

NFPA[®]

170

**Standard for Fire Safety
and Emergency Symbols**

2018



All **NFPA** STANDARDS

 **EDUFIRE_NFPA**

 **EDUFIRE.IR**

FREE
2019



Contents

| | | | |
|---|---------------|---|---------------|
| Chapter 1 Administration | 170-5 | 8.2 Symbols for Control Panels. | 170-29 |
| 1.1 Scope. | 170-5 | 8.3 Symbols for Fire Alarms, Detection, and Related Equipment — Signal Initiating Devices and Activation Switches. | 170-30 |
| 1.2 Purpose. | 170-5 | 8.4 Notification Appliances. | 170-32 |
| 1.3 Retroactivity. | 170-5 | 8.5 Related Equipment. | 170-33 |
| 1.4 Equivalency. | 170-5 | 8.6 Symbols for Smoke/Pressurization Control. | 170-34 |
| 1.5 Units. | 170-5 | | |
| Chapter 2 Referenced Publications | 170-5 | Chapter 9 Symbols for Use in Pre-Incident Planning Sketches | 170-34 |
| 2.1 General. | 170-5 | 9.1 Introduction. | 170-34 |
| 2.2 NFPA Publications. | 170-5 | 9.2 Access Features, Assessment Features, Ventilation Features, and Utility Shutoffs. | 170-34 |
| 2.3 Other Publications. | 170-5 | 9.3 Detection/Extinguishing Equipment. | 170-34 |
| 2.4 References for Extracts in Mandatory Sections. | 170-6 | 9.4 Water Flow Control Valves and Water Sources. . | 170-34 |
| Chapter 3 Definitions | 170-6 | 9.5 Equipment Rooms. | 170-34 |
| 3.1 General. | 170-6 | 9.6 Identification of Hazardous Materials. | 170-34 |
| 3.2 NFPA Official Definitions. | 170-6 | | |
| 3.3 General Definitions. | 170-6 | Chapter 10 Symbology for Emergency Management Mapping | 170-37 |
| Chapter 4 Symbols for General Use | 170-7 | 10.1 Damage Operational Symbols. | 170-37 |
| 4.1 Introduction. | 170-7 | 10.2 Operations Symbology. | 170-37 |
| 4.2 Symbols for General Use. | 170-7 | 10.3 Incidents Symbology. | 170-37 |
| 4.3 Class of Fire Symbols. | 170-7 | 10.4 Natural Events Symbology. | 170-37 |
| Chapter 5 Symbols for Use by the Fire Service | 170-14 | 10.5 Infrastructures Symbology. | 170-37 |
| 5.1 Introduction. | 170-14 | Chapter 11 Emergency Evacuation Diagrams and Plans | 170-57 |
| 5.2 Symbols for Use by the Fire Service. | 170-14 | 11.1 Introduction. | 170-57 |
| 5.3 Fire Apparatus Safety Symbols. | 170-14 | 11.2 Composition. | 170-57 |
| Chapter 6 Symbols for Use in Architectural and Engineering Drawings and Insurance Diagrams | 170-18 | 11.3 Orientation. | 170-57 |
| 6.1 Introduction. | 170-18 | 11.4 Information Shown. | 170-57 |
| 6.2 Symbols for Site Features. | 170-18 | 11.5 Construction. | 170-57 |
| 6.3 Symbols for Building Construction. | 170-18 | Annex A Explanatory Material | 170-57 |
| Chapter 7 Symbols for Use in Water Supply, Extinguishing, and Sprinkler System Drawings and Insurance Diagrams | 170-21 | Annex B Additional Explanatory Information on Chapters 1 Through 6 | 170-62 |
| 7.1 Introduction. | 170-21 | Annex C Emergency Responder Map | 170-66 |
| 7.2 Water Supply and Distribution Symbols. | 170-21 | Annex D Fire Fighter Safety Building Marking System | 170-69 |
| 7.3 Reserved. | 170-21 | Annex E Informational References | 170-70 |
| 7.4 Symbols Related to Means of Egress. | 170-21 | Index | 170-72 |
| 7.5 Indicating Appliances. | 170-21 | | |
| 7.6 Symbols for Fire Extinguishing Systems. | 170-21 | | |
| 7.7 Symbols for Portable Fire Extinguishers. | 170-21 | | |
| 7.8 Symbols for Fire-Fighting Equipment. | 170-21 | | |
| 7.9 Miscellaneous Symbols. | 170-21 | | |
| Chapter 8 Symbols for Use in Electronic Fire and Smoke Detection and Notification System Drawings and Insurance Diagrams | 170-29 | | |
| 8.1 Introduction. | 170-29 | | |

NFPA 170

Standard for

Fire Safety and Emergency Symbols

2018 Edition

IMPORTANT NOTE: This NFPA document is made available for use subject to important notices and legal disclaimers. These notices and disclaimers appear in all publications containing this document and may be found under the heading “Important Notices and Disclaimers Concerning NFPA Standards.” They can also be viewed at www.nfpa.org/disclaimers or obtained on request from NFPA.

