add one or more digits to the end of any series of classifications if they want a more detailed breakdown of a particular data element. When used, these additional digits should subdivide the primary classification as defined in this document, so they can then be stripped off when the data is passed on to a state or national database, without loss of the data's integrity.

4.8.2 Unclassified Information. Sometimes the available classifications for a given data element or subdivision within that data element will not contain a classification for the specific detail that a person wants to report. For example, in the data element "area of origin" (Section 8.3) numeric classifications 41 through 47 are provided to classify a variety of storage areas. If a storage area is not listed in these classifications or the person reporting the data cannot distinguish the area more specifically than as a storage area, it is reported as "storage area not able to be classified further" and would be classified as 40. Classification 0 or classifications ending in 0 are used throughout the document to mean that details about the object, item, or fact being classified are known but do not fit into one of the specific classifications, or that more specific details could not be determined. It is recommended that whenever a classification ending in 0 is used, descriptive information about the item that could not be classified should be included on the incident report.

4.8.3 Undetermined Information. If information for which a classification system exists is undetermined or is not reported, the classification should not be left blank. The letter(s) U, UU, or UUU is used to indicate that there is no information available for that data element.

4.8.4 Data Element Not Applicable. There are some data elements in this document that might not be applicable to a given incident or to which the answer might be "none." The alphabetic classification N has been reserved in these data elements to classify such data.

4.8.5 "Included Are" and "Excluded Are" Statements. Throughout the classification numbers and their descriptions for various data elements there are specific items listed that are to be classified using that number. These are prefaced by the words "Included are." The list is not designed to be all-inclusive but to ensure that those specific items are classified with that number. There could also be specific items that should not be classified using that number. These are prefaced by the words "Excluded are." A number in parentheses is the classification number that should be used for those specific items.

4.8.6 Agency-Specific Classifications. Some fire service organizations find that they have special problems not covered in sufficient detail by the data elements or the classifications described in this document. For example, a fire department could have an important fire problem in a particular type of

tenement building common in its area that it wishes to record. The department might wish to add its own numeric classifications to report that problem within one of the data elements defined in this document, or it could establish its own data element to track that problem. However, the data must be collected so that it can be directly translated into the standard classifications before the department's data is merged with data from other departments or contributed to a state or national database. Otherwise, the larger database will contain misclassifications leading to confusion and errors when attempts are made to analyze the data.

4.9 Nonclassified Data. Some data elements do not require classification to achieve uniformity. Such elements include dates and times, numeric information, and text. Careful consideration should be given to the methods used to integrate these kinds of informational elements into any reporting system.

4.9.1 Dates and Times. There are many points in time in the course of an incident. In a fire, for example, these include ignition, detection, alarm, dispatch, arrival on the scene, agent application, blackout, and leaving the scene. To avoid ambiguity and to provide additional useful information, events selected for data collection should be accompanied by data elements that relate each event to the date and time it occurs. Dates are generally recorded using the numeric designation for month, day, and year, recording two digits for each (e.g., November 21, 2001 would be recorded as 11/21/01). Automated systems should store the year as four digits, however, to reduce date ambiguity. Time of day is generally recorded in military time (e.g., 1:00 p.m. would be recorded as 1300) to avoid the need for the additional a.m. or p.m. designation. Since many events can cross date boundaries, a date should accompany every recorded time. Midnight should be recorded as 0000 and is the beginning of a new day.

4.9.2 Numeric Information. Many data elements can be recorded directly with numbers (e.g., the number of engines that responded or the number of persons injured). Numbers are used whenever it is anticipated that the data might later be summarized, averaged, or otherwise processed. Three aspects of numeric data elements merit further consideration. First, unless it is obvious from the context or the name of the data element, all numbers should be labeled with units (e.g., the spill was 50 gallons; the temperature at ground level was 30°C). Where the number can potentially have both a plus and a minus value, the person reporting the data should specifically report the sign. Second, consider the level of desired precision. 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., ¼ 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. Third, special consideration should be given to cases in which numeric information is not available or is not reported. These situations must be clearly distinguished from a reported numeric value of zero. Responding to an incident with "zero" personnel has a different meaning from responding to an incident with an unreported number of personnel. If both responses of personnel are recorded as zero, 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 4.9.3*) 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.

4.9.3 Text. Useful incident data that cannot be realistically classified or reduced to numbers must be entered as text. These elements 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.

Chapter 5 Incident Identification and Location

5.1 Purpose and Application. The purpose of the data elements identified by this chapter is to provide sufficient identification information to uniquely identify each incident response.

5.1.1 These data elements collect information needed to uniquely identify an incident response by a fire agency. These elements include information needed by the fire agency to uniquely identify the incident within fire department files, to identify the appropriate district, shift, and officer responsible for the incident. This chapter also includes time-related information used to identify when the incident began and ended, as well as current weather information and incident severity information.

5.1.2 This section contains data elements that permit the fire department to identify and analyze incident patterns. The data elements collect information that identifies an incident as a unique occurrence in time. This section also contains information of fire department response identification, that is, which shift responded, the number of alarms, the incident commander, and so forth.

5.1.3 The data elements contained in this chapter may be used for both pre-incident and post-incident data collection efforts.

5.2 Limitations. The data elements used for the identification of the property location and type are included in Chapter 6.

5.3 Incident Number. The incident number is a unique (normally sequential) number assigned to an incident so that no two incidents that are the responsibility of a fire department in a given year have the same incident number. The incident number is used to link together all reports and materials concerning the incident.

5.4 Exposure Number. When multiple reports are filed for a single incident, a method of numbering those reports should be used so the information for each property can be associated with the base report and summarized as necessary. Care should be taken with any automated processing of data from multiple report incidents, so that multiple reports are not treated as multiple incidents. A convenient means should be available to summarize data as necessary from the multiple reports (e.g., summary of casualties and dollar loss).

5.5 Shift. Shift is the designation of the shift that was on duty or on call when the incident was reported and that responded to the incident. If the incident was of such duration that a shift change occurred during the incident, the time the change occurred and the new shift designation can also be valuable information.

5.6 Number of Alarms. The number of alarms transmitted is an indicator of the severity of an incident and serves as a quick indicator of the scope of the incident. It should represent the total number of alarms sounded for this incident. Staffing patterns and requirements can also be assessed through analysis of this element. This information is most useful to a local department, so local alarm definitions should be used. Where multiple alarms are sounded, the time and date of each subsequent alarm would also be important information.

5.7 Incident Events.

5.7.1 Many events that occur during an incident are critical to understanding fire growth and the actions to manage the incident. Because there are so many different events, those events selected for data collection should include both the date and time and a clear label to identify the event. By recording the actual date and time, the time elapsed between events can be calculated, including those that span two or more days. This method helps avoid the confusion that can arise where direct entry of elapsed minutes or hours is recorded. Errors associated with direct entry of elapsed time often arise from an unclear point of reference. For example, the elapsed time of an incident could be calculated from the time of ignition, alarm, dispatch, or arrival on the scene, depending upon the way the information will be used. By recording actual dates and times of discrete events, this ambiguity can be avoided.

5.7.2 Event chronologies generally move from one event to another at different rates. Some incidents are over quickly after discovery, while other incidents may last many days, weeks, or even years. Each event is a snapshot in time. A typical fire sequence flows from its ignition and detection; through alarm, dispatch, and response; to agent application, containment, control, and blackout; and finally to incident closure. Other incidents typically flow from their start and discovery; through alarm, dispatch, and response; to initial action, control, and incident closure. These chronologies should apply equally well to a small structure fire, a medical emergency, a wildland fire, or a hazmat incident.

5.7.3 Dates should be recorded using the numeric designation for month, day, and year, reserving two digits for each (e.g., November 21, 1999 would be recorded as 11/21/99). Recommended practice for automated systems is to store four digits for the year.

5.7.4 The time of day should be recorded using 24-hour military time, which includes hours and minutes without punctuation. Midnight is recorded as 0000, 7:00 a.m. as 0700, 1:00 p.m. as 1300, and one minute before midnight as 2359. If times are recorded to seconds, add two digits for the seconds after the minutes.

5.7.5 Event Times.

5.7.5.1 Event Start Time. Event start time is the time of ignition or the start of the event in the incident chronology. It is often difficult to determine the exact time because of prolonged periods of smoldering or a lack of witnesses to the event. However, an effort should be made to estimate the time as closely as possible.

5.7.5.1.1 If the event is a fire, ignition occurs the moment heat or overheat reaches the point of self-perpetuated combustion in the combustible ignited whether or not there is open flame. The time of ignition should be recorded using actual clock time. The time the fire burned before it was detected is important in understanding the growth of the fire and the effectiveness of detection devices, if present. The public fire service cannot initiate action to suppress the fire until it has been detected and reported. The longer the fire burns before detection, the greater the damage before intervention for suppression.

5.7.5.1.2 If the event is not a fire, the event is the initial step in the chronology. For example, start time could be when two automobiles collide, a hazardous material release occurs, or a trench collapses on a worker.

5.7.5.2 Discovery or Detection Time. Detection time is the moment at which a person senses the danger or incident or the moment at which an automatic detector closes its contacts. Detection time can occur well after ignition. Discovery time is sometimes the first reliable time in the incident chronology.

5.7.5.3 Report (Alarm) Time. Report (alarm) time is the time at which the dispatch or alarm center responsible for dispatching the fire department resources first learns of the fire or other incident. The alarm can be transmitted to the alarm center in person, by telephone, radio, or a direct-wired signal, or by other means. Report time is often the first reliable time in the incident chronology.

5.7.5.4 Dispatch Time. Dispatch time is the time at which a fire service resource is notified to respond to an alarm.

5.7.5.5 En Route Time. En route time is the time at which resource or apparatus with the crew aboard starts its response to the incident.

5.7.5.6 Arrival Time.

5.7.5.6.1 Arrival time is the time at which the unit arrives at the scene of an incident. The time of arrival is useful in analysis of department response times, which can be used to assist in determining placement of fire stations or establishing response policies. The time of arrival can often be obtained from the alarm center.

5.7.5.6.2 Some fire services choose to track the dispatch time, arrival time, and in-service time (ready to handle another alarm) for each piece of fire apparatus dispatched to the incident. This allows a detailed analysis of response times and apparatus utilization.

5.7.5.7 First Action Time. First action time is the time at which control or mitigation activities begin. Many activities can occur after arrival on scene, including search, rescue, set-up, fire location, or building of wildland fire lines.

5.7.5.8 Agent Application Time. Agent application time is the moment at which the extinguishing agent first contacts the flames.

5.7.5.9 Containment Time. Containment time is the time at which control lines or natural barriers surround a fire or the fire spread is checked. There can be significant hot spots within the perimeter yet to be extinguished.

5.7.5.10 Control Time. Control time is the time at which the fire is sufficiently surrounded and quenched that, in the judgment of the commanding officer, it no longer threatens further spread or destruction of additional property. Control time is also referred to as "knock down" time.

5.7.5.11 Blackout Time. Blackout time is the time at which there is no open flame or glow of burned material. Blackout time is also referred to as "fire out" time.

5.7.5.12 Scene Release Time. Scene release time is 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. This data element can also be used to calculate total amount of time that fire companies are left at the scene on fire watch after control of the property has been turned back to the owner.

5.7.5.13 Resource In-Service Time. Resource in-service time is the time at which a specific resource is again ready to respond to an alarm.

5.8 Day of Week. The day of the week is useful for tracking incident patterns. Day of week can be calculated from the event date. However, the codes in Table 5.8 should be used if day of week is recorded as a separate data element.

Table 5.8 Day of Week

Code	Description
1	Sunday
2	Monday
3	Tuesday
4	Wednesday
5	Thursday
6	Friday
7	Saturday

5.9 Incident Location. The incident location is useful to help understand the geographic relationships between where incidents occur, fire service bases, and important locations within the community or area. Analysis of past incident locations by incident type can provide valuable information to fire service planners, prevention personnel, inspectors, and operations.

5.9.1 Property Address.

5.9.1.1 Street Address. The address of the property establishes its legal location in the community and is generally the basis of identification of the property. The address provides the capability to identify other data concerning the property that can be helpful in understanding the property. Where the property has been subdivided and has multiple tenants or areas, it is often important to identify a suite, room, apartment number, or specific building as part of the address.

5.9.1.2 City, State, and Postal (ZIP) Code. Where the data collected will be used outside the local area, or the area served covers multiple communities, it is important to record the city, state, and ZIP code of the property. *(See 4.1.1 for state abbreviations.)* The ZIP code should be recorded for all incidents to allow linking incident data with demographic data available by ZIP code.

5.9.2 Geographical Coordinates. Street address, city, state, and ZIP code are useful for analysis in a local area, but the location data does not easily allow spatial analysis (distances between incidents). Latitude and longitude coordinates work anywhere in the world if the hemisphere is defined. Fire service agencies that collect data in this form should carefully consider accuracy needs. One degree at 45 degrees north latitude (e.g., the latitude of the Wyoming/Montana border, Minneapolis, or the Vermont/Canadian border) is approximately 60 statute miles, 1 minute is approximately 1 statute mile, and 1 second is approximately 88 ft (27 m). Some wildland and rural fire service agencies collect latitude and longitude to ⅒ minute (6 seconds), which is approximately 528 ft (161 m).

5.9.2.1 Latitude. Latitude lines run east/west 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. Minutes and seconds range from 0 to 59.

5.9.2.2 Longitude. Longitude lines run north/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 range from 0 to 59.

5.9.3 Public Land Survey System. The Public Land Survey System (PLSS) was established in the United States by the Land Ordinance of 1785. The surveys cover 30 states; the original 13 colonies, Kentucky, Tennessee, Maine, Vermont, West Virginia, Texas, and Hawaii use other survey systems.

5.9.3.1 Township. Townships are numbered north and south of the principal baseline. Suggested coding is to use a five-character field. The first three digits are the township number, and the fourth digit indicates a full or partial township (0 = full, 1 = ¼, 2 = ½, and 3 = ¾). The fifth character (N or S) indicates direction from the baseline.

5.9.3.2 Range. Ranges are numbered east and west of the principal meridian. Suggested coding is to use a five-character field. The first three digits are the range number, and the fourth digit indicates a full or partial range (0 = full, 1 = ¼, 2 = ½, and 3 = ¾). The fifth character (E or W) indicates direction from the principal meridian.

5.9.3.3 Section. Sections are numbered 1 through 36, beginning in the northeast corner for all but the very earliest principal meridians. Sections 1 through 6 are the northernmost tier and are numbered east to west. Sections 7 through 12 are the next tier south of the first tier and are numbered west to east. The remaining sections follow the same pattern. Each section is nominally 640 acres, although some sections vary from the standard.

5.9.3.4 Subsection. Sections can be subdivided into successive quarters and described as the NE quarter, NW quarter, SE quarter, and SW quarter (each approximately 160 acres). Each quarter can be quartered again, to describe 40-acre parcels. For example, the SE/4 of the NW/4 would be the 40-acre parcel NW of the section center (read small parcel to large parcel).

5.9.3.5 Principal Meridian.

5.9.3.5.1 There are 45 principal meridians defined in the United States. The codes in Table 5.9.3.5.1 can be used to identify the principal meridian.

5.9.3.5.2 Table 5.9.3.5.1 defines the code, meridian name, its abbreviation, and the states included for each of the principal meridians in the United States. The PLSS was established by the Land Ordinance of 1785. The survey covers 30 states. These codes were defined by the Bureau of Land Management, U.S. Department of the Interior.

Table 5.9.3.5.1 Principal Meridians of the United States

Code	Meridian Name	Abbr.	States
01	First Principal	1	IN, OH
02	Second Principal	2	IL, IN
03	Third Principal	3	IL
04	Fourth Principal	4	IL, MN, WI
05	Fifth Principal	5	AR, MN, MO, ND, SD
06	Sixth Principal	6	CO, KS, NE, SD, WY
07	Black Hills	BH	SD
08	Boise	BO	ID
09	Chickasaw	CHI	MS
10	Choctaw	CHO	MS
11	Cimarron	CIM	OK
12	Copper River	CR	AK
13	Fairbanks	FB	AK
14	Gila and Salt River	GSR	AZ
15	Humboldt	HUM	CA
16	Huntsville	HUN	AL
17	Indian	IN	OK
18	Louisiana	LOU	LA
19	Michigan	MI	MI, OH
20	Principal	MT	MT
21	Mt. Diablo	MD	CA, NV
22	Navajo	NAV	AZ
23	New Mexico	NM	CO, NM
24	St. Helena	SH	LA
25	St. Stephens	SS	AL, MS
26	Salt Lake	SL	UT
27	San Bernardino	SB	CA
28	Seward	SEW	AK
29	Tallahassee	TAL	AL
30	Uintah	UIN	UT
31	Ute	UTE	CO
32	Washington	WA	MS
33	Willamette	WIL	OR, WA
34	Wind River	WR	WY
35	Ohio	OHI	OH
36	Great Miami River	GMR	OH
37	Muskingum River	MUS	OH
38	Ohio River	OR	OH
39	First Scioto River	SC1	OH
40	Second Scioto River	SC2	OH
41	Third Scioto River	SC3	OH
42	Ellicotts Line	ELL	OH
43	12 Mile Square	12M	OH
44	Kateel River	KR	AK
45	Umiat	UMI	AK

5.9.4 Census Tract. The census tract number is a six-digit number assigned by the Bureau of the Census, U.S. Department of Commerce, that identifies an area of land within the United States about which there is census data available. Maps that outline the boundaries of census tracts are available from the Bureau of the Census. If the data is part of a regional database, the census county code should also be reported. The census county code or the FIPS county code are the same and can be obtained from the same source as census tract information.

5.9.5 Local Identification. There are a number of property identification data elements that can be useful at the local level either for identifying the location of the property or specific buildings on the property or for assigning responsibilities for the property with the fire department.

5.9.5.1 District.

5.9.5.1.1 A district is the designation of the fire department company response area, administrative district, or inspection district in which the response occurred. The district data element is useful for breaking down incidents into subdivisions of a fire department's geographical area. These subdivisions should be designated to allow tying fire experience to code enforcement. If no districts are designated by the fire department, appropriate police districts or other existing subdivisions may be used.

5.9.5.1.2 If districts are recorded and responses are made to areas outside the fire department's area of responsibility or jurisdiction, a special district designator should be used to indicate the jurisdiction where the incident occurred.

5.9.5.2 Demand Zone. Demand zones or community analysis areas (CAA) are geographically homogeneous areas within which a particular type of demand is placed on the fire service. Demand zones are derived from the master planning methodology.

5.9.5.3 Parcel Number. Many communities maintain parcel numbers for each piece of property within the community. This number may be established by the assessor's office or the planning department. Use of this number allows this record to be linked with other files of data in the community concerning the property.

5.9.5.4 Property Number. Each property should be assigned a unique number that will not change even though the occupancy or nature of the property changes over a period of time. These numbers can be assigned on a geographical basis or can be randomly assigned, but care should be taken to ensure that no two properties have the same property number. A property number can be used to tie together information from different sources or databases.

5.9.5.5 Structure Number. If there is more than one structure on the property, each structure should be uniquely identified by a different structure number. However, the property number should remain the same for all structures on the same property.

5.10 Business, Tenant, or Occupant. The name of the business, tenant, or occupant of the space within the property should always be recorded. This allows identification of the parties responsible for the space and information concerning activity in the space, whether during code enforcement activity or in investigating an incident. If the principal address of the business or tenant is not the property address, the address where the business or tenant can normally be contacted should be recorded. Likewise, a telephone number for the business or tenant should be recorded.

5.11 Property Owner. The identification of the owner of the property is important in identifying who has the legal responsibility for the property. Whether during code enforcement activity or in investigating an incident, it is important to identify the owner and to record the owner's address and telephone number so he or she can be contacted in an emergency.

5.12 Fire Service Personnel.

5.12.1 Officer in Charge. The name of the officer on scene and in charge of the incident is useful to establish who had

responsibility for the fire department's activities at the incident. It also identifies the individual who could have additional information about the incident if further investigation is conducted.

5.12.2 Member Making Report. The name of the fire department member who completed the incident report is useful in determining who collected the data and made the decisions on what information to record. If future investigation of the incident is needed, the person making the report may have additional information about the incident.

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 3.3.50.
(2) Mobile Property Type. See 3.3.70.
(3) Specific Property Use. See 3.3.94.

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 should be shown for that use whether the storage is inside or outside.

6.3 Discussion and Examples.

6.3.1 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.

6.3.2 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.

6.3.3 The relationship between general property use and specific property use for a few typical situations where no mobile property is involved is shown in 6.3.3.1 through 6.3.3.6.

6.3.3.1 A clothing store in a 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).

6.3.3.2 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).

6.3.3.3 A railroad bridge would have a general property use of railroad (coded as 95) and a specific property use of bridge (coded as 921).

6.3.3.4 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).

6.3.3.5 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).

6.3.3.6 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).

6.3.4 Extending three of these examples to include mobile property type, the relationship between general property use, specific property use, and mobile property would be as shown in 6.3.4.1 through 6.3.4.3.

6.3.4.1 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).

6.3.4.2 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).

6.3.4.3 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).

6.4 Building Code Occupancy Class. If there is a building code in the community, it classifies the occupancy of a building or a portion of a building and relates certain requirements to that occupancy. Knowing how the occupancy of the building was classified by the building code helps in understanding the presence or absence of certain fire protection requirements.

6.5 General Property Use.

6.5.1 The "general property" use designation captures data on the overall use of property so that all specific uses of segments of that property can be linked to its general use. If a portion of the general property is leased, managed, and maintained as a separate property, it should be treated as a separate general property use for reporting purposes. For example, a hotel at an airport leased to and managed by a hotel chain would be reported as hotel use, while a hotel on a university campus and managed by the university would be reported as educational use.

6.5.2 When a location has two or more completely different general uses, and there is no classification to describe the combination, then the general property use should be classified according to the predominant use at the point of origin of the incident.

6.5.3* Where data on general property use is to be coded, the coding structure in Table 6.5.3 should be used.

Table 6.5.3 General Property Use Coding Structure

Code	Description
1	Assembly Use.
11	Public recreation use. Included are zoos, government parks, general recreational parks, and improved campsites.
12	Stadium, exhibition use. Included are ball parks, racetracks, sports stadiums, and exhibit halls.
13	Religious use. Included are properties used for funerals and cemeteries.
14	Clubs. Included are golf clubs, tennis clubs, country clubs, men's and women's clubs, and casinos.
15	Judicial, legislative, archival, historic use. Included are properties used for courts, libraries, and museums.
16	Restaurant, food service, drinking establishment.
18	Theater, studio use. Included are drive-in theaters.
10	Assembly use not able to be classified further.
2	Educational Use.
21	Primary- and secondary-level educational use. Included are facilities for education through high school level.
22	Post-secondary-level educational use. Included are colleges and universities and all facilities used for post-high school-level education.
20	Educational use not able to be classified further.
3	Institutional Use.
31	Nursing care use. Included are nursing and convalescent homes, skilled nursing facilities, intermediate care facilities, and those facilities where persons, because of mental or physical incapacity, might be unable to provide for their own needs and where nursing staff is provided on a 24-hour basis. Medical treatment is minor.
32	Limited health care use. Included are alcohol and substance abuse centers, mental retardation facilities, and those facilities housing individuals who are incapable of self-preservation because of age or physical limitations due to accident, illness, or mental limitations such as mental retardation/developmental disability, mental illness, or chemical dependency.
33	Medical care use. Included are hospitals, medical centers, hospices, psychiatric institutions, and health care facilities where staffing and medical treatment are provided on a 24-hour basis.
34	Ambulatory health care use. Included are ambulatory health care centers and facilities without sleeping accommodations that provide less than 24-hour service and outpatient treatment for patients that could render them incapable of self-preservation.
36	Detention and correctional use.
30	Institutional use not able to be classified further.
4	Residential Use.
41	One- or two-family residential use.
42	Multi-family residential use. Included are apartments and condominium properties.
43	Group living use. Included are properties associated with rooming, boarding, and lodging houses and dormitories or barracks not a part of another general property use.
44	Transient living use. Included are properties associated with hotels, motels, inns, and the like.
45	Residential board and care use. Included are facilities that provide personal care to ensure the safety of the occupants who are capable of limited self-preservation but who, because of age or physical limitations, require a minimal level of personal care. Excluded are facilities that provide care to those who require chronic or convalescent care (31, 32, or 33).
47	Mobile home park use.
48	Residential with business use. Included are those combination-use properties where the predominant use is residential. Excluded are properties where the predominant use is mercantile or business (58).
40	Residential use not able to be classified further.
5	Mercantile, Business, or Office Use.
51	Store or row of stores. Included are properties where the predominant use is for the sale of products and where the individual stores open directly to the outside. Excluded are enclosed shopping malls (53) and combination sales/residential uses (48 or 58).
52	Service use. Included are properties where the predominant use is for the service, maintenance, or cleaning of products. Excluded are sales areas with minor service or repair use (51).

(continues)

Table 6.5.3 *Continued*

Code	Description
53	Enclosed malls. Included are properties where the predominant use is for the sale of products and where the individual stores generally open into an interior covered mall. Excluded are individual stores, strip malls, or rows of stores (51) and combination sales/residential uses (48 or 58).
58	Business with residential use. Included are those combination-use properties where the predominant use is mercantile or business. Excluded are properties where the predominant use is residential (48).
59	Business or office use. Included is nonmilitary government office use. Excluded is military office use (63).
50	Mercantile, business, or office use not able to be classified further.
6	Basic Industry, Utility, Defense, or Agricultural Use.
61	Power, energy production or distribution.
62	Research use. Included is laboratory use.
63	Military, defense use.
64	Communication use. Included are data processing centers.
65	Farm, agricultural use. Included are cropland, orchards, and livestock production.
66	Indian reservation.
67	Mining, quarrying.
68	Timberland and tree farms.
60	Basic industry, utility, defense, or agricultural use not able to be classified further.
7	Manufacturing Use.
71	Food industry.
72	Beverage, tobacco, essential oil industry.
73	Textile industry.
74	Footwear, wearing apparel, leather, rubber industry.
75	Wood, furniture, paper, printing industry.
76	Chemical, plastic, petroleum industry.
77	Metal, metal products industry.
78	Vehicle assembly, manufacture.
70	Manufacturing use not able to be classified further.
8	Storage Use.
81	Agricultural products storage.
82	Textile storage.
83	Processed food, tobacco storage.
84	Petroleum products, alcoholic beverage storage.
85	Wood, paper products storage.
86	Chemical or plastic product storage.
87	Metal product storage.
88	Vehicle storage.
80	Storage use not able to be classified further.

Table 6.5.3 *Continued*

Code	Description
9	Special Property Use.
91	Refuse disposal. Included are all properties associated with the collection, storage, and disposal of discarded material.
92	Property undergoing transformation. Included are construction sites and demolition sites.
93	Wildland. Included are local, state, and national ranges and forest land where harvesting of timber or mining is not normally done and wild areas of parks.
94	Water, waterfront area use. Included are passenger terminals and facilities catering to boating and shipping. Excluded is ship manufacturing (70).
95	Railroad transportation use. Included are passenger terminals. Excluded are railroad areas on other general properties.
96	Motor vehicle transportation use. Included are passenger terminals, highways, roads, and streets. Excluded are vehicle areas on other general properties.
97	Air transportation use. Included are passenger terminals.
98	Property with no apparent current use.
90	Special property use not able to be classified further.
UU	General property use undetermined or not reported.

6.6 Specific Property Use.

6.6.1 The specific property use 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

6.6.2 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. For example, 419 (single-family dwelling) should be used for a mobile home on a foundation.

6.6.3 The specific property use classifications that follow are divided into nine major divisions. These divisions are further divided into subdivisions that are then further divided into detailed specific property use classifications. This hierarchical structure allows for different levels of detail (one, two, or three digits) in reporting, depending on the information available to the reporter.

6.6.4 The major divisions (single digit) of the specific property use coding are shown in Table 6.6.4.

6.6.5* Where data on specific property use is to be coded, the coding structure in Table 6.6.5 should be used.

Table 6.6.4 Major Divisions for Specific Property Use

1	Assembly Property
2	Educational Property
3	Health Care Property and Detention and Correctional Property
4	Residential Property
5	Mercantile, Business Property
6	Basic Industry, Utility, Defense, Agriculture Property
7	Manufacturing Property
8	Storage Property
9	Special Property

Table 6.6.5 General Property Use

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.eb
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. Included are dance halls.
122	Exhibition hall, exposition hall.
123	Arena, stadium. Fixed seating in large areas. Included are ball parks, racetracks, grandstands, and sports gardens.
124	Playground.
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.
132	Religious education facility. Facilities for use in periodic religious education. Included are Sunday schools. Excluded are regular education buildings run by religious institutions, which are classified in major division 2.
133	Church hall. Hall for fellowship, meetings, and the like. Included are offices, kitchens, and classrooms contained within the structure. Excluded are religious meeting halls that are part of a structure used principally as a place of worship (131).
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.

(continues)

Table 6.6.5 *Continued*

Code	Description
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. Those places specializing in quick service for food or beverages. Included are lunch counters, drive-ins, snack bars, and the like. Excluded are delicatessens (516).
160	Eating and drinking places not able to be classified further.
17	Passenger Terminals. 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).
212	Kindergarten. Included are schools for children in the grade before grade 1.
213	Elementary school.
214	Junior high school. Included are intermediate and middle schools.
215	High school.
210	Nonresidential schools not able to be classified further.
22	Residential Schools. All public, private, or parochial boarding schools, including such day-student facilities as might be present.

Table 6.6.5 *Continued*

Code	Description
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.
241	College classroom building. Buildings containing classrooms used for higher education whether a college, university, junior college, community college, or any other institution of higher learning. Included are such incidental laboratories, libraries, and offices as are present. If one building houses the entire college, it should be classified as a college classroom building. Other buildings in a college should be classified under the appropriate specific property use, such as dormitory, office, and the like.
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.
251	*(This subdivision not used in this edition.)*
252	*(This subdivision not used in this edition.)*
253	*(This subdivision not used in this edition.)*
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.

Table 6.6.5 *Continued*

Code	Description
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.
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.

(continues)

Table 6.6.5 *Continued*

Code	Description
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.
390	Detention and correctional facility not able to be classified further.
4	Residential Property. 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). 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. 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.

Table 6.6.5 *Continued*

Code	Description
41	One- and Two-Family Dwelling. One- and two-family dwellings typically have separate living units and a kitchen in each unit. 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. 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. 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. 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. Attached parking garages are included here unless separated from the dwelling by a fire division assembly. Detached parking garages are classified in subdivision 881.
419	One- or two-family dwelling.
42	Multifamily Dwelling. 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. 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*).
429	Multifamily dwellings.
43	Rooming, Boarding, or Lodging House. 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.

Table 6.6.5 *Continued*

Code	Description
	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. 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.
439	Rooming, boarding, or lodging house. Included are residential hotels and shelters housing up to 16 persons.
44	Hotels, Motels, Inns, Lodges. 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. Excluded are facilities for 16 or fewer persons (division 43).
449	Hotel, motel, inn, or lodge.
45	Residential Board and Care. 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).
459	Residential board and care.
46	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^2 (930 m^2) 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^2 (930 m^2) in total area.
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.

(continues)

Table 6.6.5 *Continued*

Code	Description
	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. 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.

Table 6.6.5 *Continued*

Code	Description
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-fis, 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. 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).

Table 6.6.5 *Continued*

Code	Description
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 incidental sales 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, dry cleaner 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.
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 lubritorium and wash facilities. Included are service station islands. Excluded are marine service facilities (577).

Table 6.6.5 *Continued*

Code	Description
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^2 (930 m^2) 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^2 (930 m^2) 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. Included are only the areas common to a multistore facility.
580	General item stores not able to be classified further.

(continues)

Table 6.6.5 *Continued*

Code	Description
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.
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.

Table 6.6.5 *Continued*

Code	Description
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.
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.
641	*(This subdivision not used in this edition.)*
642	Electric transmission, distribution system. Distribution of electricity outside generating plant premises. Included are substations, transformers, and utility poles.
643	*(This subdivision not used in this edition.)*
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. 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).
652	*(This subdivision not used in this edition.)*
653	*(This subdivision not used in this edition.)*
654	*(This subdivision not used in this edition.)*
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).
650	Agriculture not able to be classified further.
66	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).

(continues)

Table 6.6.5 *Continued*

Code	Description
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.
664	*(This subdivision not used in this edition.)*
665	Fish hatchery.
666	Wood-chip pile.
660	Forests, hunting, fishing not able to be classified further.
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. 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.

Table 6.6.5 *Continued*

Code	Description
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.
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).

Table 6.6.5 *Continued*

Code	Description
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. Included are coffee, pulse, and root peeling mills; and starch and its products.
716	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).
710	Food industries not able to be classified further.

Table 6.6.5 *Continued*

Code	Description
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. 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).

(continues)

Table 6.6.5 *Continued*

Code	Description
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. 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.
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.

Table 6.6.5 *Continued*

Code	Description
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; looseleaf 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).
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.

Table 6.6.5 *Continued*

Code	Description
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 6.6.5 *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).
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.

Table 6.6.5 *Continued*

Code	Description
	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. 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.
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.

(continues)

Table 6.6.5 *Continued*

Code	Description
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, hogsheads, 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.
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. 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).

Table 6.6.5 *Continued*

Code	Description
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.
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. 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.

(continues)

Table 6.6.5 *Continued*

Code	Description
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.
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).
932	*(This subdivision not used in this edition.)*
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).
944	At flammable liquid or gas loading, unloading facility.
945	Storm drain, flood control culvert.

Table 6.6.5 *Continued*

Code	Description
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).

Table 6.6.5 *Continued*

Code	Description
	Buildings or structures under construction or demolition should be classified by their proposed or former use.
982	Oil, gas field.
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.

6.7 Mobile Property.

6.7.1 Mobile property is property that is designed to be movable in relation to fixed property whether or not it still is. Mobile property is always located on a specific property, and, when mobile property is involved, the specific property should always be reported as well.

6.7.2 When mobile property is involved, the reporting of the following data is critical for proper identification of the property:

(1) Model year
(2) Name of manufacturer or brand name
(3) Model name or model number if there is one
(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

6.7.3 Mobile Property Involvement.

6.7.3.1 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 will assist analysts in determining the role the mobile property played, so that problems can be identified and appropriate actions taken.

6.7.3.2 Where data on mobile property involvement is to be coded, the coding structure in Table 6.7.3.2 should be used.

Table 6.7.3.2 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.

6.7.4 Mobile Property Type.

6.7.4.1 This data element is used to record the specific type of mobile property involved, whether the property is still mobile or not.

6.7.4.2* Where data on mobile property type is to be coded, the coding structure in Table 6.7.4.2 should be used.

Table 6.7.4.2 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. For manufactured homes when set up and used as a dwelling (*see 7.4.2.2*).
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.
22	*(This subdivision not used in this edition.)*
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 (*see 7.4.2.2*).
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).

Table 6.7.4.2 *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. *(See 6.6.5, subdivision 665.)*
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, 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.
62	*(This subdivision not used in this edition.)*
63	Materials-handling equipment. Included are forklifts, industrial tow motors, loaders, and stackers.
64	Crane.
65	Tractor, harvester, picker.
66	*(This subdivision not used in this edition.)*
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.
72	*(This subdivision not used in this edition.)*
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 (*see 6.6.5, subdivision 631*).
76	Aerial tramway vehicle.
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.

6.7.5 Vehicle Make. Where data on the make of a vehicle is to be coded, the coding structure in Table 6.7.5 should be used. The vehicle make data element does not apply to aircraft or watercraft.

Table 6.7.5 Vehicle Make Coding Structure

Code	Description
AC	Acura
AM	Aston Martin
AR	Alfa Romeo
AT	ATK
AU	Audi
AV	Antique Vehicle
BE	Beta
BL	Buell
BM	BMW
BU	Buick
CC	Crane Carrier (CCC)
CD	Cadillac
CH	Chevrolet
CP	Caterpillar
CR	Chrysler
CV	Classic Vehicle
DA	Daihatsu
DO	Dodge
DR	Diamond Reo
DU	Ducati
EA	Eagle
FE	Ferrari
FO	Ford
FR	Freightliner
FW	FWD
GE	Geo
GM	GMC (General Motors)
HD	Harley Davidson
HI	Hino
HO	Honda
HU	Husqvarna

(continues)

Table 6.7.5 *Continued*

Code	Description
HY	Hyundai
IF	Infiniti
IN	International
IS	Isuzu
IT	Italjet
IV	Iveco
JA	Jaguar
JE	Jeep
KA	Kawasaki
KE	Kenworth
KI	Kia
KT	KTM
LE	Lexus
LI	Lincoln
LO	Lotus
LR	Land Rover
MA	Maico
MB	Mercedes Benz
MC	Mercury
MG	Moto Guzzi
MH	Marmon
MK	Mack
ML	Maely
MM	Moto Morini
MO	Montesa
MR	Merkur
MS	Maserati
MT	Mitsubishi
MZ	Mazda
NA	Navistar
NI	Nissan
OL	Oldsmobile
OS	Oshkosh
PI	Pierce
PL	Plymouth
PN	Pontiac
PR	Porsche
PT	Peterbilt
PU	Peugeot
RG	Rogue (Ottowa)
RN	Range Rover
RR	Rolls Royce
SA	Saturn
SB	Saab
SC	Scania
SD	Simon Duplex
ST	Sterling
SU	Subaru
SZ	Suzuki
TO	Toyota
TR	Triumph
UD	UD
UT	Utilmaster
VE	Vespa
VG	Volvo GMC
VL	Volvo
VO	Volkswagen
WG	White GMC
WK	Walker
WL	Walter

Table 6.7.5 *Continued*

Code	Description
WS	Western Star
YA	Yamaha
YU	Yugo
00	Other make of vehicle
UU	Make of vehicle undetermined or not reported

6.8 Property Management.

6.8.1 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.

6.8.2 Where data on property management is to be coded, the coding structure in Table 6.8.2 should be used.

Table 6.8.2 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.

6.9 On-Site Material.

6.9.1 The identification of the type of material on-site 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 materials and products present can assist in targeting fire prevention and suppression programs, as well as in identifying fire fighter training and equipment needs.

6.9.2 Each type of material identified in Table 6.9.3 should have its use or application recorded using the classifications in Table 6.9.4.

6.9.3 On-Site Material Type. Where data on on-site materials is to be coded, the coding structure in Table 6.9.3 should be used.

Table 6.9.3 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.
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, noncooking-related.
516	Asphalt.
517	Adhesive, resin, tar.

(continues)

Table 6.9.3 *Continued*

Code	Description
	510 Flammable or combustible liquids not able to be classified further.
	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.
	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.

Table 6.9.3 *Continued*

Code	Description
832	Helicopters.
830	Aircraft not able to be classified further.
84	Rail.
841	Trains, light rail, rapid transit cars.
842	Rail equipment.
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 merchandise.
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.
NNN	No on-site materials.
UUU	On-site material undetermined or not reported.

6.9.4 On-Site Materials Storage or Use. Where data on on-site materials storage or use is to be coded, the coding structure in Table 6.9.4 should be used.

Table 6.9.4 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 should 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 The data element for type of construction is used to measure the type of construction of the structure. The construction types are taken from NFPA 220, *Standard on Types of Building Construction.* Fire-resistive ratings are determined by NFPA 251, *Standard Methods of Tests of Fire Resistance of Building*

Construction and Materials. 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.

7.4.1.2 Categories from the following five model codes are also given to maintain uniformity in data classification: the *NFPA 5000, Building Construction and Safety Code*; ICC *International Building Code* (IBC); BOCA® *National Building Code* (NBC), formerly the *Basic Building Code*; *Standard Building Code* (SBC), formerly the *Southern Building Code*; and *Uniform Building Code* (UBC).

7.4.1.3 Where type of construction is to be coded, the coding structure in Table 7.4.1.3 should be used.

Table 7.4.1.3 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.") Included are NFPA, Type I(442) and Type I(332); IBC, Type IA; NBC, Type 1A and Type 1B; SBC, Type I and Type III; and UBC, Type I.
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.") Included are NFPA, Type II(222), Type II(111), and Type II(000); IBC, Type IB, Type IIA, and Type IIB; NBC, Type 2A, Type 2B, and Type 2C; SBC, Type IV; and UBC, Type II.
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.") Included are NFPA, Type III(211) and Type III(200); IBC, Type IIIA and Type IIIB; NBC, Type 3A and Type 3B; SBC, Type V; and UBC, Type III.
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, *Standard on Types of Building Construction*. Included are NFPA, Type IV (2HH); IBC, Type IV; NBC, Type 4; SBC, Type III; and UBC, Type IV.
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.") Included are NFPA, Type V(111) and Type V(000); IBC, Type VA and Type VB; NBC, Type 4A and Type 4B; SBC, Type VI; and UBC, Type V.
0	Type of construction not able to be classified further.
U	Type of construction undetermined or not reported.

7.4.2 Method of Construction.

7.4.2.1 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.

7.4.2.2 Where method of construction is to be coded, the coding structure in Table 7.4.2.2 should be used.

Table 7.4.2.2 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.

7.4.3 Year of Construction or Total Renovation. 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. Manufactured homes built in the United States after this date are built to the federal standards, which continue to be revised. The date should represent the date the structure was constructed or was totally renovated and brought up to complete compliance with a more recent building code. It should also be noted that the latest building permit on file for the structure may reflect the date of minor renovation or appliance installation, not the actual date of initial construction or major renovation.

7.4.4 Structure Height or Depth. It is important for emergency service agencies to know the structure height and the distance below grade. This information helps with pre-fire planning, quickly illustrating how much of the building is unavailable to ladders. Some departments even use this information to help them assign "life safety hazard" values to buildings in their jurisdiction; the harder it is for people to leave or be rescued, the higher the life safety hazard value.

7.4.4.1 Structure height is the distance from grade to highest structural member or peak, not including flagpoles, antennas, and the like. It should be recorded in feet or meters, not stories. The units of measure must be consistent throughout the application.

7.4.4.2 Structure depth or distance below grade is 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. It does not include pits and small vaults or machinery areas where the equipment must be removed to be serviced. Structure depth should be recorded in feet or meters, not stories. The units of measure must be consistent throughout the application.

7.4.5 Number of Stories. The total number of stories in a structure is often important in determining the total volume of the structure and its potential fire loading. If the number of stories is recorded, it should be done consistently and should include all below-grade and above-grade stories. A mezzanine should be considered as an additional story if the building code defines the area as a mezzanine. Unused crawl spaces and unused ceiling/roof spaces should not be considered as additional stories.

7.4.6 Floor Area. 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. Floor area should be recorded in square feet or square meters. The units of measure must be consistent throughout the application.

7.4.7 Manufactured Home or Industrialized Unit Identification. When a manufactured home or an industrialized unit is involved, the reporting of the following nameplate data is critical for the proper identification of the property:

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

7.4.8 Structure Type.

7.4.8.1 The data element for structure type is used to describe the type of structure on a specific property. Structure type is useful in understanding fire behavior and the potential for loss of life and property.

7.4.8.2 Where structure type is to be coded, the coding structure in Table 7.4.8.2 should be used.

7.4.9 Property Value. Property value should include the estimated total value of any building or structure, machinery and equipment, and contents. It does not include the value of the land. If structure and content value are to be recorded separately, machinery and equipment should be included with the content value. Values should be recorded only to the whole-dollar level. 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.

Table 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.

7.4.10 Structure Status.

7.4.10.1 Structure status, when used in conjunction with specific property use (Chapter 6), can help to identify the likely effectiveness of fire protection that existed prior to or at the time of an incident.

7.4.10.2 Where structure status is to be coded, the coding structure in Table 7.4.10.2 should be used.

Table 7.4.10.2 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.

7.5 Allowable Occupancy.

7.5.1 Number of Occupants. The number of occupants is a measure of the legal number of people allowed to be inside the structure at the time of its maximum allowable occupancy. This classification can also be used to document the actual number of occupants whether or not above the legal maximum. For details, see NFPA *101, Life Safety Code*.

7.5.2 Age and Ability of Occupants.

7.5.2.1 The percentage of people normally in the building who will have difficulty in evacuating can be estimated. When the population of a building consists largely of senior citizens or other persons who are physically disabled or mentally impaired in a manner that will interfere with prompt exit, the difficulties of evacuation increase.

7.5.2.2 Where the age and ability of occupants are to be coded, the coding structure in Table 7.5.2.2 should be used.

Table 7.5.2.2 Age and Ability of Occupants Coding Structure

1	Less than 10 percent of the occupants are under age 5 or over age 62 or are physically disabled or mentally impaired.
2	Ten percent to 49 percent of the occupants are under age 5 or over age 62 or are physically disabled or mentally impaired.
3	Fifty percent to 100 percent of the occupants are under age 5 or over age 62 or are physically disabled or mentally impaired.
N	No occupants.
U	Age and ability of occupants undetermined or not reported.

7.6 Compartment Characteristics.

7.6.1 Protection of Stairways and Vertical Shafts.

7.6.1.1 The data element for protection of stairways and vertical shafts measures the fire protection provided to all openings in stairways and vertical shafts. Vertical shafts include mechanical shafts, elevator shafts, exhaust shafts, escalators, ramps, and the like. In order to qualify as a standard enclosure, all components must be appropriate for the opening, labeled for use for the protection intended, properly installed, and fully operational. All fire-rated doors must include labeled doors and frames that close and latch properly.

7.6.1.2 Where the protection of stairways or vertical shafts is to be coded, the coding structure in Table 7.6.1.2 should be used.

7.6.2 Interior Finish.

7.6.2.1 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. The location of the interior finish being evaluated must be reported for the data to have relevance.

7.6.2.2 Where the interior finish is to be coded, the coding structure in Table 7.6.2.2 should be used.

Table 7.6.1.2 Protection of Stairways or Vertical Shafts Coding Structure

1	Standard enclosure, with labeled doors and frames, standard installation of labeled dampers, all openings fire stopped.
2	Standard enclosure, with labeled doors and frames, standard installation of labeled dampers, some openings not fire stopped.
3	Enclosure present with unlabeled doors or dampers, all openings fire stopped.
4	Enclosure present with unlabeled doors or dampers, improperly installed doors or dampers, or some openings not fire stopped.
5	Enclosure present but doors do not close and latch, dampers are not operational, or other impairments compromise the enclosure.
6	Enclosure present, compliance with standard not determined.
7	Unenclosed openings between one or more floors.
0	Protection of stairways and vertical shafts not able to be classified further.
N	No shafts, escalators, ramps.
U	Protection of stairways and vertical shafts undetermined or not reported.

Table 7.6.2.2 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.

7.6.3 Interior Finish Substrate or Solid Supporting Material.

7.6.3.1 The data element for interior finish substrate or solid supporting material is to be used with the data element for finish on substrate or solid supporting material (*see 7.6.4*) in identifying interior finish substrate and the finishes used on them. If more than one material is present, the principal material used should be identified.

7.6.3.2 Where the interior finish substrate or solid supporting material is to be coded, the coding structure in Table 7.6.3.2 should be used.

Table 7.6.3.2 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.

7.6.4 Finish on Substrate or Solid Supporting Material.

7.6.4.1 The data element for finish on substrate or solid supporting material is to be used with the data element for interior finish substrate or solid supporting material (*see 7.6.3*) in identifying interior finish substrate and the finishes used on them. If more than one material is present, the principal material should be identified.

7.6.4.2 Where the finish on substrate or solid supporting material is to be coded, the coding structure in Table 7.6.4.2 should be used.

Table 7.6.4.2 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.

7.7 Compartment Quality.

7.7.1 Protection of Floor Openings.

7.7.1.1 The data element for protection of floor openings is used to measure the fire protection provided for floor openings. Floor openings include the floor-to-curtain-wall connection; pipe, conduit, and cable poke-through; and other openings.

7.7.1.2 Where the protection of floor openings is to be coded, the coding structure in Table 7.7.1.2 should be used.

Table 7.7.1.2 Protection of Floor Openings Coding Structure

1	All openings fully fire stopped or protected.
2	Some openings only partially fire stopped or protected.
3	Some openings not fire stopped or protected.
4	All openings not fire stopped or protected.
0	Protection of floor openings not able to be classified further.
N	No floor openings.
U	Protection of floor openings undetermined or not reported.

7.7.2 Protection of Openings in Horizontal Barriers.

7.7.2.1 The data element for protection of openings in horizontal barriers is used to measure the fire protection provided in horizontal fire barrier openings. Horizontal openings in stairways and shaft walls should be reported using the data element "protection of stairways and vertical shafts" (*see 7.6.1*). 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.

7.7.2.2 Where the protection of openings in horizontal barriers is to be coded, the coding structure designations in Table 7.7.2.2 should be used.

Table 7.7.2.2 Protection of Openings in Horizontal Barriers Coding Structure

1	All openings in fire division walls fully protected.
2	Openings in fire division walls not fully protected.
3	No protection to openings in fire division walls.
4	All openings in fire-rated walls fully protected.
5	Openings in fire-rated walls not fully protected.
6	No protection to openings in fire-rated walls.
8	No horizontal protection required.
0	Protection of openings in horizontal barriers not able to be classified further.
U	Protection of openings in horizontal barriers undetermined or not reported.

7.8 Roof Covering.

7.8.1 The data element for roof covering is used to measure the type of roof covering on a structure. The roof covering is the outermost layer of material designed to protect the structure from the rain and elements. The knowledge of roof covering combustibility provides the basis for evaluation of the ignition potential of the roof and its potential role in fire spread. The roof covering classification is established by tests as outlined in NFPA 256, *Standard Methods of Fire Tests of Roof Coverings*.

7.8.2 Where the roof covering is to be coded, the coding structure in Table 7.8.2 should be used.

Table 7.8.2 Roof Covering Coding Structure

1	Class A or Class B roof covering.
2	Class C roof covering of composition or prepared materials. Included are asphalt shingles.
3	Class C roof covering of treated and listed wood shingles and wood shakes.
4	Untreated wood shingles, shakes.
5	Non-rated roof covering.
8	Structure without roof.
0	Roof covering not able to be classified further.
U	Roof covering undetermined or not reported.

7.9 External Exposure.

7.9.1 The data element for external exposure is used to measure the exposure to the structure from potential fires outside of the structure. NFPA 80A, *Recommended Practice for Protection of Buildings from Exterior Fire Exposures*, should be used as a guide in determining exposure severity.

7.9.2 Where the external exposure is to be coded, the coding structure in Table 7.9.2 should be used.

Table 7.9.2 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.

7.10 Perimeter Access.

7.10.1 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 fire-fighting 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.

7.10.2 When perimeter access is to be coded, the coding structure designations in Table 7.10.2 should be used.

Table 7.10.2 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.

7.11 Electrical Service Quality.

7.11.1 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.

7.11.2 Where the electrical service quality is to be coded, the coding structure designations in Table 7.11.2 should be used.

7.12 Heating Service Quality.

7.12.1 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.

7.12.2 Where the heating service quality is to be coded, the coding structure in Table 7.12.2 should be used.

Table 7.11.2 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.

Table 7.12.2 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.

7.13 Control of Smoking Practices.

7.13.1 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.

7.13.2 Where the smoking practice quality is to be coded, the coding structure in Table 7.13.2 should be used.

7.14 Fuel Control.

7.14.1 Solid Kindling Fuels.

7.14.1.1 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.

Table 7.13.2 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.

7.14.1.2 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.

7.14.1.3 Where solid kindling fuels are to be coded, the coding structure in Table 7.14.1.3 should be used.

Table 7.14.1.3 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.

7.14.2 Flammable or Combustible Liquid Use.

7.14.2.1 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.

7.14.2.2 Where flammable or combustible liquid use is to be coded, the coding structure in Table 7.14.2.2 should be used.

Table 7.14.2.2 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.

7.15 Obstacles to Rescue and Fire Control.

7.15.1 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.

7.15.2 Where the obstacles to rescue and fire control are to be coded, the coding structure designations in Table 7.15.2 should be used.

Table 7.15.2 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 Incident Origin

8.1 Purpose and Application. This chapter provides categories for documenting the following factors, which describe an incident's origin: the area of origin or release, any equipment involved in ignition or release, the heat source, the materials involved, and the ignition factors. Data elements within this chapter are used for documenting hazardous materials incidents as well as fires. Other data elements within this chapter provide categories that help to describe fuels involved in wildland fires.

8.2 Discussion and Examples. 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 that is devoted to a specific use or process. For example, an office building could be a 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 a portion of a room, a vehicle or a portion of a vehicle, or possibly some open area devoted to a single use. The heat of ignition or release of hazardous materials often originates in equipment that fails or brings about the ignition or release of hazardous material while operating 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, not only does it need heat but the heat must ignite a kindling fuel. This kindling fuel will be in the form of a particular item, identified as the item first ignited. This same item will be made of a particular substance or be of a particular composition that is identified as the 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" are used to classify that data.

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 should 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 should each be kept separate for reporting purposes. Thus, words like "attic" and "basement" should not be used to describe an area of origin. If these areas are used for storage, that should be reported; if they are used for some other purpose, that use should be reported.

8.3.2* Where the area of origin is to be coded, the coding structure in Table 8.3.2 should 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 way.
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.
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.

Table 8.3.2 *Continued*

- 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 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.
- 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).

Table 8.3.2 *Continued*

- 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.
  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 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 should 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 should 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 should 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 should 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, 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).
132	Boiler (power, process, heating).
141	Localized heating unit. Included are floor furnaces, wall heaters, and other localized heating equipment. Excluded are central heating units (131), catalytic heaters (142), oil-filled heaters (143), and baseboard heaters (144).
142	Heater, catalytic.
143	Heater, oil-filled.
144	Heater, baseboard.
145	Heat lamp.
146	Heat tape.
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.
215	Circuit breaker distribution panel.
216	Fuse-type distribution panel.
217	Copper branch circuit wiring. Included are metal-sheathed cable, nonmetallic-sheathed cable, and wire in conduit.
218	Aluminum branch circuit wiring. Included are metallic-sheathed cable, nonmetallic-sheathed cable, and wire in conduit.
221	Outlet, receptacle. Included are wall-type receptacles and electric dryer and stove receptacles.
222	Wall-type switch. Included are light switches.
223	Ground-fault interrupter (GFI), plug-in.
231	Lamp — tabletop, floor, desk. Excluded are light bulbs (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	Light bulb.
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.

Table 8.4.3.2 *Continued*

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.
271 Transformer, distribution type.
272 Overcurrent, disconnect equipment.
Excluded are panel boards (215 or 216).
273 Low-voltage transformer (not more than 50 volts).
274 Generator.
275 Inverter, converter.
276 Uninterruptible power supply (UPS).
277 Surge protector.
278 Battery charger, rectifier.
279 Battery.
Included are all battery types.
200 Electrical distribution, lighting, and power transfer not able to be classified further.

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.

Table 8.4.3.2 *Continued*

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 dry-cleaning operations and garnetting equipment.
361 Industrial or material-handling conveyor.
Excluded are agricultural conveyors (513).
362 Power transfer equipment: ropes, cables, blocks, belts.
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.

(continues)

Table 8.4.3.2 *Continued*

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.
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.
633 Hot plate.
634 Popcorn popper.
635 Pressure cooker or canner.
636 Kettle.
Included are slow cookers and warming pots.
637 Toaster.
638 Toaster oven.
639 Countertop broiler.
641 Bread-maker machine.
642 Deep fryer.
643 Grill, hibachi, barbecue.

Table 8.4.3.2 *Continued*

644 Wok, frying pan, skillet.
645 Waffle iron, griddle.
646 Oven or rotisserie for cooking and baking food.
647 Cooktop.
Included are camping stoves.
648 Range with an oven and cooking surface.
649 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.
657 Microwave oven.
600 Kitchen and cooking equipment not able to be classified further.

7 Electronic and Other Electrical Equipment.
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 disk 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.

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 shampooers.
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 (862).
862	Garage door opener.
863	Smoke alarm (self contained). Included are single- or multiple-station alarms responsive to smoke.
864	Gas alarm (self-contained).
865	Gas, smoke, or heat detector as part of an alarm system.
866	Fire alarm or burglar alarm system. Included is control equipment.
867	Intercom.
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.
881	Model vehicles. Included are model airplanes, boats, rockets, and powered vehicles used for hobby and recreational purposes.
882	Toy, powered.
883	Woodburning kit.

Table 8.4.3.2 *Continued*

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.

8.4.4 Equipment Power Source.

8.4.4.1 The equipment power source should 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 should be used.

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.

(continues)

Table 8.4.4.2 *Continued*

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 should be used.

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 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* Where the heat source is to be coded, the coding structure in Table 8.5.2 should be used.

Table 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.
2	*(This division not used in this edition.)*
3	*(This division not used in this edition.)*
4	Hot or Smoldering Object.
41	Heat, spark from friction. Included are overheated tires.

Table 8.5.2 *Continued*

42	Molten, hot material. Included are molten metal, hot forging, and hot glass, hot metal fragment, brakeshoe, 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.
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, and fireplace lighters.
66	Candle, taper.
67	Warning or road flare; fusee.
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.

Table 8.5.2 *Continued*

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.
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.

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 should 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 should be used.

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.

Table 8.6.1.2 *Continued*

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.
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.

(continues)

Table 8.6.1.2 *Continued*

6 Liquids, Pipes, and Filters.
- 61 Atomized or vaporized liquid.
  Included are aerosols.
- 62 Fuel.
  Included is flammable gas or ignitible liquid in or escaping from an engine or burner.
- 63 Flammable gas or ignitible liquid in or escaping from its final container.
  Included are flammable gases or ignitible 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 ignitible 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 ignitible 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.
- 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.

Table 8.6.1.2 *Continued*

- 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.
- 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 Type of Material.

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 should identify the first item that had sufficient volume or heat intensity to extend to uncontrolled or self-perpetuating fire.

8.6.2.2* Where the type of material is to be coded, the coding structure in Table 8.6.2.2 should be used.

Table 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.

Table 8.6.2.2 *Continued*

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.
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 *Fire Protection Guide to Hazardous Materials*.
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 combustible 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 combustible 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 combustible liquid.
Flash point at or above 200°F (93.4°C).
Included are cooking oil, transformer oil, and lubricating oil.
20 Flammable, combustible 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.

Table 8.6.2.2 *Continued*

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 Combustible metal.
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, cocofilm, 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 8.6.2.2 *Continued*

7	Fabric, Textile, Fur.
71	Fabric, fibers, cotton, blends, rayon, wool, silk, finished goods. Included are yarn and canvas. Excluded is fur (74).
74	Fur, whether as natural material or finished goods.
75	Synthetic hair. Included are wigs, hairpieces, and toupees.
76	Human hair.
77	Plastic-coated fabric. Included are plastic upholstery fabric and other vinyl fabrics.
70	Fabric, textile, fur not able to be classified further.
8	Material Compounded with Oil.
81	Linoleum.
82	Oilcloth.
83	*(This subdivision not used in this edition.)*
84	*(This subdivision not used in this edition.)*
85	*(This subdivision not used in this edition.)*
86	Asphalt-treated material. Excluded are by-products of combustion, soot, carbon, and creosote (34).
80	Material compounded with oil not able to be classified further.
9	Other Type of Material.
91	Chaff.
92	Mulch.
93	Litter, combinations of materials having no value in the same container or pile.
94	Animal.
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.
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.
00	Type of material not able to be classified further.
UU	Type of material undetermined or not reported.

8.7 Ignition. Ignition should be reported as the following three data elements, which apply to fires only:

(1) Cause of ignition
(2) Physical factors contributing to ignition
(3) Human factors contributing to ignition

8.7.1 Cause of Ignition.

8.7.1.1 The cause of ignition identifies how the heat of ignition and the material first ignited combined to cause a fire. 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.

Table 8.7.1.2 Cause of Ignition Coding Structure

1	Intentional. Included are the deliberate misuse of a heat source or a fire of an incendiary nature.
2	Unintentional. Included are friendly fires that become hostile and the failure of a piece of equipment or a heat source.
3	Natural. Included are causes related to weather, earthquakes, floods, and animals.
4	Cause of ignition under investigation.
U	Cause of ignition undetermined.

8.7.1.2 Where the cause of ignition is to be coded, the coding structure in Table 8.7.1.2 should be used.

8.7.2* Physical Factors Contributing to Ignition.

8.7.2.1 The physical factors contributing to ignition identify situations, actions, or omissions that contributed to allowing the heat source and combustible material to combine to ignite the fire. 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.

8.7.2.2 Where the factors contributing to ignition are to be coded, the coding structure in Table 8.7.2.2 should be used.

Table 8.7.2.2 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.

Table 8.7.2.2 *Continued*

	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. 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).
	24	*(This subdivision not used in this edition.)*
	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.

Table 8.7.2.2 *Continued*

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. 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.

8.7.3 Human Factors Contributing to Ignition.

8.7.3.1 The data element "human factors contributing to ignition" identifies the human-related conditions or situations that allowed the heat source and combustible material to combine to ignite the fire. 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.

8.7.3.2 Where the human factors contributing to ignition are to be coded, the coding structure in Table 8.7.3.2 should be used.

Table 8.7.3.2 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. Included are people who fall asleep as a result of drugs or alcohol. Excluded are people who simply fall asleep (1).
3	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.
N	No human factors contributing to ignition.
U	Human factors contributing to ignition undetermined or not reported.

8.8 Level of Origin. The data element "level of origin" identifies the distance either above or below grade level where an incident originated. This should 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" should 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 should 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].

8.9 Occupant of Room or Space of Origin at Time of Ignition.

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

8.9.2 Where the occupant of room or space of origin at time of ignition is to be coded, the coding structure in Table 8.9.2 should be used.

8.10 Activity Involved in Fire Start.

8.10.1 The data element "activity involved" identifies the activity of person(s) most involved with the ignition of the fire.

8.10.2 Where the activity involved in fire start is to be coded, the coding structure in Table 8.10.2 should be used.

Table 8.9.2 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.

Table 8.10.2 Activity Involved in Fire Start Coding Structure

1	Inside activity normal to occupancy of structure.
2	Inside activity not normal to occupancy of structure.
3	Outside commercial activity. Included are logging operations, farming, construction, and transportation.
4	Outside noncommercial activity not recreational.
5	Hunting, fishing, hiking, sightseeing.
6	Camping, picnicking.
7	Off-road vehicular use. Included are the use of motor bikes, all-terrain vehicles, and motor vehicles.
8	Malicious activity.
0	Activity involved in fire start not able to be classified further. Included are fires where there is no activity involved.
U	Activity involved in fire start undetermined or not reported.

8.11 Wildland Fuel Model.

8.11.1 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.

8.11.2 Where the wildland fuel model classification is to be coded, the coding structure in Table 8.11.2 should be used.

Table 8.11.2 Wildland Fuel Model Coding Structure

1 Fuel Model A — Annual grasses.
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 Fuel Model B — Mature brush [6 ft (2 m) and over].
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 chamise stands. The B model may also be used for the New Jersey pine barrens.

3 Fuel Model C — Open pine with grass.
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 Fuel Model D — Southern rough.
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 Fuel Model E — Hardwood litter (fall).
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 Fuel Model F — Intermountain West brush.
Model F represents mature closed chamise 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.

Table 8.11.2 *Continued*

7 Fuel Model G — West Coast conifers; close, heavy down materials.
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 Fuel Model H — Short-needle conifers; normal down woody materials.
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 Fuel Model I — Heavy slash, clearcut conifers greater than 25 tons/acre.
Fuel Model I was designed for clearcut conifer slash where the total loading of materials less than 6 in. (15 cm) in diameter exceeds 25 tons/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 clearcut 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 Fuel Model J — Medium slash, heavily thinned conifers (less than 25 tons/acre).
This model complements Fuel Model I. It is for clearcuts 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. Again, as the slash ages, the fire potential will be overrated.

11 Fuel Model K — Light slash (less than 15 tons/acre).
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.
This model applies to hardwood slash and to southern pine clearcuts where the loading of all fuels is less than 15 tons/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 *(This subdivision not used in this edition.)*

(continues)

Table 8.11.2 *Continued*

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 reedlike. 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, brushlike 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). 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.

Table 8.11.2 *Continued*

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.

8.12 Fire Danger Rating Class.

8.12.1 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.

8.12.2 Where the fire danger rating class is to be coded, the coding structure in Table 8.12.2 should be used.

Table 8.12.2 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 Purpose and Application. The purpose of the data elements in this chapter is to provide a uniform way to identify factors contributing to the growth and spread of the fire. These elements can help in the identification and analysis of building and equipment design as it relates to these factors.

9.2 Contributing Factors.

9.2.1 Contributing factors can 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. They should be used to clarify or complete elements of information that describe the incident.

9.2.2 Consideration should be given to providing multiple fields for recording contributing factors, so that more than one factor can be recorded.

9.2.3 Where the contributing factors are to be coded, the coding structure in Table 9.2.3 should be used.

Table 9.2.3 Contributing Factors Coding Structure

1 Building Construction or Design Factors.
- 111 Panelized roof.
- 112 Roof collapse.
- 113 Roof assembly combustible.
  Excluded is combustible roof covering (114).
- 114 Roof covering.
- 121 Ceiling collapse.
- 122 Ceiling material combustible.
- 123 Ceiling finish.
- 124 *(This subdivision not used in this edition.)*
- 125 Holes or openings in walls or ceilings.
- 131 Wall collapse.
- 132 Wall combustible.
- 133 Wall covering.
- 134 Wall finish.
- 135 Wall design or construction contributing to lapping.
- 136 Existence of partitions or partial walls.
- 137 Balloon construction.
- 138 Arrangement of partitions.
- 139 Lack of fire barrier walls.
- 141 Floor collapse.
- 142 Floor material combustible.
- 143 Floor covering.
- 144 Floor finish.
- 151 Lack of fire barrier walls or doors.
- 152 Fire doors — nonautomatic closure.
- 153 Transoms.
- 154 Window interior.
- 155 Window exterior.
- 161 Attic undivided.
- 162 Attic openings.
- 163 Hall undivided.
- 164 Space inaccessible (created during construction or remodeling).
- 165 Space undivided.
- 166 Insulation: combustible.
- 167 Insulation: lacking.
- 168 Ducts: horizontal.
- 171 Stairwell: exterior.
- 172 Stairwell: interior.
- 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.
- 184 Wood framing left in place.
- 185 Wood beam construction.
- 186 Lightweight metal truss construction.
- 187 Fixed burglar protection assemblies (bars, grills on windows and doors).
- 188 Quick-release failure of bars on windows or doors.
- 191 Installation deficiency.
  Included are insufficient space or insulation for heat-producing devices or systems.
- 192 Previous damage by fire.
- 193 Pyrolysis (long-term exposure to heat).
- 194 Adhesives.
- 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.
- 211 Altered device or mechanism.
- 212 Careless act.
- 213 Doors left open or outside door unsecured.
- 214 Operation of fire doors obstructed or impeded.
- 215 Improper operation.
- 216 Maintenance inadequate.
  Included are poor housekeeping, improper clearance, and vegetation too close.
- 217 Misuse of equipment.
- 218 Violation of fire or life safety code.
- 221 Fire in hazardous location.
- 222 Illegal and clandestine drug operation.
- 231 Drowsiness.
- 232 Intoxication: drugs or alcohol.
- 233 Impairment: mental or physical.
- 241 Juvenile activity.
- 242 Juveniles left unattended.
- 243 Malicious mischief.
- 244 Vandalism.
- 251 Labor dispute.
- 252 Gang activity.
- 253 Riot or civil disturbance.
  Included are political activities or terrorist acts.
- 254 Person(s) interfered with operations.
- 261 Crime cover: murder.
- 262 Crime cover: fraud.
- 263 Crime cover: burglary, theft, other.
- 264 Psychotic individual.
- 265 Pyromaniac, thrill.
- 266 Vanity, jealousy.
- 267 Spite, grudge, revenge.
- 271 Suicide.
- 272 Self-immolation (deliberately setting oneself on fire).
- 273 Immolation — other (religious/ritual acts).
- 281 Vandalism or malicious act.
- 282 Breaking and entering.
- 283 Accelerant used.
- 284 Delayed ignition device.
- 200 Acts or omissions not able to be classified further.

3 Building Contents.
- 311 Aisles blocked.
- 312 Aisles: improper width or arrangement.
- 313 *(This subdivision not used in this edition.)*
- 314 *(This subdivision not used in this edition.)*
- 315 Fireload excessive.
- 321 Chemical: flammable or combustible liquid.
- 322 Chemical: flammable solid.
- 323 Chemical: corrosive liquid.
- 324 Chemical: corrosive solid.
- 325 Chemical: catalyst, initiator or oxidizer, liquid.
- 326 Chemical: catalyst, initiator or oxidizer, solid.
- 327 Explosives.
- 331 Decorations.
  Included are contents such as crepe paper, garland.
- 332 Dust accumulation.

(continues)

Table 9.2.3 *Continued*

	341	Gas: natural.
	342	Gas: Liquefied Petroleum (LP-Gas).
	343	Gas: other than natural gas or LP-Gas.
	351	Furniture: general.
	352	Furniture: plastic.
	353	Fixtures.
	354	Plastic containers for waste or recycling material.
	361	Combustible storage greater than 12 ft (4 m) to top of storage Excluded is rack storage (362).
	362	High rack storage.
	363	Attic storage.
	364	Basement storage.
	365	Excessive recyclable material present.
	366	Storage: improper.
	367	Storage: poor practice. Included is the arrangement of stock or contents.
	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.
	422	Inability to convey message.
	423	Inability to report. Included are non-emergency-related mental or physical disability.
	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.
	432	Blocked roadway (other).
	433	Fire department access blocked.
	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.
	461	Airspace restriction.
	462	Military activity.
	471	Hostile activity.
	481	Closest apparatus unavailable.
	400	Delays not able to be classified further.
5	Protective Equipment.	
	511	Extinguishing system failure.
	512	Extinguishing system improper type.
	513	Extinguishing system inadequate.
	514	Extinguishing system not operational or shut off.
	521	Standpipe/fire department connection damage.
	522	Standpipe/fire department connection blockage.
	523	Standpipe/fire department connection failure.
	524	Standpipe/fire department connection improper installation.
	531	Water supply: inadequate private.
	532	Water supply: inadequate public.
	533	Pump failure.
	541	Smoke detector: disconnected.
	542	Smoke detector: battery failure.
	543	Protective equipment affected by electrical power outage.
	544	Smoke detector inoperative owing to fire progress that caused power failure.
	551	Fire extinguisher: improper maintenance.
	552	Fire extinguisher: improper type.
	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.
	563	Special protective device failure.
	500	Protective equipment not able to be classified further.
6	Electrical or Mechanical Equipment.	
	611	Insulator broken on power line.
	612	Inadequate clearance around conductor or clearance from power line right-of-way.
	613	Short circuit in similar metal wiring systems. Included are like-metal connectors and wiring — that is, all copper or all aluminum.
	614	Short circuit in dissimilar-metal wiring systems. Included are aluminum-to-copper connections.
	621	Control system: automatic.
	622	Control system: manual.
	623	Malfunction of equipment.
	631	Friction.
	632	Overheating.
	633	Rupture.
	699	Electrical or mechanical 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.

Table 9.2.3 *Continued*

724	Rain.
725	Snow.
731	Lightning.
732	Wind. Included are hurricanes and tornados.
733	Waves or tidal action (fresh or salt water).
741	Earthquake.
742	Volcanic activity.
751	Animal activity. Included are birds.
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.
8	Fireworks.
811	Smoke bomb.
812	Base fountain.
813	Party popper.
814	Cone fountain.
815	Wheel.
816	Sparkler with wire core.
817	Sparkler with wooden core.
818	Handle fountain.
821	California candle with or without handle.
822	Torpedo, snap cap.
823	Ground spinner, ground flowers.
831	Firecracker. Included are ladyfingers.
832	Destructive device: M-80 or larger.
833	Silver salute, M-70.
834	Cherry bomb.
835	Roman candle.
836	Sky rocket.
837	Bottle rocket.
838	Missile rocket.
839	Mortars or cannons.
841	Agricultural and wildlife control devices.
851	Public display devices.
852	Special effects devices used in the entertainment industry.
861	Model rocket, premanufactured and sealed engine.
862	Amateur or experimental rocketry.
871	Emergency signaling devices, warning flares.
872	Military device. Included are tracers.
873	Railroad torpedo.
881	Homemade devices not made from commercial fireworks.
882	Commercial devices that have been altered or modified.
891	Fireworks that are legal to possess, use, or sell in jurisdiction.
892	Fireworks that are illegal to possess, use, or sell in jurisdiction.
800	Fireworks not able to be classified further.
9	Egress and Exit Factors.
911	Occupancy load above legal limit.

Table 9.2.3 *Continued*

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.
942	Public gathering.
900	Egress and exit factor not able to be classified further.
UUU	Contributing factors undetermined or not reported.

9.3 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 fire-fighting operations.

9.3.1 Materials Involved.

9.3.1.1 Often, there is not just one significant path of flame travel. Consideration should 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 should 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.

9.3.1.2 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) should be identified. The classification numbers in Section 8.6 for material identification should be used to classify materials involved in fire spread.

9.3.2 Factors Contributing to Flame Travel.

9.3.2.1 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.

9.3.2.2 Where the factors contributing to flame travel are to be coded, the coding structure in Table 9.3.2.2 should be used.

9.4 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.

Table 9.3.2.2 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.
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.
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.

9.4.1 Materials Involved.

9.4.1.1 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.

9.4.1.2 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.

9.4.2 Avenue of Smoke Travel.

9.4.2.1 The avenue of smoke travel identifies how the smoke traveled beyond the room or area of origin.

9.4.2.2 Where the avenue of smoke travel is to be coded, the coding structure in Table 9.4.2.2 should be used.

Table 9.4.2.2 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.

9.5 Fire Detection and Alarm.

9.5.1 Method of Detection.

9.5.1.1 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.

9.5.1.2 Where the method of detection is to be coded, the coding structure in Table 9.5.1.2 should be used.

Table 9.5.1.2 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.
0	Other Method of Detection.
00	Method of detection not able to be classified further.
UU	Method of detection undetermined or not reported.

9.5.2 Method of Alarm to the Fire Department.

9.5.2.1 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.

9.5.2.2 Where the method of alarm to the fire department is to be coded, the coding structure in Table 9.5.2.2 should be used.

Table 9.5.2.2 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.

9.5.3 Delay in Alarm.

9.5.3.1 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.

9.5.3.2 Where the delay in alarm is to be coded, the coding structure in Table 9.5.3.2 should be used.

Table 9.5.3.2 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).

(continues)

Table 9.5.3.2 *Continued*

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.

9.6 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.

9.6.1 Type of Weather. Where the type of weather is to be coded, the coding structure in Table 9.6.1 should be used.

Table 9.6.1 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.

9.6.2 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 should 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 should be recorded as –5°C, and 75 degrees Fahrenheit as 75°F.

9.6.3 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 should be recorded as a numeric value between 1 and 100 percent.

9.6.4 Wind Direction. Where the wind direction is to be coded, the coding structure in Table 9.6.4 should be used.

Table 9.6.4 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.

9.6.5 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 9.6.5 should be used.

Table 9.6.5 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.

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 should 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 3.3.66.
(2) Water Supply Flow. See 3.3.101.

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 is to track systems designed to detect fires and to trigger an alarm, activate an extinguishing system, or take some other action automatically.

10.3.1 Automatic Detector Coverage.

10.3.1.1 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.

10.3.1.2 Where the automatic detector coverage is to be coded, the coding structure in Table 10.3.1.2 should be used.

Table 10.3.1.2 Automatic Detector Coverage Coding Structure

1	Complete automatic detection coverage. The system complies with the requirements of *NFPA 72®*, *National Fire Alarm Code®*.
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.

10.3.2 Detector Type.

10.3.2.1 The data element "detector type" 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 data element "Detector Power Supply" (*see 10.3.3*) in a pre-fire inventory to explain further the type of automatic detection recorded in 10.3.1.

10.3.2.2 Where the detector type is to be coded, the coding structure in Table 10.3.2.2 should be used.

Table 10.3.2.2 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.

10.3.3 Detector Power Supply.

10.3.3.1 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 data element "detector type" (*see 10.3.2*) in a pre-fire inventory to further explain the type of automatic detection recorded in 10.3.1.

10.3.3.2 Where the detector power supply is to be coded, the coding structure in Table 10.3.3.2 should be used.

Table 10.3.3.2 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.

10.3.4 Performance of Fire Detection Equipment. Two data elements are used to measure the performance of fire detection equipment. One indicates whether it operated or not, 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.

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

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

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.

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.

10.3.5.1 The data element "reason for detector failure" is used to record the reason why a detector failed to operate properly, if there was a detector failure.

10.3.5.2 Where the reason for detector failure is to be coded, the coding structure in Table 10.3.5.2 should be used.

Table 10.3.5.2 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.

10.4 Automatic Alarm Transmission.

10.4.1 This section classifies the automatic alarm system transmission features provided to get the alarm from the structure to the responding fire department. *NFPA 72, National Fire Alarm Code*, provides system details.

10.4.2 Where the automatic alarm transmission is to be coded, the coding structure in Table 10.4.2 should be used.

10.5 Protection. It is the intent of this section to 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.

10.5.1.1.1 The data element "automatic extinguishing system" 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.

Table 10.4.2 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.

10.5.1.1.2 The following NFPA documents address specifics of automatic extinguishing systems:

(1) NFPA 11, *Standard for Low-, Medium-, and High-Expansion Foam*
(2) NFPA 12, *Standard on Carbon Dioxide Extinguishing Systems*

(3) NFPA 12A, *Standard on Halon 1301 Fire Extinguishing Systems*
(4) NFPA 13, *Standard for the Installation of Sprinkler Systems*
(5) NFPA 13D, *Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes*
(6) NFPA 13R, *Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height*
(7) NFPA 15, *Standard for Water Spray Fixed Systems for Fire Protection*
(8) NFPA 17, *Standard for Dry Chemical Extinguishing Systems*
(9) NFPA 69, *Standard on Explosion Prevention Systems*
(10) NFPA 750, *Standard on Water Mist Fire Protection Systems*

10.5.1.1.3 Whether it provides general area coverage as an automatic sprinkler system or more local special hazard protection, 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. Where the type of automatic extinguishing system present is to be coded, the coding structure in Table 10.5.1.1.3 should be used.

Table 10.5.1.1.3 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.

10.5.1.2 Coverage of Automatic Extinguishing System.

10.5.1.2.1 The data element "coverage of automatic extinguishing system" is for use with the data element "type of automatic extinguishing system" *(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 10.5.1.1.2 and should be used to evaluate the installation.

10.5.1.2.2 "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. Where the coverage of an automatic extinguishing system is to be coded, the coding structure in Table 10.5.1.2.2 should be used.

Table 10.5.1.2.2 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.

10.5.1.3 Number of Automatic Sprinklers That Operated. 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.

10.5.1.4 Performance of Automatic Extinguishing System.

10.5.1.4.1 The data element "performance of automatic extinguishing system" 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 be explained. The data element "reason for extinguishing system failure" (*see 10.5.1.5*) should be used to record the failure.

10.5.1.4.2 Where the performance of an automatic extinguishing system is to be coded, the coding structure in Table 10.5.1.4.2 should be used.

Table 10.5.1.4.2 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.

10.5.1.5 Reason for Extinguishing System Failure.

10.5.1.5.1 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 10.5.1.5.2 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	System components damaged.
5	Fire not in the area protected by the extinguishing system.
6	Lack of maintenance. Included are situations where there was corrosion or the heads were painted.
7	Inappropriate system for the type of fire.
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.

10.5.1.5.2 Where the reason for extinguishing system failure is to be coded, the coding structure in Table 10.5.1.5.2 should be used.

10.5.2 Manual Protection Systems or Devices Available. 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 fire-fighting 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.

10.5.2.1 Portable Fire Extinguishers. NFPA 10, *Standard for Portable Fire Extinguishers*, addresses the installation of portable fire extinguishers. Where the presence of portable fire extinguishers is to be coded, the coding structure in Table 10.5.2.1 should be used.

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.

10.5.2.2 Occupant Hose. Where the occupant hose is to be coded, the coding structure in Table 10.5.2.2 should be used. NFPA 14, *Standard for the Installation of Standpipe and Hose Systems*, addresses the installation of occupant use hose stations.

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.

10.5.2.3 Standpipe System. Where the standpipe system is to be coded, the coding structure in Table 10.5.2.3 should be used. NFPA 14, *Standard for the Installation of Standpipe and Hose Systems*, addresses the installation of standpipe systems.

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.

10.5.2.4 Performance of a Manual Protection System or Device.

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 data element "Reason for a Manual Protection System or Device Failure" (*see 10.5.2.5*) should be used to record the failure.

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 should be used.

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.

10.5.2.5 Reason for a Manual Protection System or Device Failure.

10.5.2.5.1 If there was a manual protection system or device available to persons in the area of fire origin and it failed to operate as designed, the data element "reason for a manual protection system or device failure" is used to record the reasons for the failure.

Table 10.5.2.5.2 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 fire-fighting 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.

10.5.2.5.2 Where the reason for manual protection system or device failure is to be coded, the coding structure in Table 10.5.2.5.2 should be used.

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 should be used. Recognized water systems are engineered water main and hydrant systems under pressure.

10.6.2 Water Supply Flow. The flow should reflect the sustained water supply capacity available for a period of 1 hour to apparatus responding on the first alarm. It should 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 7.7*) to measure the performance of one of the building's fire defense measures. Fire spread limitation devices include enclosing walls, doors, dampers, and the like.

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.

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.

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

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 should 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 should 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 fire fighter 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 should be reported. This data element can be extremely useful in determining what other data should 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 Where the incident type is to be coded, the coding structure in Table 11.3.2 should be used.

Table 11.3.2 Incident Type Coding Structure

1 Fire or Explosion.
Included are fires out on arrival and gas vapor explosions with extremely rapid combustion but no after-fire.
Excluded are overheat or excessive heat (25 series), unauthorized burning (56 series), and controlled burning (63 series).

11 Structure fire.
Included are fires inside a structure whether or not there was damage to the structure itself.
Excluded are fires in mobile property when used as a structure (120–123).

111 Building fire.
Included are fires that only involve contents.
Excluded are fires confined to a noncombustible container (113–118).

112 Fire in a structure fire other than in a building.
Included are fires on or in piers, quays, or pilings; tunnels or underground connecting structures; bridges, trestles, or overhead elevated structures; transformer, power, or utility vaults or equipment; fences; and tents.

113 Fire involving the contents of a cooking vessel without fire extension beyond the vessel.

114 Fires originating in and confined to a chimney or flue.
Excluded are fires that extend beyond the chimney (111 or 112).

115 Incinerator overload or malfunction, but flames cause no damage outside the incinerator.

116 Fuel or oil burner/boiler, delayed ignition or malfunction, where flames cause no damage outside the fire box.

117 Trash compactor fire, confined to contents of compactor.
Excluded are home trash compactors (*see 8.4.3.2, equipment involved in ignition, classification 812*).

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.
Included are mobile homes, motor homes, camping trailers, and other mobile property when not in transit but used as a structure for residential, commercial, or other purposes.
(*See Section 6.7 to classify the type of mobile property, 7.4.2.2 to indicate the method of construction, and Section 6.6 to classify the specific property use.*)

121 Fire in manufactured home used as a fixed residence.
Included are manufactured homes when not in transit but used as a structure for residential purposes.

122 Fire in a motor home, camper, or recreational vehicle when used as a structure.
Included are motor homes when not in transit but used as a structure for residential purposes.

123 Fire in a portable building, when used at a fixed location.
Included are portable buildings and industrialized units used for commerce, industry, or education, and trailers used for commercial purposes.

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.
Included are mobile properties normally used as structures, while in transit and used as vehicles.
Excluded are mobile properties used as a structure (12 series).
If a vehicle fire occurs on a structure such as a bridge, and does not damage the structure, it should be classified here as a mobile property fire.

131 Passenger vehicle fire.
Included are pickup trucks, sport utility vehicles, and buses as well as fires in any motorized passenger vehicle, other than a motor home (136), capable of being operated without a special operator's license.

132 Road freight or transport vehicle fire.
Included are commercial freight hauling vehicles, moving trucks, delivery trucks, and contractor vans or trucks.

133 Rail vehicle fire.
Included are all rail cars and intermodal containers while mounted on a rail car.

134 Water vehicle fire.
Included are boats, barges, hovercraft, and all other vehicles designed for navigation on water.

Table 11.3.2 *Continued*

135 Aircraft fire.
Included are fires originating in or on an aircraft, regardless of use.
136 Self-propelled motor home or recreational vehicle.
Included are only self-propelled motor homes or recreational vehicles when being used for transport.
Excluded are those used for normal residential use (122).
137 Camper or recreational vehicle (RV) fire, not self-propelled.
Included are travel and camping trailers.
Excluded are RVs on blocks or used regularly as a fixed building (122) and the vehicle towing the camper or RV, or the campers mounted on pickups (131).
138 Off-road vehicle or heavy equipment fire.
Included are dirt bikes, specialty off-road vehicles, earth-moving equipment (bulldozers), and farm equipment.
130 Fire in mobile property outside a structure not able to be classified further.

14 Fire in natural vegetation.
Included are trees, brush, and grass.
Excluded are crops or plants under cultivation (17 series).
141 Forest, woods, or wildland fire.
Included are fires involving vegetative fuels, other than prescribed fire (632), that occur in an area in which development is essentially nonexistent, except for roads, railroads, power lines, and the like. Also included are forests managed for wood production and fires involving elevated fuels such as tree branches and crowns.
Excluded are areas in cultivation for agricultural purposes such as tree farms or crops (17 series).
142 Brush fire or brush-and-grass fire mixture.
Included are ground fuels lying on or immediately above the ground, such as duff, roots, dead leaves, fine dead wood, and downed logs.
143 Fire confined to area characterized by grass ground cover, with little or no involvement of other ground fuels.
Excluded is brush-and-grass mixture (142).
140 Fire in natural vegetation not able to be classified further.

15 Refuse fire outside.
Included are all hostile fires outside a structure or vehicle (not included above) where the material burning has negligible value, and fires in mechanically moved waste or rubbish containers outside a structure.
151 Outside rubbish, trash, or waste fire not included in 152 through 155.
Excluded are outside rubbish fires in a container or receptacle.
152 Garbage dump or sanitary landfill fire.
153 Construction or demolition landfill fire.

Table 11.3.2 *Continued*

154 Outside trash receptacle fire.
Included are fires in dumpsters and containers of waste material from manufacturing or other production processes.
Excluded are materials that are not rubbish, or material that has salvage value (161 or 162).
155 Outside stationary compactor or compacted trash fire.
Included are fires where the only material burning is rubbish.
Excluded are fires where the compactor is damaged (162).
150 Outside rubbish fire not able to be classified further.

16 Special outside fire (not included in 15 series above or 18 series below).
Included are all hostile fires outside a structure or vehicle where the material burning has definable value.
Excluded are crops and orchards (17 series).
161 Outside storage fire on residential or commercial/industrial property, not rubbish.
Included are recyclable materials at drop-off points.
162 Outside equipment fire.
Included are outside trash compactors, outside HVAC units, and irrigation pumps.
Excluded are special structures (11 series) and mobile construction equipment (13 series).
163 Outside gas or vapor combustion explosion without sustained fire.
164 Outside mailbox fire.
Included are drop-off boxes for delivery services.
160 Special outside fire not able to be classified further.

17 Fire in cultivated vegetation or crop.
Included are standing crops, orchards, and vines.
171 Cultivated grain or crop fire.
Included are fires involving corn, wheat, soybeans, rice, and other plants before harvest.
172 Cultivated orchard or vineyard fire.
173 Cultivated trees or nursery stock fire.
Included are fires involving Christmas tree farms and plants under cultivation for transport off-site for ornamental use.
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 (no fire).
Excluded is steam mistaken for smoke when the steam is being released from a normal vent or relief valve (65 series).
211 Overpressure rupture of steam pipe or pipeline.
212 Overpressure rupture of steam boiler.
213 Steam rupture of pressure or process vessel.

(continues)

Table 11.3.2 *Continued*

- 210 Overpressure rupture from steam not able to be classified further.
- 22 Overpressure rupture from air or gas — no fire.
  - 221 Overpressure rupture of air or gas pipe or pipeline.
  - 222 Overpressure rupture of boiler from air or gas. Excluded are steam-related overpressure ruptures (212).
  - 223 Overpressure rupture of pressure or process vessel from air or gas, not steam.
  - 220 Overpressure rupture from 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). Included are explosions involving military ordnance, dynamite, nitroglycerin, plastic explosives, propellants, and explosives with a UN classification 1.1 or 1.3. Includes primary and secondary high explosives.
  - 242 Blasting agent explosion (no fire). Included are explosions of ammonium nitrate and fuel oil (ANFO) mixtures and explosives with a UN classification 1.5.
  - 243 Fireworks explosion (no fire). Included are all classes of fireworks.
  - 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. Excluded are lightning strikes with no ensuing fire (814).
- 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. Included are incidents where medical assistance is provided to another group or agency that has primary EMS responsibility, such as assisting with moving a heavy patient.
- 32 Emergency medical services incident.
  - 321 EMS call. Included are calls when the patient refuses treatment. Excluded are vehicle accident with injury (322) and pedestrian struck (323).
  - 322 Motor vehicle accident with injuries. Included are collisions with other vehicles, fixed objects, or loss of control resulting in leaving the roadway.
  - 323 Motor vehicle/pedestrian (MV Ped) accident. Included is any motor vehicle accident involving a pedestrian injury.

Table 11.3.2 *Continued*

- 324 Motor vehicle accidents with no injuries. Includes EMS where no injuries were found.
- 320 Emergency medical incident not able to be classified further.
- 33 Lock-in.
  - 331 Lock-in. Included are opening locked vehicles and gaining entry to locked areas for access by caretakers or rescuers, such as a child locked in a bathroom. Excluded are lock-outs (511).
- 34 Search for lost person.
  - 341 Search for person on land. Included are lost hikers and children, even where there is an incidental search of local bodies of water, such as a creek or river.
  - 342 Search for person in water. Included are shoreline searches incidental to a reported drowning call.
  - 343 Search for person underground. Included are searches in caves, mines, tunnels, and the like.
  - 340 Search for lost person not able to be classified further.
- 35 Extrication, rescue. Excluded are water or ice rescues (36) or electrical rescues (37).
  - 351 Extrication of victims from a building or structure, such as a building collapse. Excluded are high-angle rescues (356).
  - 352 Extrication of victim(s) from vehicle. Included are rescues from vehicles hanging off a bridge or cliff.
  - 353 Removal of victim(s) from stalled elevator.
  - 354 Trench/below-grade rescue.
  - 355 Confined space rescue. Included are rescues from the interiors of tanks, including areas with potential for hazardous atmospheres, such as silos, wells, and tunnels.
  - 356 High-angle rescue. Included are rope rescue and rescues off structures.
  - 357 Extrication of victim(s) from machinery. Included is extrication from farm or industrial equipment.
  - 350 Extrication, rescue not able to be classified further.
- 36 Water- or ice-related rescue.
  - 361 Swimming/recreational water areas rescue. Included are pools and ponds. Excluded are ice rescues (362).
  - 362 Ice rescue. Included are only cases where the victim is stranded on ice or has fallen through ice.
  - 363 Swift-water rescue. Included are flash flood conditions.
  - 364 Surf rescue.
  - 365 Watercraft rescue. Included are people falling overboard at a significant distance from land.

Table 11.3.2 *Continued*

Excluded are rescues near the shore and in swimming/recreational areas (361).
360 Water- or ice-related rescue not able to be classified further.
37 Electrical hazard rescue.
371 Electrocution or potential electrocution.
Excluded are people trapped by power lines (372).
372 Trapped by power lines.
Included are people trapped by downed or dangling power lines or other energized electrical equipment.
370 Electrical hazard rescue not able to be classified further.
38 Rescue or EMS standby.
381 Rescue or EMS standby for hazardous conditions.
Excluded are aircraft standbys (462).
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, Standby (No Fire).
Included are potential accidents.
41 Flammable or combustible liquid or flammable gas spill or leak.
411 Gasoline or other flammable liquid spill.
Included are liquids with a flash point below 100°F (37.8°C) at standard temperature and pressure (Class I liquids).
412 Gas leak (natural gas or LP-Gas).
Excluded are gas odors with no source found (671).
413 Oil or other combustible liquid spill.
Included are liquids with a flash point at or above 100°F (37.8°C) at standard temperature and pressure (Class II or III liquids).
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).
Included are incidents where there is the potential for spills or leaks.
422 Chemical spill or leak.
Included are spills of unstable, reactive, or explosive material.
423 Refrigeration leak, including ammonia.
424 Carbon monoxide incident.
Excluded are incidents where no carbon monoxide was found (736 or 746).
420 Chemical release, chemical reaction, or toxic condition not able to be classified further.
43 Radioactive condition.
431 Radiation leak, radioactive material.
Included are release of radiation due to breaching of the container or other accidental release.
430 Radioactive condition not able to be classified further.

Table 11.3.2 *Continued*

44 Electrical wiring or equipment problem.
Included are power lines down and incidents where disconnection of the electrical energy clears the emergency.
Excluded are emergencies where there is a sustained fire after the electrical energy has been disconnected (1 series).
441 Heat from short circuit (wiring), defective or worn insulation.
442 Overheated motor or wiring.
443 Breakdown of light ballast.
444 Power line down.
Excluded are people trapped by downed power lines (372).
445 Arcing, shorted electrical equipment.
440 Electrical wiring or equipment problem not able to be classified further.
45 *(This division not used in this edition.)*
46 Accident, potential accident.
Included are incidents where there is a perceived problem.
461 Building or structure weakened or collapsed.
Excluded are incidents where people are trapped (351).
462 Aircraft standby.
Included are routine standby for takeoff and landing as well as emergency alerts at airports.
463 Vehicle accident, general cleanup.
Included are incidents where the fire department is dispatched after the accident to clear away debris.
Excluded are extrication from vehicle (352) and ignitible liquid spills (411 or 413).
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.
5 Service Call.
51 Person in distress.
511 Lock-out.
Included are efforts to remove keys from locked vehicles.
Excluded are calls for persons locked in (331).

(continues)

Table 11.3.2 *Continued*

- 512 Ring or jewelry removal, without transport to hospital.
  Excluded are persons injured (321).
- 510 Person in distress not able to be classified further.

52 Water problem.
- 521 Water (not people) evacuation.
  Included is the removal of water from basements.
  Excluded are water rescues (360 series).
- 522 Water or steam leak.
  Included are calls for an open hydrant.
  Excluded are overpressure ruptures (211).
- 520 Water problem not able to be classified further.

53 Smoke, odor problem.
- 531 Smoke or odor problem.
  Included are actual smoke conditions regardless of source.
  Excluded are smoke conditions from a hostile fire (1 series) or a hazardous materials release (4 series).

54 Animal problem or rescue.
- 541 Animal problem.
  Included are persons trapped by an animal or an animal on the loose.
- 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.
  Included are forcible entry and providing lighting.
- 552 Police matter.
  Included are incidents where the fire department is called to a scene that should be handled by the police.
- 553 Service to the public.
  Excluded is service to governmental agencies (551 or 552).
- 554 Assist to invalid.
  Included are incidents where an invalid calls the fire department for routine help such as an assist in returning to bed or a chair, with no transport or medical treatment given.
- 555 Defective elevator, no occupants.
- 550 Public service assistance not able to be classified further.

56 Unauthorized burning.
  Included are fires that are under control and not endangering property.
  Excluded are fires where burning is authorized and under control (63).
- 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.
  Included are incidents that are cleared or where all apparatus is placed in service prior to its arrival on the scene.
  Excluded are fires out on arrival (1 series) and incidents where a fire department unit arrives on the scene (classified by actual incident type found).

62 No emergency found.
- 621 Wrong location.
  Excluded are malicious false alarms (71 series).
- 622 No incident on arrival at dispatched address.

63 Controlled burning.
- 631 Authorized controlled burning.
  Included are fires that are agricultural in nature and managed by the property owner.
  Excluded are unauthorized controlled burning (561) and prescribed fires (632).
- 632 Prescribed fire.
  Included are fires that have been ignited by management actions to meet specific objectives and have a written, approved prescribed fire plan prior to ignition.
  Excluded is authorized controlled burning (631).

64 Vicinity alarm.
- 641 Vicinity alarm (incident at another location).
  For use only when an erroneous report is received for a legitimate incident.
  Included are separate locations reported for an actual fire and multiple boxes pulled for one fire.

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 (no hostile fire).
- 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.
  Included is odor of gas where no leak or gas is found.

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 Municipal alarm system, malicious false alarm.
  Included are alarms transmitted on street fire alarm boxes.

Table 11.3.2 *Continued*

712 Direct tie to fire department, malicious false alarm.
Included are malicious alarms transmitted via fire alarm system directly tied to the fire department, not via dialed telephone.
713 Telephone, malicious false alarm.
Included are false alarms transmitted via the public telephone network using the local emergency reporting number of the fire department or another emergency service agency.
714 Central station, malicious false alarm.
Included are malicious false alarms transmitted via a central station-monitored fire alarm system.
715 Local alarm system, malicious false alarm.
Included are false alarms reported via telephone or other means as a result of the malicious activation of a local fire alarm system.
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.
Included is improper performance of a fire alarm system that is not a result of a proper system response to environmental stimuli such as smoke or high heat conditions.
731 Sprinkler activated due to the failure or malfunction of the sprinkler system.
Included are any failures of sprinkler equipment that lead to sprinkler activation with no fire present.
Excluded is unintentional operation caused by damage to the sprinkler system (74 series).
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.
Included is testing the sprinkler system connected to an alarm system without notifying the fire department.
742 Extinguishing system activation.
Included is testing an extinguishing system connected to an alarm system without notifying the fire department.
743 Smoke detector activation, no fire — unintentional.
Included are proper system responses to environmental stimuli such as non-hostile smoke.

Table 11.3.2 *Continued*

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.
Included is tornado, hurricane, cyclone, ice, wind, snow, and dust storm assessment where no other service is rendered.
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 Citizen's complaint.
911 Citizen's complaint.
Included are reports of code or ordinance violation.
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.

11.4 Condition of Fire on Arrival.

11.4.1 The data element "condition of fire on arrival" 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.

11.4.2 Where the condition of fire on arrival is to be coded, the coding structure in Table 11.4.2 should be used.

Table 11.4.2 Condition of Fire on Arrival Coding Structure

1	Emergency cleared prior to arrival.
2	Fire with no evidence visible from street.
3	Fire with smoke showing only. Included are smoldering wildland fires.
4	Flames showing from small area. Included are flames showing on one story or less, flames showing from part of a vehicle, and creeping fires in wildland.
5	Flames showing from large area. Included are flames showing on more than one story and running, and spotting wildland fire.
6	Fully involved. Included are total involvement of a structure or vehicle and crowning wildland fires.
7	Exposure involved. Included are multiple structures/vehicles involved and wildland fires that also involve structures or vehicles.
0	Condition of fire on arrival not able to be classified further.
U	Condition of fire on arrival undetermined or not reported.

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 Where the type of action taken is to be coded, the coding structure in Table 11.5.2 should be used. The coding in Table 11.5.2 should be used to code data about the type of action taken by the responding emergency forces. Where more than one action is applicable and only one action is being recorded, the code number that is highest on the list (lowest numerical value) should be used.

Table 11.5.2 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. Included is clearing firebreaks using direct, indirect, and burnout tactics as appropriate.
14	Contain fire. Included is containing wildland fires.
15	Confine fire. Included is confining wildland fires.
16	Control fire. Included is controlling wildland fires.
17	Manage prescribed fire in wildland.
10	Fire control or extinguishment not able to be classified further.
2	Search and Rescue Activity.
21	Search for lost or missing person. Included are animals.
22	Rescue, remove from harm. Excluded is extrication from a vehicle (23).
23	Extrication or disentangling of a person. Excluded is body recovery (24).
24	Recovery of body or body parts.
20	Search and rescue activity not able to be classified further.
3	Administer Emergency Medical Services (EMS). Included are emergency transports.
31	Provide first aid and check for injuries. Included is medical evaluation of patient.
32	Provide basic life support.
33	Provide advanced life support (ALS).
34	Transport of person from scene in fire service ambulance or apparatus.
30	Administer emergency medical services not able to be classified further.
4	Mitigate Hazardous Conditions.
41	Identification, analysis of hazardous materials.
42	Monitor, sample hazardous materials. Included are actions taken to detect, monitor, and sample hazardous materials using a variety of detection instruments, including combustible gas indicators (CGI) or explosimeter, oxygen monitors, colorimetric tubes, specific chemical monitors, and others. Results from these devices must be analyzed to provide information about the hazardous nature of the material or environment.
43	Hazardous materials spill control and confinement. Included are confining or diking hazardous materials, such as confining the product released to a limited area, the use of absorbents, damming/diking, diversion of liquid runoff, dispersion, retention, or vapor suppression.
44	Hazardous materials leak control and containment. Included are actions taken to keep a material within its container, such as plugging or patching operations, pressure isolation or reduction, solidification, and vacuuming.
45	Remove hazard. Included is neutralizing a hazardous condition without removing the material.
46	Decontaminate persons or equipment. Included are actions taken to prevent the spread of contaminants from the "hot zone" to the "cold zone," including gross, technical, or advanced personal decontamination of victims, emergency responders, and equipment.
47	Decontamination of occupancy or area exposed to hazardous materials.
48	Remove hazardous materials. Included are a broad range of actions taken to remove hazardous materials from a damaged container or contaminated area — for example, offloading or transferring product, controlled burning or product flaring, venting, and overpacking.
40	Mitigate hazardous conditions not able to be classified further.
5	Fire Extinguishment, Rescue, and Hazardous Condition Mitigation Support.
51	Ventilation. Included are nonhazardous odor removal and removal of smoke from nonhazardous materials-related fires.

Table 11.5.2 *Continued*

52	Forcible entry performed by fire service. Included is support to law enforcement.
53	Evacuate area. Removal of civilians from an area determined to be hazardous. Included are actions taken to isolate the contaminated area and/or evacuate those persons affected by a hazardous materials release or potential release.
54	Determine the materials released to be nonhazardous through product identification and environmental monitoring.
55	Establish safe area. Included are isolating the area affected by denying entry to unprotected persons and establishing hazard control zones (hot, warm, cold).
56	Provide air supply.
57	Provide light or electrical power.
58	Operate apparatus or vehicle.
50	Fire extinguishment, rescue, and hazardous condition mitigation support not able to be classified further.
6	Restore Systems or Provide Services.
61	Restore municipal services. Included are turning water back on and notifying the gas company to turn the gas on.
62	Restore sprinkler or fire protection system.
63	Restore fire alarm system. Included is restoring fire alarm systems monitored by the fire service.
64	Shut down system. Included is shutting down water, gas, and fire alarm systems.
65	Secure property. Included are property conservation activities such as covering broken windows or holes in roofs.
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. Included is providing nonmedical assistance to physically disabled, handicapped, or elderly citizens.
72	Assist animal. Included are animal rescue, extrication, removal, or transport.
73	Provide manpower. Included are providing manpower to assist rescue/ambulance units or to lift patients, or providing manpower to assist police.
74	Provide apparatus.
75	Provide equipment, where equipment is used by another agency.
76	Provide water. Included are tanker shuttle operations and pumping in a relay or from a water source. Excluded are normal fire suppression operations.
77	Control crowd. Included is restricting pedestrian access to an area. Excluded is control of vehicles (78).
78	Control traffic. Included are setting up barricades and directing traffic.

Table 11.5.2 *Continued*

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. Included is providing support to incident command activities.
82	Notify other agencies. Included are notifications of utility companies, property owners, and the like.
83	Provide information to the public or media.
84	Refer to proper authorities. Included is turnover of incidents to other authorities or agencies such as the police.
85	Enforce fire code and other codes. Included are response to public complaints and abatement of code violations.
86	Investigate. Included are investigations done on arrival to determine the situation and post-incident investigations. Also included is collecting incident information for incident reporting purposes.
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.
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.

11.6 Method of Extinguishment.

11.6.1 The data element "method of extinguishment" is used to describe the mechanism by which the fire was finally extinguished.

11.6.2 Where the method of extinguishment is to be coded, the coding structure in Table 11.6.2 should be used.

Table 11.6.2 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.

11.7 Fire Service Resources.

11.7.1 The data element "fire service resources" is used to classify the types of emergency response resources used by fire and emergency medical providers. It can also be used to classify specific resources within a department or among cooperators. A fire department might find it useful to collect the number of persons responding with each unit or assigned to work with the unit once it is at the incident. Data on the use of resources to control and handle incidents is important for planning the future allocation of resources and justifying budgets.

11.7.2 Where the fire service resources are to be coded, the coding structure in Table 11.7.2 should be used.

Table 11.7.2 Fire Services Resources Coding Structure

1 Fire Suppression Apparatus.
Included are ground vehicles whose primary purpose is to support the direct suppression of fires.
- 11 Engine.
Included are apparatus with a pump capable of developing fire streams, a water tank, and fire hose.
- 12 Aerial apparatus.
Included are fire apparatus with an aerial ladder or elevating platform and without a pump or with a pump rated at less than 1000 gpm (4000 L/min).
Excluded are aerial apparatus with a pump rated at 1000 gpm (4000 L/min) or greater (13).
- 13 Combination engine/aerial apparatus.
Included are quints and apparatus with an aerial ladder or elevating platform and a pump rated at 1000 gpm (4000 L/min) or more.
Excluded are aerial apparatus with a rated pumping capacity of less than 1000 gpm (4000 L/min) (12).
- 14 Special extinguishing agent apparatus.
Included are apparatus whose primary function is to deliver foam or other special agents rather than water for fire attack.
Excluded are airport rescue fire-fighting vehicles (15) and engines that use special agents only incidentally (11).
- 15 Aircraft rescue fire fighting (ARFF) apparatus.
Included are heavy and light airport crash rescue apparatus designed for quick response to aircraft or similar emergency situations.
- 16 Brush or wildland fire apparatus.
Included are apparatus designed primarily for wildland fire suppression generally with pumping capacity of 250 gpm (1000 L/min) or less.
- 10 Fire suppression apparatus not able to be classified further.

2 Heavy Ground Equipment.
- 21 Dozer.
Included are any tracked vehicles with a blade for exposing mineral soil.
- 22 Tractor-plow.
Included is any vehicle with a plow for exposing mineral soil except a dozer (21).
- 23 Construction equipment.
Included are skiploaders, forklifts, small tractors, and similar equipment.
Excluded are dozers (21) and tractor-plows (22).
- 24 Water tender or tanker.
Included are apparatus that function to transport water to a fire scene for application by other equipment.
Excluded are apparatus with pumping capacity for direct application of the water from the tank (11 through 16).
- 20 Heavy ground equipment not able to be classified further.

3 Aircraft.
- 31 Air tanker.
Included is any fixed-wing aircraft certified as capable of the transport and delivery of water or fire-retardant solutions.
- 32 Helitanker.
Included is any helicopter equipped with a fixed tank or a suspended bucket-type container that is used for aerial delivery of water or fire-retardant solutions.
- 33 Helicopter for transport.
- 30 Aircraft not able to be classified further.

4 Marine Vessels.
- 41 Fire boat.
Included are water-borne vessels with pumping capability.
- 42 Boat.
Included are water-borne air-cushion vessels designed to operate over water, rescue boats, work boats, and boats that have no pumping capability.
Excluded are fire boats with pumping capability (41).
- 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.
- 52 (*This subdivision not used in this edition.*)
- 53 Special extinguishing agent resupply apparatus.
- 54 Equipment transport vehicle.
- 55 Passenger transport vehicle.
- 56 Fuel or maintenance tender.
Included are fuel and maintenance tenders, whether for ground equipment or aircraft.
- 57 Logistical support units.
Included are food service units, shower units, and sanitation units.
- 50 Operations support equipment not able to be classified further.

6 Medical Care or Rescue Apparatus.
- 61 Rescue unit.
- 62 Ambulance.
- 63 Paramedic unit.
- 60 Medical care or rescue apparatus not able to be classified further.

7 Other Suppression Resources.
- 71 Type I hand crew.
Included are full-time organized 20-person hand crews that receive specialized training as a unit in organized wildland fire suppression.
- 72 Type II hand crew.
Included are 20-person hand crews that do not meet the criteria for Type I hand crews.

Table 11.7.2 *Continued*

73	Helitack crew. Included are crews that receive specialized training as a unit in helicopter safety and operations as well as wildland fire suppression.
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. Included are mobile command posts and communication vehicles. Excluded are chief officer vehicles (95).
95	Chief officer vehicle.
98	Privately owned vehicle.
00	Fire service resource type not able to be classified further.
UU	Fire service resource type undetermined or unreported.

11.8 Outside Fire Service Assistance.

11.8.1 The data element "outside fire service assistance" measures the conditions under which fire departments exchange assistance with each other. Information on outside fire service assistance can be used to study response levels necessary to control various fire and emergency situations. It can be used to determine the adequacy of resources at the local level and the need for adjusting cooperative agreements. This data element can also serve as a data control point in regional or state data systems to ensure that the same incident is not counted more than once, while still giving credit to each fire department for the activity it performs. Mutual aid is assistance provided to a fire department upon request by one or more fire departments outside the jurisdiction under an agreement that establishes general guidelines and procedures for providing and receiving assistance between fire departments. Automatic aid is predetermined and preauthorized two-way assistance rendered between fire departments under the terms of a written agreement. Other aid is emergency service provided by a fire department to another jurisdiction or locale that has no fire department.

11.8.2 Where the outside fire assistance is to be coded, the coding structure in Table 11.8.2 should be used.

Table 11.8.2 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 Purpose and Application. The purpose of this chapter is to provide data elements that can be used to describe the characteristics of persons who were involved with the incident being described. The major use of these data elements will be to describe persons who have been injured during an incident, including both civilians and fire fighters. However, they can also be used to describe the characteristics of the following:

(1) Other persons who were associated with the start of an incident, such as incendiarists, persons who have negligently or recklessly started fires, or children playing with matches or lighters
(2) Uninjured persons at the scene of an incident, such as persons who escaped

12.2 Limitations. When these data elements are used to describe the characteristics of groups of persons other than casualties, it will be necessary to establish separate data sets for each of the categories of persons for whom data are sought.

12.3 Discussion. Fire casualty data describes 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 these 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 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.

12.4 Age/Date of Birth.

12.4.1 A person's age is a significant factor in determining the ability of that person to understand the consequences of his or her action and to react appropriately. When available, date of birth provides the most accurate way of specifying age.

12.4.2 Age is recorded using the month, day, and year, in that order. If age is recorded as well, that of persons under 1 year should be denoted as 00.

12.5 Sex. Where the sex is to be coded, the coding structure in Table 12.5 should be used.

Table 12.5 Sex Coding Structure

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

12.6 Race and Origin. Collecting information on race and origin assists in identifying groups that may have high fire loss or injury experience. "Spanish or Hispanic" is not a race according to the U.S. Bureau of the Census. Refer to Ethnicity *(see 12.6.2)* for Hispanic.

12.6.1 Where the race and origin is to be coded, the coding structure in Table 12.6.1 should be used to code data about the race of what the person considers themselves to be.

Table 12.6.1 Race and Origin Coding Structure

1	White.
2	Black.
3	American Indian, Eskimo, Aleut.
4	Asian. Included are Japanese, Chinese, Filipino, Korean, Asian Indian, Vietnamese, Hawaiian, Samoan, and Guamanian.
0	Race not able to be classified further.
U	Race undetermined or not reported.

12.6.2 Ethnicity. Where the ethnicity is to be coded, the coding structure in Table 12.6.2 should be used to code data about the ethnicity of what the persons consider themselves to be.

Table 12.6.2 Ethnicity Coding Structure

1	Hispanic, Spanish, Latino. Included are Mexican, Puerto Rican, and Cuban.
0	Not Hispanic, Spanish, Latino.
U	Ethnicity undetermined or not reported.

12.7 Affiliation.

12.7.1 The data element "affiliation" is used to describe the occupational status of the person as it relates to the incident.

12.7.2 Where the affiliation of a person is to be coded, the coding structure in Table 12.7.2 should be used. If a fire fighter was injured while at home off duty, affiliation should be classified as "civilian."

Table 12.7.2 Affiliation Coding Structure

1	Fire service personnel. Included are fire EMS and military fire service personnel.
2	EMS personnel not fire service.
3	Law enforcement. Included are military police.
4	Other emergency personnel. Included are utility company employees and persons from other city departments working at the scene. Excluded are EMS personnel (2) and police (3).
5	Civilian.
6	Military. Excluded are military fire service personnel (1) and military police (3).
0	Affiliation not able to be classified further.
U	Affiliation undetermined or not reported.

12.8 Relationships.

12.8.1 The data element "relationships" is used to establish the identity of individuals or entities that are included in the report of an incident.

12.8.2 Where the relationship is to be coded, the coding structure in Table 12.8.2 should be used to code data about relationship of a person being described to the incident or casualty.

Table 12.8.2 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.
	67 Reporting party.
	60 Involvement not able to be classified further.
7	Mobile Equipment.
	71 Driver.
	72 Passenger.

Table 12.8.2 *Continued*

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.

12.9 Familiarity with the Incident Area.

12.9.1 The data element "familiarity with the incident area" is used to identify the familiarity of the person with the incident area.

12.9.2 The designations in Table 12.9.2 should be used to code data about the reason for the person's presence at the incident location.

Table 12.9.2 Familiarity with the Incident Area Coding Structure

1	Short-term visitor. Less than one day of association with the property.
2	Long-term visitor. One day or more but less than one week of association with the property. Visitors for more than one week should be classified as seasonal residents or employees.
3	Short-term seasonal resident, employee. One week to one month of association with the property.
4	Long-term seasonal resident, employee. One month or longer association with the property.
5	New permanent resident, employee, student. Less than one month of association with the property.
6	Established permanent resident, employee, student. One month or longer association with the property.
0	Familiarity with incident area not able to be classified further.
U	Familiarity with incident area undetermined or not reported.

12.10 Location of Person with Relation to Point of Origin.

12.10.1 The data element "location of person with relation to point of origin" can be used to designate the location of the person either at the onset of the incident or, in the case of an injury, the location at the time of injury or incapacitation. For example, a person might have been in the room of origin at the onset of the incident but might have been injured or incapacitated in a location outside the room of origin. The data element can be used to assess the potential involvement of a person with the ignition. It can also be used to assess the relationship of an injured person to proximity, material burned, structural integrity, egress, and functions in fire fighting.

12.10.2 The designations in Table 12.10.2 should be used to code data about the location of a person with relation to the point of origin.

Table 12.10.2 Location of Person with Relation to Point of Origin Coding Structure

1	Person intimately involved with ignition. Included are ignition of clothing on a person and ignition of bedding or furniture on which a person is sitting or lying.
2	Person in the room or space of fire origin. Included are vehicle compartments, porches, tents, and playhouses within 50 ft (15 m) of outside fire.
3	Person in same fire division compartment.
4	Person on same floor as origin of fire.
5	Person in same building as origin of fire.
6	Person on property of fire origin. Included are persons outside of a building fire, outside a vehicle, or over 50 ft (15 m) from an outside fire.
7	Person off property of fire origin at time of ignition. Included are fire fighters and emergency service personnel.
0	Location of person with relation to point of origin not able to be classified further.
U	Location of person with relation to point of origin undetermined or not reported.

12.11 Factors Preventing Escape.

12.11.1 The data element "factors preventing escape" is used to describe the most significant factor(s) or condition(s) preventing a person's escape.

12.11.2 The designations in Table 12.11.2 should be used to code data about factors that prevented a person's escape. If more than one factor applies and only one is to be recorded, the most immediate one that was not overcome should be recorded. For example, if a person was incapacitated and encountered a locked door, the incapacity should be coded if it was the first obstacle that was not overcome. However, if the person moved slowly, finally got to the locked door, but was not able to open it, the locked door should be coded since it was the obstacle not overcome. If more than one factor is coded, they should be ranked in order of importance.

Table 12.11.2 Factors Preventing Escape Coding Structure

1	No time to escape; explosion, or fire progressed too rapidly.
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. Included are failures to follow correct (available) escape procedures.
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.

12.12 Mobility of Occupant.

12.12.1 "Mobility of occupant" identifies whether the occupants in the area are mobile, nonmobile, or impaired. "Mobile" is defined as having the ability to move 150 ft (45 m) in 90 seconds unaided. Children under 5 years old, invalids, persons confined to a specific small area, and similar persons are generally nonmobile. Impaired persons include those under the influence of alcohol or drugs whose ability to act is impaired.

12.12.2 The designations in Table 12.12.2 should be used to code the condition of the occupants in a property.

Table 12.12.2 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 Purpose and Application. This chapter presents a means of summarizing the losses that occur as a result of a fire. Losses are measured as the physical damage from the fire to the property, injuries to persons, loss of use of facilities, and financial loss. These data elements can be used to measure direct and indirect property loss and casualties and fatalities to civilians, fire service personnel, and other emergency personnel.

13.2 Limitations. The data elements in this chapter provide summaries of the property and human loss only. Details of these losses should be defined with data elements in other chapters.

13.3 Summary Data. The following data elements summarize the property and human loss resulting from an incident.

13.3.1 Number of Fatalities. It is recommended that the number of fire fighter fatalities be recorded separately from the number of civilian fatalities. Persons who are not fire fighters but who are at the scene in an emergency capacity (such as police, public works employees, or utility company employees) should be included in the civilian fatality count.

13.3.2 Number of Injuries. It is recommended that the number of fire fighter injuries be recorded separately from the number of civilian injuries. Persons who are not fire fighters but who are at the scene in an emergency capacity (such as police, public works employees, or utility company employees) should be included in the civilian injury count.

13.3.3 Number of Persons Assisted. The number of persons assisted in leaving the building by the action of the fire department is an indication of the workload on arrival. This data can be useful in establishing resource dispatch policies as well as developing fire ground operations plans. Assisting persons can include notifying people of a fire in the building and directing them to an exit or physically walking with them to a point clear of the danger. It does not include having to remove the person physically (*see 13.3.4*).

13.3.4 Number of Persons Rescued. The data element "number of persons rescued" records the number of persons who had to be physically removed from the danger area by fire fighters whether by carrying, wheeling a bed or chair the person is confined to, or assisting the person by providing an avenue not normally available (e.g., a ladder or a breached wall). Like the number of persons assisted, this is an indication of the workload on arrival. This data can be useful in establishing resource dispatch policies as well as developing fire ground operations plans.

13.3.5 Number of Persons Made Temporarily Homeless. This is the number of persons who could not reside in their building the night after the fire.

13.3.6 Number of Businesses Made Unusable. This is the number of businesses that could not operate over 60 percent of their facility the first working day following the fire.

13.3.7 Monetary Loss. The data element "monetary loss" measures the monetary loss associated with an incident. When direct fire loss is being measured, the loss should be calculated for replacement on a like-kind-and-quality basis. Direct fire loss includes loss to structures, contents, machinery and equipment, vehicles, and vegetation.

13.3.8 Acres Burned. The data element "acres burned" is used to quantify the area in acres within the fire line perimeter. It is primarily used for wildland fires but can aid other fire departments when fires cover relatively large areas in urban and suburban areas. Area should generally be recorded to the nearest tenth of an acre for fires less than one acre in size, and in whole acres for fires larger than one acre.

13.4 Extent of Damage.

13.4.1 The data element "extent of damage" is used to describe the extent of damage from fire and the effects of the fire and its suppression. The damage could be due to actual flame impingement, smoke and heat scorching, water and other fire extinguishing agent, or physical damage from fire control activities. It is recommended that reporting systems allow for the separate reporting of flame damage, smoke and heat-scorch damage, water and other fire extinguishing agent damage, and physical damage from fire control activities as four separate data elements. "Browned" paper and similar areas scorched by heat but not attacked by flame should be reported as smoke or heat-scorch damage, not fire damage.

13.4.2 The designations in Table 13.4.2 should be used to code the extent of damage. The code that defines the largest area of the structure damaged should be used.

Table 13.4.2 Extent of Damage Coding Structure

1	Confined to the object of origin.
2	Confined to the room or area of origin.
3	Confined to fire division compartment of origin.
4	Confined to the story of origin.
5	Confined to the building of origin.
6	Extended beyond the building of origin.
N	No damage of this type.
U	Extent of damage undetermined or not reported.

Chapter 14 Casualty Data

14.1 Purpose and Application. This chapter provides data elements and the coding structures that can be used to identify information about a person injured or fire service casualties. All civilian and fire fighter injuries or deaths that result when a fire incident occurs should be reported. The use of the data elements or combinations of data elements in this chapter can identify key factors about injuries to both civilians and fire-fighting personnel. In the case of fire-fighting personnel this data can be used to identify the need for additional training, change the department's standard operating procedures, and track information about protective equipment used and any failures of such equipment. Data on civilian injuries can aid in the understanding of what population groups are being affected most by fires, why people are injured, and the extent of various types of injuries.

14.2 Limitations. There are two situations that raise concern when reporting injuries and deaths. The first is the situation of self-annihilation (suicide) and homicides by fire. These should be treated as fire deaths. The second is asphyxiation or illness from a fire that is otherwise a nonhostile fire. These are not fire deaths or injuries.

14.3 Case Severity.

14.3.1 The data element "case severity" is used to describe the overall severity or seriousness of the injury or illness.

14.3.2 The designations in Table 14.3.2 should be used to code data about the severity of the injuries to a person.

Table 14.3.2 Case Severity Coding Structure

1	Minor — The patient is not in danger of death or permanent disability. Immediate medical care is not necessary.
2	Moderate — There is little danger of death or permanent disability. Quick medical care is advisable. This category includes injuries such as fractures or lacerations requiring sutures.
3	Severe — The situation is potentially life threatening if the condition remains uncontrolled. Immediate medical care is necessary even though body processes might still be functioning and vital signs might be normal. For example, when the ambulance arrived, the patient's vital signs were close to normal; however, his respiratory rate was high, and he suffered from chest pain and shortness of breath. The patient's cardiac symptoms indicated a case that was potentially life threatening.
4	Life threat — Death is imminent; body processes and vital signs are not normal. Immediate medical care is necessary. This category includes cases such as severe hemorrhaging, severe multiple trauma, and multiple internal injuries.
5	Death.
8	Case severity not applicable.
U	Case severity undetermined or not reported.

14.4 Apparent Symptom(s).

14.4.1 The data element "apparent symptom(s)" is used to identify the preliminary condition(s) chiefly responsible for the patient's need for emergency medical services. It is anticipated that this information will be determined by the emergency medical technician or other health provider who is primarily responsible for treating the patient during the prehospital emergency phase.

14.4.2* The designations in Table 14.4.2 should be used to code data about the apparent symptom or symptoms if the reporting system allows reporting of more than one.

Table 14.4.2 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.
50	Sickness, other.
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.

(continues)

Table 14.4.2 *Continued*

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.

14.5 Part(s) of Body.

14.5.1 The data element "part(s) of body" describes the part(s) of the body affected by the apparent symptoms. It is recommended that the two data elements [apparent symptom(s) and part(s) of body] be reported as a pair.

14.5.2 The designations in Table 14.5.2 should be used to code data about the part of the body where the symptoms are apparent.

Table 14.5.2 Parts of Body Coding Structure

1	Head.
11	Ear.
12	Eye.
13	Nose.
14	Mouth. Included are lips, teeth, and interior areas of the mouth.
19	Multiple head areas. Excluded are multiple upper parts of the body beyond the head area (91).
10	Head area not able to be classified further.
2	Neck and Shoulders.
21	Neck.
22	Throat.
23	Shoulder.
29	Multiple neck and shoulder areas. Excluded are multiple upper parts of the body beyond the neck and shoulder area (91).
3	Thorax.
31	Back. Excluded is the spine (51).
32	Chest.
39	Multiple thorax areas. Excluded are multiple upper parts of the body beyond the thorax area (91).
30	Thorax area not able to be classified further.
4	Abdominal Area.
41	Abdomen.
42	Pelvis or groin.
43	Hip, lower back, or buttocks.
49	Multiple abdominal areas. Excluded are multiple upper parts of the body beyond the abdominal area (91).
5	Spine.
51	Spine. Excluded is the back (31).

Table 14.5.2 *Continued*

6	Upper Extremities.
61	Arm — upper. Excluded is the elbow (63) or shoulder (23).
62	Arm — lower. Excluded is the elbow (63) or wrist (64).
63	Elbow.
64	Wrist.
65	Hand and fingers.
69	Multiple upper extremity areas. Excluded are multiple upper parts of the body beyond the upper extremities (91).
7	Lower Extremities.
71	Leg — upper. Excluded is the knee (73).
72	Leg — lower. Excluded are the knee (73), ankle (74), and foot and toes (75).
73	Knee.
74	Ankle.
75	Foot and toes.
79	Multiple lower extremity areas. Excluded are multiple lower parts of the body beyond the lower extremities (91).
8	Internal.
81	Trachea and lungs.
82	Heart.
83	Stomach.
84	Intestinal tract.
85	Genitourinary.
89	Multiple internal areas.
80	Internal area not able to be classified further.
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.

14.6 Casualty Type by Situation Found.

14.6.1 The data element "casualty type by situation found" is used to describe the situation or activity at the scene that caused the injuries.

14.6.2 The designations in Table 14.6.2 should be used to code data about the situation that caused injuries.

Table 14.6.2 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).

Table 14.6.2 *Continued*

- 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.
  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.

Table 14.6.2 *Continued*

- 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.
- 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.
- 71 Cancer.
- 72 Cardiac related.
- 73 Disease.
- 74 Mental disorder.
- 75 Seizure.
- 76 Sickness, general.
- 77 Stroke (C.V.A. — cerebral vascular accident).
- 78 Trouble breathing.
  Included are choking and airway obstruction.
- 70 General type sickness related not able to be classified further.

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.

14.7 Human Factors Contributing to Injury.

14.7.1 The data element "human factors contributing to injury" is used to measure the human factors that contributed to the injury, or the condition or apparent condition of a person who was injured in the incident. This is the normal condition that the person would have been in but for this incident. It is recommended that developers of reporting systems allow for the collection of multiples of this field since there can often be more than one human factor involved.

14.7.2 The designations in Table 14.7.2 should be used to code data about human factors that contributed to the injury.

Table 14.7.2 Human Factors Contributing to Injury 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.
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.

14.8 Situational Factors Contributing to Injury.

14.8.1 The data element "situational factors contributing to injury" is used to measure the situational factors that were present that affected a person who was injured in the incident. It is recommended that this data element be used with the data element "Cause of Injury" to supplement the information reported about the cause of the injury.

14.8.2 The designations in Table 14.8.2 should be used to code data about physical factors that contributed to the injury.

Table 14.8.2 Situational Factors Contributing to Injury Coding Structure

1	Egress Problem.
11	Crowd situation, limited exits.
12	Mechanical obstacles to exit.
13	Locked exit or other problem with exit.
14	Excessive travel distance to nearest clear exit.
15	Problem with quick-release burglar or security bar.
16	Permanently locked or installed burglar or security bar, intrusion barrier.
17	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	Chose inappropriate exit route.
33	Reentered building.
34	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.
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.

14.9 Medical Care for Casualty. Three data elements are available for recording the "medical care for the casualty." The data element "affiliation of person providing on-scene treatment" identifies what agency the person providing the treatment is affiliated with. The data element "training level of on-scene treatment provider" identifies the level of medical training the person treating the casualty on the scene has achieved. The third data element, "disposition of casualty," records where the casualty was taken if further treatment or observation was necessary.

14.9.1 Affiliation of Person Providing On-Scene Treatment. The designations in Table 14.9.1 should be used to code data about the affiliation of the persons providing the medical treatment on the scene.

Table 14.9.1 Affiliation of Person Providing On-Scene Treatment 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 person providing on-scene treatment not able to be classified further.
U	Affiliation of person providing on-scene treatment undetermined or not reported.

14.9.2 Training Level of On-Scene Treatment Provider. The designations in Table 14.9.2 should be used to code the level of training for the individual(s) who provided treatment to the casualty on the scene before transport.

Table 14.9.2 Training Level of On-Scene Treatment Provider Coding Structure

1	None.
2	Basic first aid.
3	Advanced first aid.
4	Emergency care attendant. Included are persons trained to at least advanced first aid and have additional training but are not EMTs.
5	Basic emergency medical technician (EMT-1). Included is basic life support.
6	Advanced life support or paramedic qualified to perform body-invasive techniques, defibrillation, and similar procedures. Included are cardiac care technicians.
7	Nurse.
8	Physician's assistant. Included are persons trained to take patient histories, perform simple diagnostic lab tests, initiate basic treatment for common illness, treat emergency cases, give comprehensive physical exams, provide continual care and counseling, and work directly with patients, all under the supervision of a licensed physician.
9	Doctor, physician.
U	Training level of on-scene treatment provider undetermined or not reported.

14.9.3 Disposition of Casualty. The designations in Table 14.9.3 should be used to code data about the disposition of the casualties. If the patient is transported from the scene, the first location where the patient was taken should be reported regardless of where the patient may have been subsequently taken for treatment or rehabilitation. If it is desired to track who is responsible for the transport, see Section 15.10, Patient Transport Services.

Table 14.9.3 Disposition of Casualty Coding Structure

1	Hospital or emergency care facility.
2	*(This subdivision not used in this edition.)*
3	*(This subdivision not used in this edition.)*
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.

14.10 Activity at Time of Injury.

14.10.1 The data element "activity at time of injury" is used to describe the activity of the person at the time he or she was injured.

14.10.2 The designations in Table 14.10.2 should be used to code data about the activity of a person at the time of injury.

Table 14.10.2 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).
5	Return to the vicinity of the 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.

14.11 Regular Fire Service Work Assignment.

14.11.1 The data element "regular fire service work assignment" is for use with reporting fire service casualty data and describes the official assignment of the casualty. This reported assignment might not coincide with the person's activity at the time of the injury. For example, a fire fighter normally assigned to training might be injured on a fire ground where he or she responded to assist at a major emergency. In this case the normal assignment is "training." This data element assists in determining the needs for training, particularly when people are working outside of their regular assignments or on temporary assignments.

14.11.2 The designations in Table 14.11.2 should be used to code data about the regular assignment of the fire fighter.

Table 14.11.2 Regular Fire Service Work Assignment Coding Structure

1	Suppression. Included are fire extinguishment, abatement of hazardous materials releases, rescue, incident command, and safety.
2	Emergency Medical Service (EMS).
3	Fire prevention or inspection.
4	Training.
5	Maintenance.
6	Fire alarm or communications.
7	Administrative duties.
8	Fire investigation.
0	Regular fire service work assignment not able to be classified further.
U	Regular fire service work assignment undetermined or not reported.

14.12 Physical Condition at Time of Injury.

14.12.1 Important to understanding how and why some injuries occur is knowledge of the condition of the casualty prior to the injury.

14.12.2 The designations in Table 14.12.2 should be used to code data about the physical condition of a person at the time of injury.

Table 14.12.2 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.

14.13 Status of Injured Prior to Alarm at Which Injury Occurred.

14.13.1 The data element "status of injured" is 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.

14.13.2 The designations in Table 14.13.2 should be used to code data about the status of the injured person prior to the alarm at which the injury occurred.

Table 14.13.2 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.

14.14 Activity at Time of Fire Service Injury or Accident.

14.14.1 The data element "activity at time of fire service injury or accident" is used to describe the activity being performed by an injured fire fighter at the time the injury occurred. This data is useful when evaluating the effectiveness of training and safety programs.

14.14.2 The designations in Table 14.14.2 should be used to code data about the activity of a fire fighter at the time he or she was injured.

Table 14.14.2 Activity at Time of Fire Service Injury or Accident Coding Structure

1	Driving or Riding on a Vehicle. Included are motor vehicles, aircraft, marine units, and rail vehicles.
	11 Boarding fire department vehicle.
	12 Driving fire department vehicle.
	13 Tillering fire department vehicle.
	14 Riding fire department vehicle.
	15 Getting off fire department vehicle.
	16 Driving/riding non-fire department vehicle.
	17 Getting off 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.
	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.
	51 Carrying ground ladder.
	52 Raising ground ladder.
	53 Lowering ground ladder.
	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.

Table 14.14.2 *Continued*

6	Rescue or EMS.
61	Searching for fire 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.

14.15 Where Fire Service Injury Occurred.

14.15.1 Location During Injury. Two data elements are used to describe the location where the fire fighter was when injured: "general location" and "specific location." In addition, if the injury occurred in or on a structure, it is recommended that the casualty reporting system provide for separately recording the story as above or below grade. These data elements should be used in conjunction with the data element "activity at time of fire service injury or accident" (*see Section 14.14*) to provide a more complete description of how the injury or accident occurred.

14.15.2 General Location Where Injury Occurred. The numbers in Table 14.15.2 should be used to code data about the general location where the fire fighter was when the injury occurred.

Table 14.15.2 General Location Where Injury Occurred Coding Structure

1	En route to fire department location. 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 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.

14.15.3 Specific Location Where Injury Occurred. The numbers in Table 14.15.3 should be used to classify data about the specific location where the fire fighter was when the injury occurred. If the injury occurred in or on a vehicle being used for a fire department activity, it is suggested that information on the type of vehicle involved be reported using the classifications in Section 11.7, Fire Service Resources.

Table 14.15.3 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.

14.16 Cause of Injury.

14.16.1 General. The data element "cause of injury" describes the action or lack of action that directly resulted in the injury to the casualty. It is recommended that this data element be used with the data elements "factor contributing to injury" *(see Section 14.17)* and "object involved in injury" *(see Section 14.18)* to better explain the circumstances under which the injury occurred. When the injury occurred as a result of contact with an object, the manner in which that contact occurred should be described. Separate lists have been developed for use in reporting civilian casualties and fire fighter casualties because reporting of civilian casualties is limited to casualties associated with a fire incident while fire fighter casualties are often reported for all incidents and could be reported for any injury or death whether associated with an incident or not.

14.16.2 Cause of Civilian Injury. The designations in Table 14.16.2 should be used to code data about the cause of the injury to a civilian.

Table 14.16.2 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.

14.16.3 Cause of Fire Fighter Injury. The designations in Table 14.16.3 should be used to code data about the cause of the injury to fire service personnel.

Table 14.16.3 Cause of Fire Fighter 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 (fire fighter 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 fire fighter injury not able to be classified further.
U	Cause of fire fighter injury undetermined or not reported.

14.17 Factor Contributing to Injury.

14.17.1 The data element "factor contributing to injury" describes the factors that contributed to the injury, and provides additional information on how an injury occurred. It is recommended that this data element be used with the data elements "cause of injury" *(see Section 14.16)* and "object involved in injury" *(see Section 14.18)* to better explain the circumstances under which the injury occurred. Analysis of this information could lead to an understanding of the events causing the injury, and allow for planning suitable preventive techniques.

14.17.2 The numbers in Table 14.17.2 should be used to code data about the factors contributing to the injury.

Table 14.17.2 Factor Contributing to Injury Coding Structure

1	Collapse or Falling Object. Included are situations where the collapse or falling object directly related to the injury. Excluded are situations where the collapse trapped or confined the person but did not directly injure the person (31).
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. Excluded are persons directly injured by a structural collapse or falling object (10 series).
32	Lost in building.
33	Operating in confined structural areas. Included are attics and crawl spaces.
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.
5	Slippery or Uneven Surfaces.
51	Icy surface.
52	Wet surface. Included is water, soap, foam, or lubricating materials on the surface.
53	Loose material on surface.
54	Uneven surface. Included are holes in the ground.
50	Slippery or uneven surfaces not able to be classified further.

Table 14.17.2 *Continued*

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	Fire fighter standing on apparatus.
60	Vehicle or apparatus not able to be classified further.
9	Other Contributing Factors.
91	Civil unrest. Included are riots and civil disturbances.
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.

14.18 Object Involved in Injury.

14.18.1 The data element "object involved in injury" provides additional information on how an injury occurred. It is recommended that this data element be used with the data elements "cause of injury" *(see Section 14.16)* and "factor contributing to injury" *(see Section 14.17)* to better explain the circumstances under which the injury occurred. Analysis of this information could lead to an understanding of the events causing the injury, and allow for planning suitable preventive techniques.

14.18.2 The designations in Table 14.18.2 should be used to code data about the object involved in the injury.

14.19 Protective Equipment.

14.19.1 General. The data elements in this section are to be used together to record the failure of protective clothing or equipment being used by fire service personnel when the failure contributed to the injury. Information on protective equipment failures can be used to improve the design of the equipment or to change fire department tactics to bring operations in line with the design limits of the equipment.

14.19.2 Protective Equipment Failure. When protective clothing or equipment fails, the following information should be recorded about that piece of protective equipment in addition to the two data elements, "protective equipment type" *(see 14.19.3)* and "protective equipment problem" *(see 14.19.4)*:

(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

14.19.3 Protective Equipment Type. The designations in Table 14.19.3 should be used to code data about the type of protective equipment worn or used to protect the area of the body injured.

Table 14.18.2 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.
27	Fire department vehicle door. Included are apparatus compartment doors.
28	Station sliding pole.
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.
91	Person: victim.
92	Person: not a victim. Included are other emergency personnel and bystanders.
93	Property and structure contents.
94	Animal.
95	Non-fire department vehicle.
96	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.

Table 14.19.3 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).
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	Fire fighter gloves with wristlets.
52	Fire fighter 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	Self-contained underwater breathing apparatus (SCUBA).
72	Exposure suit.
73	Life preservers.
74	Life belt, ladder belt.
75	Personal alert safety system (PASS).
76	Radio distress device.
77	Personal lighting.
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.

14.19.4 Protective Equipment Problem. The designations in Table 14.19.4 should be used to code data about how the protective equipment performed when the injury occurred.

Table 14.19.4 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. This chapter provides data elements and classifications that can be used to identify the prehospital condition of a person and the care provided by emergency service personnel. Such emergency services personnel can be part of any organized program designed and operated for the purpose of providing emergency medical care to victims at the scene or en route to and at the hospital.

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

(1) Cardiopulmonary Resuscitation (CPR). See 3.3.9.
(2) Defibrillation. See 3.3.18.
(3) Emergency Care Attendant. See 3.3.19.
(4) Emergency Rescue Vehicle. See 3.3.20.
(5) EMS. See 3.3.22.
(6) EMT. See 3.3.23.
(7) Mobile Intensive Care Unit. See 3.3.69.
(8) Paramedic. See 3.3.80.
(9) Physician's Assistant. See 3.3.81.

15.2 Limitations. It is difficult to specify duties of emergency responders because their competencies, training, and legal scope of practice vary so widely [medical doctor, registered nurse, emergency medical technician (EMT), paramedic, and fire fighter]. The level of medical care provided can vary from simple first aid (immobilization, splinting, bandaging, etc.) administered by fire department or rescue personnel to complex, sophisticated medical treatment administered by trained paramedics, nurses, doctors, and others.

15.3 Discussion and Examples. Most of the data elements in this chapter measure patient conditions or treatment that typically should require multiple recording for each incident. For example, the patient's physical condition is often measured throughout the treatment cycle. If a reporting system can accommodate the reporting of only one condition, situation, or action, the most significant one should be reported. Ideally, all changes in patient condition, medical actions taken, or changes in the handling of the patient should be recorded.

15.4 Emergency Medical Responder. Often medical emergencies involve more than one type of unit to complete the emergency medical care. For example, an engine company responds ahead of or in conjunction with an ambulance; further, the ambulance personnel transfers the patient to a helicopter for transport. In each case, it is important to understand the type of unit handling the medical emergency, its affiliation, and the staff training levels so that appropriate resource allocation decisions can be made. The following data elements can be used to identify who responded to the medical emergency and, if desired, to separately identify who transported the patient.

15.4.1 Type of Unit Handling Medical Emergency. The designations in Table 15.4.1 should be used to code data about the type of unit handling the medical emergency.

Table 15.4.1 Type of Unit Handling Medical Emergency Coding Structure

1	Ambulance, rescue unit. Included are units designed to transport patients.
2	Mobile intensive care unit, medic/heart unit. Included are ambulance-type units with space, equipment, supplies, communications, and treatment capabilities necessary for the ill or injured, either on site or during transport.
3	Rescue vehicle. Included are vehicles that are not designed for patient transport, but that contain tools, advanced life support equipment, and personnel capable of extrication and emergency medical care.
4	Fire department apparatus not included in 1, 2, or 3.
5	Air transport unit. Included are helicopters and fixed-wing aircraft.
0	Type of unit handling medical emergency not able to be classified further.
U	Type of unit handling medical emergency undetermined or not reported.

15.4.2 Affiliation of Responder. The designations in Table 15.4.2 should be used to code data about the affiliation of the persons responding to handle the medical emergency.

Table 15.4.2 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.

15.4.3 Responder Medical Training Level. The designations in Table 15.4.3 should be used to code the level of training for the individual(s) who provided patient care.

Table 15.4.3 Responder Medical Training Level Coding Structure

1	None.
2	Basic first aid.
3	Advanced first aid.
4	Emergency care attendant. Included are persons who have been trained to give at least advanced first aid and have additional training but are not EMTs.
5	Basic emergency medical technician (EMT-1). Included is basic life support.

(continues)

Table 15.4.3 *Continued*

6	Advanced life support or paramedic qualified to perform body-invasive techniques, defibrillation, and similar procedures. Included are cardiac care technicians.
7	Nurse.
8	Physician's assistant. Included are persons trained to take patient histories, perform simple diagnostic laboratory tests, initiate basic treatment for common illness, treat emergency cases, give comprehensive physical examinations, provide continual care and counseling, and work directly with patients, all under the supervision of a licensed physician.
9	Doctor, physician.
U	Responder medical training level undetermined or not reported.

15.5 Patient Physical Condition. The condition of a patient's overall health status is generally assessed using a set of key biomedical indicators. In patient care, these indicators are often assessed initially and several times during the treatment. Since these indicators are time dependent, the time should be recorded with each observation.

15.5.1 Lung Sounds. The designations in Table 15.5.1 should be used to code data about the patient's lung sounds.

Table 15.5.1 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.

15.5.2 Lung Sound Location. The designations in Table 15.5.2 should be used to code data about the location where the lung sounds (*see 15.5.1*) are being observed.

15.5.3 Skin Color. The designations in Table 15.5.3 should be used to code data about the color of the patient's skin.

Table 15.5.2 Lung Sound Location Coding Structure

1	Bilaterally equal.
2	Right.
3	Left.
N	None.
U	Lung sound location undetermined or not reported.

Table 15.5.3 Skin Color Coding Structure

1	Normal.
2	Cyanotic.
3	Pale, ashen.
4	Flushed.
U	Skin color undetermined or not reported.

15.5.4 Skin Temperature. The designations in Table 15.5.4 should be used to code data about the temperature of the patient's skin.

15.5.5 Pupil Size. The designations in Table 15.5.5 should be used to code data about the size of a patient's pupils.

Table 15.5.4 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.

Table 15.5.5 Pupil Size Coding Structure

1	Equal.
2	Unequal.
3	Medical or surgical anomaly.
U	Pupil size undetermined or not reported.

15.5.6 Pupil Reactivity. The designations in Table 15.5.6 should be used to code data about the reactivity of a patient's pupils.

15.5.7 Pupil Position. The designations in Table 15.5.7 should be used to code data about the position of a patient's pupils.

Table 15.5.6 Pupil Reactivity Coding Structure

1	Reactive.
2	Not reactive.
U	Pupil reactivity undetermined or not reported.

Table 15.5.7 Pupil Position Coding Structure

1	Midposition.
2	Dilated.
3	Constricted.
U	Pupil position undetermined or not reported.

15.5.8 Pulse Character. The designations in Table 15.5.8 should be used to code data about the pulse character of a patient. This should include both its character and the regularity of the rate.

Table 15.5.8 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.

15.5.9 Respiration Character. The designations in Table 15.5.9 should be used to code data about the respiration characteristics of a patient. This should include both the regularity of the rhythm and its depth, with the respiration rate recorded as the number of breaths per minute.

Table 15.5.9 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.

15.5.10 Patient Status. The designations in Table 15.5.10 should be used to code data about the general state of mental and physiological awareness of the patient.

Table 15.5.10 Patient Status Coding Structure

1	Conscious.
2	Semiconscious.
3	Unconscious.
4	Apparently dead.
U	Patient status undetermined or not reported.

15.5.11 Patient Behavior. The designations in Table 15.5.11 should be used to code data about the general behavior of the patient.

Table 15.5.11 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.

15.6 Cardiac Condition/Assessment. The data element "cardiac condition/assessment" is used to record and code data on the assessment of the cardiac condition of a patient. The designations in Table 15.6 should be used to classify data about the cardiac condition/assessment.

Table 15.6 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).
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.

15.7 Prehospital Care Provided. The data element "prehospital care" defines the care and treatment provided prior to the patient's possible transport to the hospital. The designations in Table 15.7 should be used to code data about the prehospital care provided to a patient.

Table 15.7 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.
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	Prearrival 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.

15.8 Medication. The treatment of patients in the field often involves the administration of drugs and fluids. Both the drug or fluid administered and the medication route should be specified.

15.8.1 Drugs or Fluids Administered. The designations in Table 15.8.1 should be used to code the drug or fluid administered to the patient.

Table 15.8.1 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 (Valium).
07	Diphenhydramine HCl (Benadryl).
08	Dopamine.
09	Epinephrine.
10	Furosemide (Lasix).

Table 15.8.1 *Continued*

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 (Isuprel).
14	Lidocaine HCl.
15	Metaraminol (Aramine).
16	Naloxone (Narcan).
17	Narcotic.
18	Nitroglycerine (NTG).
19	Nitrous oxide (NO_2).
20	Plasmanate.
21	Sodium bicarbonate.
00	Drugs or fluids administered not able to be classified further.
UU	Drugs or fluids administered undetermined or not reported.

15.8.2 Medication Route. The designations in Table 15.8.2 should be used to code the medication route used to administer the drug or fluid to the patient. The medication route should be tied to a specific drug or fluid administered.

Table 15.8.2 Medication Route Coding Structure

01	Endotracheal.
02	Intramuscular.
03	Subcutaneous.
04	Oral.
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.

15.9 Patient Disposition. The data element "patient disposition" indicates the transportation aspects of the emergency medical service run for this patient. The designations in Table 15.9 should be used to code data about the patient disposition.

Table 15.9 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.

15.10 Patient Transport Services.

15.10.1 The data element "patient transport services" is 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. This should be used to record the support needed to transport the patient only, not what it takes to treat the patient prior to transport. This data can support the need to reallocate resources or review the effectiveness of patient transport arrangements in the community.

15.10.2 The designations in Table 15.10.2 should be used to code data about the patient transport services.

Table 15.10.2 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.
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 Purpose and Application. 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. These data elements can be used to account for the utilization of resources, determine the hazard to the public and 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. Other data, such as location of incident and the times that resources are dispatched, used, released, and so forth, will also be needed 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 Title 49, Code of Federal Regulations, Part 173, Subparts C, D, and I.

16.4.3.2 The designations in Table 16.4.3.2 can be used to record the code of the UN hazard class and division of the material.

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 (U.S.)].
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).

(continues)

Table 16.4.3.2 *Continued*

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.

16.4.4 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.

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 should be used to code data about the physical state of a hazardous material.

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.

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 on-scene 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 should be used to code data about the personnel who identified the hazardous material.

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. Excluded are medical doctors (55).

Table 16.4.6.2 *Continued*

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.

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 should be used to code data about the reference material used to identify the hazardous material.

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.

16.4.8 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 should be used to code data about the actions taken by the emergency personnel.

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.

(continues)

Table 16.4.8.2 *Continued*

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. 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 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.

16.5.1.2 The designations in Table 16.5.1.2 should 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 should 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. 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.

Table 16.5.1.2 *Continued*

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.
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.
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).
RBICs 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 should be used to code data about the container's material of construction.

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.

16.5.3 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 should be used to code data about any special features of the container.

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.

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 should 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 should be used to code units of measure.

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.

16.6 Release Information.

16.6.1 Quantity Released. The amount of hazardous material released should be recorded using the common measurement for 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.

16.6.2.1 The extent of release describes the physical scope of confinement or the size of the physical area encompassed by the released material. This information can be useful in regulating the location, use, and transportation of hazardous materials.

16.6.2.2 The designations in Table 16.6.2.2 should be used to code data about the extent of the hazardous material release.

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.

16.6.3 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 should 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.
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 should 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 should 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 should 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).
35	*(This subdivision not used in this edition.)*
36	*(This subdivision not used in this edition.)*
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	*(This subdivision not used in this edition.)*
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	*(This subdivision not used in this edition.)*
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).

(continues)

Table 16.6.5.2 *Continued*

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.
63	*(This subdivision not used in this edition.)*
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 fire-fighting 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 should 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.

Table 16.6.6.2 *Continued*

46	Extreme low temperature.
47	Ice or snow conditions.
48	Lightning.
49	Animal.
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 should 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.
0	Disposition of incident not able to be classified further.
U	Disposition of incident undetermined or not reported.

Chapter 17 Intentionally Set Fires

17.1 Purpose and Application. 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 believed to be intentionally set. This data can be useful in tracking and identifying trends with such fires. Elements that are addressed in other sections of this document may 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 6.8*).

17.2 Case Management.

17.2.1 Agency Referral. In some cases the incident may 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.

17.2.2 Investigation Status. This data element identifies the status of the investigation at the time the report is filed. This information is useful in tracking the closure rate of investigations as well as providing information to other agencies concerning the status of investigations that may be linked to fires they are investigating.

17.2.3 Where data on case status is to be coded, the coding structure in Table 17.2.3 should be used.

Table 17.2.3 Investigation Status Coding Structure

Code	Description
1	Investigation open.
2	Investigation closed.
3	Investigation inactive.
4	Investigation closed with arrest.
5	Closed with exceptional clearance.
U	Case status undetermined or not reported.

17.2.4 Laboratory Used. If a laboratory was used to analyze evidence from a fire scene, it is important to be able to identify that laboratory. This data provides the means for the collection and analysis of all data associated with a specific incident. The name, address, and phone number of the laboratory should also be recorded.

17.2.5 Where data on laboratory used is to be coded, the coding structure in Table 17.2.5 should be used.

Table 17.2.5 Laboratory Used Coding Structure

Code	Description
1	Local.
2	State.
3	ATF.
4	FBI.
5	Other federal laboratory.
6	Private.
N	None.

17.3 Personal Factors.

17.3.1 Suspected Motivation Factors. An analysis of the reasons that motivate persons to intentionally start fires is helpful in developing strategies to prevent such fires.

17.3.2 Where data on suspected motivation factors is to be coded, the coding structure in Table 17.3.2 should be used.

Table 17.3.2 Suspected Motivation Factor Coding Structure

Code	Description
11	Extortion.
12	Labor unrest.
13	Insurance fraud.
14	Intimidation.
15	Void contract/lease.
21	Personal.
22	Hate crime.
23	Institutional.
24	Societal.
31	Protest.
32	Civil unrest.
41	Fireplay/curiosity.
42	Vanity/recognition.
43	Thrills.
44	Attention/sympathy.
45	Sexual excitement.
51	Homicide.
52	Suicide.
53	Domestic violence.
54	Burglary.
61	Homicide concealment.
62	Burglary concealment.
63	Auto theft concealment.
64	Destroy records/evidence.
00	Motivational factor not able to be classified further.
UU	Motivational factor undetermined or not reported.

17.3.3 Apparent Group Involvement. 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 may 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.

17.3.4 Where data on apparent group involvement is to be coded, the coding structure in Table 17.3.4 should be used.

17.4 Incendiary Devices. The data elements in this section are used to track the designs and fuels used in incendiary devices for later analysis and linking of cases.

17.4.1 Incendiary Device Container. The "container type" describes the container used as part of the incendiary device.

17.4.2 Where data on an incendiary device container is to be coded, the coding structure in Table 17.4.2 should be used.

Table 17.3.4 Apparent Group Involvement Coding Structure

Code	Description
1	Terrorist group.
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.
N	None. Acted alone.
0	Apparent group involvement not able to be classified further.
U	Apparent group involvement undetermined or not reported.

Table 17.4.2 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.

17.4.3 Ignition/Delay Device. The "ignition/delay device" describes how the incendiary device was ignited.

17.4.4 Where data on an ignition/delay device is to be coded, the coding structure in Table 17.4.4 should be used.

Table 17.4.4 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.

17.4.5 Incendiary Device Fuel. The data element "incendiary device fuel" describes the type of fuel used in the incendiary device.

17.4.6 Where data on the incendiary device fuel is to be coded, the coding structure in Table 17.4.6 should be used.

Table 17.4.6 Incendiary Device Fuel Coding Structure

Code	Description
11	Ordinary combustibles.
12	Flammable gas.
14	Ignitible liquid.
15	Ignitible 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 Scene Information.

17.5.1 Availability of Material Ignited. Understanding firesetting methods and trends can assist in the development of prevention and intervention strategies.

17.5.2 Where data on availability of material ignited is to be coded, the coding structure in Table 17.5.2 should be used.

Table 17.5.2 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.

17.5.3 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.

17.5.4 Where data on entry method is to be coded, the coding structure in Table 17.5.4 should be used.

17.5.5 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.

17.5.6 Where data on property security is to be coded, the coding structure in Table 17.5.6 should be used.

Table 17.5.4 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	Hid in/on premises.
00	Entry method not able to be classified further.
UU	Entry method undetermined or not reported.

Table 17.5.6 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.

17.5.7 Other Investigative Factors. Other investigative information pertinent to the case that could be useful to the investigator may include circumstances surrounding the investigation.

17.5.8 Where data on other investigative factors is to be coded, the coding structure in Table 17.5.8 should be used.

Table 17.5.8 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.

(continues)

Table 17.5.8 *Continued*

Code	Description
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.

17.6 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 12.4)*, sex *(see Section 12.5)*, and race and origin *(see Section 12.6)*.

17.6.1 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.

17.6.2 Where data on family type is to be coded, the coding structure in Table 17.6.2 should be used.

Table 17.6.2 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.

17.6.3 Motivation/Risk Factors. This data element describes the stimulus or risk factors that were present and constituted a possible motivation for the subject(s) to burn, or attempt to burn, any real or personal property. This information is particularly useful in tracking juvenile firesetting trends and in developing prevention and intervention strategies.

17.6.4 Where data on motivation/risk factors is to be coded, the coding structure in Table 17.6.4 should be used.

17.6.5 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.

17.6.6 Where data on disposition of juvenile firesetter is to be coded, the coding structure in Table 17.6.6 should be used.

Table 17.6.4 Motivation/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.

Table 17.6.6 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 recommendations 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.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.

A.3.3.24 Explosion. Typical combustion processes include ignition and burning of combustible gas, dust, or flammable vapor mixture. These are technically "fires." Typical overpressure conditions include steam pressure, chemical reactions, and compressed gas container rupture. These are technically not "fires."

A.3.3.26 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.3.3.35 Fire Damage. Damage from smoke, water, backfires, construction of firebreaks, and fire control are all aspects of fire damage.

A.3.3.37 Fire Division Compartment. Large buildings often contain many fire division compartments, each containing many rooms.

A.3.3.43 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.3.3.49 Gas. Gasoline is a liquid, not a gas.

A.3.3.55 Hostile Fire. Fire does not include the following, except where they cause fire or occur as a consequence of fire:

(1) Lightning or electrical discharge
(2) Rupture of a steam boiler, hot water tank, or other pressure vessel due to internal pressure and not to internal combustion
(3) Explosion of munitions or other detonating material
(4) Accident involving ship, aircraft, or other vehicle
(5) Overheat condition

A.3.3.59 Incident. "Walk-ins" treated at the station should be recorded as an incident. An incident may have more than one response. A rekindle is a separate incident.

A.3.3.62 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.3.3.63 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.3.3.75 Occupancy. The specific property use as it pertains to a building is the occupancy.

A.3.3.76 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 storeroom (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.3.3.84 Property. Specific (fixed) property refers to those things that make up the earth's surface — that is, water, land, roadways, structures, and buildings. Mobile property refers to those things that normally move in relation to the earth's surface — that is, ships, airplanes, trains, trucks, and automobiles.

A.3.3.85 Property Inventory. The knowledge available from a property inventory is in two parts: that which is general in character and has to do with external features (such as location, water supply, and construction), and that which is specific in character relating to internal features (such as interior finish, vertical openings, or suppression systems).

A.3.3.86 Property Use. A building, for example, could serve as a garage or a hospital or a department store. The use of property does not define any of the other important fire-related details of a property, such as access, ownership, size, internal weaknesses in fire defense, or construction.

A.3.3.87 Rekindle. Fire service response to a rekindle should be treated as a separate incident.

A.3.3.90 Room. The walls that define a room may be fire rated and impede fire spread or not fire rated (for example, mesh screen), which may impede exiting of personnel.

A.3.3.91 Scorch. When scorching is occurring, removal of the heat source will stop the destruction.

A.3.3.97 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.3.3.98 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.3.3.103 Wildland Fire. A prescribed fire is not a wildland fire.

A.6.5.3 The following alphabetical list is based on the logic and definitions presented in 6.5.3 for general property use. It is designed to assist a user in selecting the proper classification for general property use. A person using this list should review the classification assigned in 6.5.3 to ensure that there are no qualifications on the definition of the term.

81 Agricultural product storage
65 Agricultural use
97 Air transportation use
97 Airport
84 Alcoholic beverage storage
34 Ambulatory health care
11 Amusement park
42 Apartment
15 Archival use
63 Armory
12 Athletic facility
12 Ballpark
72 Beverage industry
45 Board and care — residential
59 Business use
58 Business with residential use
11 Campsite: improved
31 Care of handicapped with 24-hour nursing staff
32 Care of handicapped without 24-hour nursing staff
14 Casino
13 Cemetery
86 Chemical product storage
86 Chemical storage
52 Cleaner
14 Club
22 College
64 Communication use
42 Condominium — residential
92 Construction site
36 Correctional use
14 Country club
15 Court
64 Data processing center
63 Defense use
92 Demolition site
51 Department store in enclosed mall
36 Detention use

16 Drinking establishment
18 Drive-in theater
41 Dwelling
21 Education through secondary level
12 Exhibition use
65 Farm use
71 Food industry
16 Food service use
83 Food storage, processed
74 Footwear industry
13 Funeral use
76 Furniture industry
14 Golf club
59 Government office use (not military)
11 Government park
43 Group living use
31 Handicapped care with 24-hour nursing staff
32 Handicapped care without 24-hour nursing staff
34 Health care — ambulatory
32 Health care — limited
31 Health care — nursing
96 Highway
15 Historic use
33 Hospital
44 Hotel
66 Indian reservation
44 Inn
15 Judicial use
62 Laboratory
74 Leather industry
15 Legislative use
15 Library
65 Livestock production
93 Local forest
44 Lodge
52 Maintenance use
94 Marina
33 Medical care use
14 Men's club
33 Mental institution
77 Metal industry
87 Metal product storage
77 Metal products industry
87 Metal storage
63 Military reservation
67 Mine, quarry
47 Mobile home park
44 Motel
96 Motor vehicle transportation use
42 Multi-family residential use
15 Museum
93 National forest
31 Nursing care
59 Office
72 Oil industry, essential
41 One- and two-family residential use
65 Orchards
76 Paper industry
85 Paper product storage
11 Park
45 Personal care
84 Petroleum products storage
86 Plastic product storage
86 Plastic storage
61 Power production, distribution
21 Primary level education use
76 Printing industry
36 Prison
83 Processed food storage
92 Property undergoing transformation
98 Property with no apparent use
11 Public recreation use
67 Quarry
12 Racetrack
95 Railroad use
11 Recreation park
91 Refuse disposal
13 Religious use
62 Research facility
45 Residential board and care
48 Residential with business use
42 Residential: multi-family
41 Residential: single- or two-family
16 Restaurant
96 Road
51 Row of stores
74 Rubber industry
21 School through secondary level
21 Secondary level education use
52 Service use
53 Shopping center: enclosed
12 Sports garden
12 Stadium
93 State forest
53 Store in enclosed mall
51 Store in strip mall
96 Street
18 Studio
14 Tennis club
73 Textile industry
82 Textile storage
18 Theater
68 Timberland
72 Tobacco industry
83 Tobacco storage
68 Tree farms
22 University
78 Vehicle assembly, manufacture
88 Vehicle storage
94 Water
94 Waterfront
74 Wearing apparel industry
93 Wildland
14 Women's club
75 Wood industry
85 Wood storage
11 Zoo

A.6.6.5 The following alphabetical list is based on the logic and definitions presented in 6.6.5 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 6.6.5 to ensure that there are no qualifications on the definition of the term.

711 Abattoir
687 Abrasives plant
742 Academic robe mfg
221 Academy: boarding
142 Academy: riding
761 Acetylene gas mfg
761 Acid plant
764 Acrilan fiber mfg
776 Adding machine mfg
595 Addressing firm
765 Adhesive mfg
591 Administrative office
799 Advertising display mfg
754 Advertising sign mfg
774 Aerial cableway mfg
928 Aerial tramway
791 Aeronautical instrument mfg
311 Aged persons with 24-hour nursing staff
Aged: personal care of (see division 25, 311, and 459)
773 Agricultural fork mfg
626 Agricultural laboratory
774 Agricultural machine mfg
812 Agricultural products: boxed
813 Agricultural products: loose
818 Agricultural supply storage
774 Agricultural tractor mfg
774 Air compressor mfg
774 Air condition mchry mfg
776 Air conditioner mfg: unit type
591 Air Force office
925 Air raid shelter
761 Air reduction
773 Air rifle mfg
786 Aircraft assembly, mfg, repair
894 Aircraft freight terminal
886 Aircraft hangar
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
322 Alcohol abuse center — limited care
Alcohol abusers: personal care of (see 322 and 459)
721 Alcohol beverage distillery
721 Alcohol distilling: industrial
721 Alcohol plant
846 Alcoholic beverage storage
723 Ale mfg
846 Ale storage
715 Alfalfa mill
761 Alkali mfg
111 Alley: bowling
758 Almanac publishing, printing
524 Alteration shop: garment
772 Aluminum casting

773 Aluminum hollowware mfg
772 Aluminum refining
773 Aluminum stamping
772 Aluminum wire drawing
784 Ambulance mfg, assembly
Ambulatory care (see 341–343)
761 Ammonia synthesis
761 Ammonium nitrate plant
864 Ammonium nitrate storage
762 Ammunition mfg
552 Ammunition sales
123 Amphitheater
113 Amusement hall, place, booth
773 Anchor mfg
942 Anchorage
791 Anesthetic machine mfg
556 Animal care center
833 Animal feed storage: processed
813 Animal feed storage: unprocessed
719 Animal food preparation
715 Animal food, stock dry feed
556 Animal hospital
719 Animal medicine preparing
726 Animal oil refinery: nonedible
556 Animal shop, supplies
663 Animal trapping, hunting
531 Antique shop
429 Apartment
651 Apiary
655 Apple growing
776 Appliance assembling: elec
532 Appliance repair with sales
538 Appliance repair without sales
776 Appliance repair: elec with mfg
532 Appliance store
742 Apron mfg
152 Aquarium
594 Architect's office
123 Arena: sports
761 Argon gas mfg
591 Armed forces office
784 Armored car mfg, assembly
122 Armory hall
582 Army and Navy store
591 Army office
677 Arsenic mining, quarrying
779 Arsenic processing
152 Art gallery, incl sales
233 Art school
761 Artificial color mfg: food
742 Artificial flower mfg
738 Artificial leather mfg
791 Artificial limb mfg
761 Artificial manure mfg
799 Artist brush mfg
765 Artist color mfg
799 Artist material mfg, excl paint
765 Artist paint mfg
563 Artist supply sales
688 Asbestos concrete product mfg
688 Asbestos fiber working
678 Asbestos mining, quarrying
688 Asbestos products plant
767 Asphalt mfg
678 Asphalt mining, quarrying
774 Asphalt road machine mfg
768 Asphalt-impregnated paper mfg
459 Assisted-living facility
591 Association office
122 Athletic cage
742 Athletic clothing mfg
449 Athletic club with sleeping
141 Athletic club without sleeping
981 Athletic field construction
798 Athletic goods mfg
758 Atlas mfg
611 Atomic fission, fusion materials mfg
531 Auction house
591 Auditor's office
182 Auditorium
161 Automat
795 Automatic piano mfg
784 Automobile accessory mfg
575 Automobile accessory sales
873 Automobile accessory storage
784 Automobile assembly plant
573 Automobile body repairing, painting
882 Automobile dealer vehicle storage
571 Automobile filling station
965 Automobile lot: sales
573 Automobile muffler shop
784 Automobile parts mfg
873 Automobile parts storage
573 Automobile repair shop
574 Automobile salesroom
877 Automobile salvage, wrecking
573 Automobile seat cover shop
575 Automobile supply store
575 Automobile tire store
573 Automobile top shop
922 Automobile tunnel
578 Automobile washing
231 Automotive school
743 Awning mfg
526 Awning store
925 Awning, canopy
773 Axe mfg
785 Axle mfg: cycle
784 Axle mfg: motor vehicle
743 Baby blanket mfg
787 Baby carriage mfg
742 Baby clothes mfg
713 Baby food mfg: homogenized
712 Baby food mfg: milk base
711 Bacon curing
799 Badge mfg
773 Bag clasp mfg: base metal
743 Bag mfg: burlap
746 Bag mfg: leather
754 Bagatelle board mfg
892 Bagged mineral products storage
737 Bagging cord plant
716 Bakery
513 Bakery sales
719 Baking powder mfg
824 Bale storage: jute, hemp, sisal fiber
823 Bale storage: silk, synthetic fiber
822 Bale storage: wool, worsted
821 Baled cotton storage
812 Baled hay outside
855 Baled paper storage
774 Ball bearing mfg
747 Ball mfg: rubber or synthetic
123 Ballpark
799 Ballpoint pen mfg
121 Ballroom
753 Bamboo products mfg
592 Bank
754 Bank furniture mfg
591 Bank: office only
758 Banknote printing
743 Banner mfg
754 Bar furniture mfg
163 Bar: alcoholic beverage
557 Barber shop
561 Barber supplies store
781 Barge building, repairing
715 Barley milling, rolling
815 Barn
464 Barrack
753 Barrel plant: wood
751 Barrel stave mfg
751 Barrelhead mfg
677 Barytes mining, quarrying
761 Barytes processing
773 Base metal cold pressing
753 Basket mfg
686 Batch plant: concrete or cement
116 Bathhouse
937 Bathing beach
747 Bathing cap mfg
771 Bathtub mfg: cast iron
764 Bathtub mfg: plastic
747 Battery case mfg
776 Battery mfg
739 Batting mill
672 Bauxite mine, quarry
772 Bauxite processing
773 Bayonet mfg
937 Beach
142 Beach club
715 Bean grinding, splitting
811 Bean storage: bulk
774 Bearing mfg: roller, ball, needle
557 Beauty shop
754 Bedding plant
743 Bedspread mfg
651 Bee raising
723 Beer mfg
163 Beer parlor
846 Beer storage
742 Belt mfg, excl leather
746 Belt mfg: leather
747 Belting mfg: rubber or synthetic
744 Belting plant: canvas
732 Belting plant: cloth

744 Belting: leather tannery
767 Benzene mfg
141 Bet-taking shop
723 Beverage mfg: beer
724 Beverage mfg: nonalcoholic
721 Beverage mfg: spirits
722 Beverage mfg: wines
846 Beverage storage: alcoholic
832 Beverage storage: soft drink
514 Beverage store
785 Bicycle assembly and repair
552 Bicycle sales and repair
871 Billet storage
112 Billiard center
754 Billiard table mfg
774 Binder machine mfg
758 Binder mfg: paper, cardboard
758 Bindery, book
113 Bingo hall
792 Binocular mfg
548 Binocular sales
621 Biological laboratory
719 Birdseed mixing
716 Biscuit mfg
674 Bituminous sand operation
773 Blacksmith shop
758 Blank book mfg
776 Blanket mfg: elec
743 Blanket mfg: nonelec
771 Blast furnace
762 Blasting agent mfg
761 Bleach mfg
123 Bleachers for seating
735 Bleaching plant
726 Blended table oil mfg
776 Blender mfg: elec, kitchen
754 Blind mfg
742 Blouse mfg
763 Blowmolding plastics
595 Blueprint firm
459 Board and care: residential
311 Boarding care with 24-hour nursing staff
439 Boarding house
449 Boarding house: over 16 roomers
221 Boarding school classroom bldg
576 Boat accessory sales
782 Boat mfg: 65 ft (20 m) and under
885 Boat mooring, docking
782 Boat repair: no sales
576 Boat sales
885 Boat storage
885 Boathouse
143 Boating club
782 Boatyard: vessels 65 ft (20 m) and under
753 Bobbin mfg
785 Body mfg: cycle
784 Body mfg: motor vehicle
573 Body repair shop: motor vehicle
672 Bog ore mining, quarrying
717 Boiled sweets mfg
688 Boiler gasket mfg
614 Boiler house
771 Boiler mfg: cast iron
781 Boiler mfg: marine
688 Boiler packing mfg: asbestos
774 Boilerhouse machine mfg
773 Bolt mfg: metal
612 Bomb assembly: nuclear
773 Bomb case mfg
762 Bomb filling
925 Bomb shelter
726 Bone oil refining
799 Bone products mfg
719 Bone scraping, crushing
758 Book bronzing, gilding, edging
758 Book mfg: blank
758 Book publishing, printing
758 Book repair
758 Bookbinding
774 Bookbinding machine mfg
141 Bookmaker place: gambling
541 Bookstore: new, used
741 Boot mfg, excl vulcanized rubber
747 Boot mfg: vulcanized rubber
523 Boot repair
753 Boot tree mfg
523 Bootblack stand
924 Booth: toll
732 Bootlace mfg: braided cotton
733 Bootlace mfg: braided wool
734 Bootlace mfg: braided, mixed fibers
677 Borate minerals mining, quarrying
761 Borate minerals processing
774 Boring machine mfg
756 Bottle cap seal mfg
683 Bottle plant
683 Bottle stopper, glass mfg
832 Bottled food product storage
774 Bottling mchry mfg
724 Bottling plant
753 Bowl mfg: wood
111 Bowling establishment
552 Bowling shop
773 Box mfg: metal
756 Box mfg: paper
753 Box mfg: wood
141 Boys' club
742 Brace suspender mfg
732 Braid mfg: cotton
734 Braid mfg: mixed fibers
733 Braid mfg: wool or worsted
737 Braided cord mfg
688 Brake lining mfg
785 Brake mfg: cycle
784 Brake mfg: motor vehicle
721 Brandy mfg
773 Brass hollowware
772 Brass refining
773 Brass stamping
772 Brass wire drawing
742 Brassiere mfg
716 Bread mfg
715 Breakfast food mfg
723 Brewery
774 Brick making machine mfg
682 Brick mfg: glass
681 Brick mfg: heat resisting
681 Brick plant: nonglass
921 Bridge
676 Brine pit
768 Briquette mfg
895 Briquette storage
773 Bronze hollowware
772 Bronze refining
773 Bronze stamping
772 Bronze wire drawing
799 Broom mfg
931 Brush growth outdoors
799 Brush mfg
773 Bucket mfg: metal
753 Bucket mfg: wood
773 Buckle mfg: base metal
794 Buckle mfg: precious metal
851 Builders' supply warehouse
688 Building face stoneworks
752 Building mfg: portable wooden
755 Building paper mfg: fiber
751 Building products mfg: wood
555 Building supply store
835 Bulk coolers
833 Bulk food stuffs
843 Bulk LP-Gas plant
839 Bulk molasses
841 Bulk plant: petroleum
774 Bulldozer mfg
753 Bung mfg
464 Bunkhouse
753 Buoy mfg: cork
743 Burlap bag mfg
824 Burlap storage, bales, bags
784 Bus mfg, assembly
883 Bus parking
574 Bus sales
925 Bus stop shelter
173 Bus terminal
232 Business school: commercial
712 Butter mfg
835 Butter storage
799 Button mfg
116 Cabana
754 Cabinet shop
774 Cable car mfg
775 Cable mfg: insulated electric
634 Cable terminal: telephone
634 Cable: telephone, telegraph
161 Café
161 Cafeteria
122 Cage: athletic
716 Cake mfg
719 Cake mix mfg
776 Calculating machine mfg
792 Camera equipment plant
792 Camera mfg
553 Camera store
784 Camping trailer mfg
935 Campsite with utilities
773 Can mfg: metal
726 Candle mfg
726 Candle plant
717 Candy mfg
513 Candy shop
753 Cane container, products mfg
717 Cane processing (sugar or beet)