UPDATES, ALERTS, AND FUTURE EDITIONS: New editions of NFPA codes, standards, recommended practices, and guides (i.e., NFPA Standards) are released on scheduled revision cycles. This edition may be superseded by a later one, or it may be amended outside of its scheduled revision cycle through the issuance of Tentative Interim Amendments (TIAs). An official NFPA Standard at any point in time consists of the current edition of the document, together with all TIAs and Errata in effect. To verify that this document is the current edition or to determine if it has been amended by TIAs or Errata, please consult the National Fire Codes® Subscription Service or the “List of NFPA Codes & Standards” at www.nfpa.org/docinfo. In addition to TIAs and Errata, the document information pages also include the option to sign up for alerts for individual documents and to be involved in the development of the next edition.

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 mandatory sections of the document are given in Chapter 2 and those for extracts in informational sections are given in Annex E. Extracted text may be edited for consistency and style and may include the revision of internal paragraph references and other references as appropriate. Requests for interpretations or revisions of extracted text shall be sent to the technical committee responsible for the source document.

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

Chapter 1 Administration

1.1 Scope. This standard presents symbols used for fire safety, emergency, and associated hazards.

1.2 Purpose. The purpose of this standard is to standardize the symbols used in representing fire safety, emergency, and associated hazards.

1.3 Retroactivity. The provisions of this standard reflect a consensus of what is necessary to provide an acceptable degree of protection from the hazards addressed in this standard at the time the standard was issued.

1.3.1 Unless otherwise specified, the provisions of this standard shall not apply to facilities, equipment, structures, or installations that existed or were approved for construction or installation prior to the effective date of the standard. Where specified, the provisions of this standard shall be retroactive.

1.3.2 In those cases where the authority having jurisdiction determines that the existing situation presents an unacceptable degree of risk, the authority having jurisdiction shall be permitted to apply retroactively any portions of this standard deemed appropriate.

1.3.3 The retroactive requirements of this standard shall be permitted to be modified if their application clearly would be impractical in the judgment of the authority having jurisdiction, and only where it is clearly evident that a reasonable degree of safety is provided.

1.4 Equivalency. Nothing in this standard is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety over those prescribed by this standard.

1.4.1 Technical documentation shall be submitted to the authority having jurisdiction to demonstrate equivalency.

1.4.2 The system, method, or device shall be approved for the intended purpose by the authority having jurisdiction.

1.5 Units. Metric units of measurement used in this standard shall be in accordance with the International System of Units (SI). One unit (liter), outside of but recognized by SI, is commonly used in international fire protection. For conversion factors, see Table 1.5.

Table 1.5 Metric Conversion Factors

| Name of Unit | Unit Symbol | Conversion Factor |
|-----------------|-----------------|-------------------------------|
| Liter | L | 1 gal = 3.785 L |
| Cubic decimeter | dm ³ | 1 gal = 3.785 dm ³ |
| Pascal | Pa | 1 psi = 6894.757 Pa |
| Meter | m | 1 ft = 0.3048 m |
| Millimeter | mm | 1 in. = 25.4 mm |

Chapter 2 Referenced Publications

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

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

NFPA 101®, *Life Safety Code*®, 2015 edition.

NFPA 704, *Standard System for the Identification of the Hazards of Materials for Emergency Response*, 2017 edition.

2.3 Other Publications.

2.3.1 ANSI Publications. American National Standards Institute, Inc., 25 West 43rd Street, 4th Floor, New York, NY 10036.

ICC/ANSI A117.1, *Accessible and Usable Buildings and Facilities*, 2009.

ANSI Z535.1, *Safety Color Code*, 2011.

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

ASTM E2072, *Standard Specification for Photoluminescent (Phosphorescent) Safety Markings*.

ASTM E2073, *Standard Test Method for Photopic Luminance of Photoluminescent (Phosphorescent) Markings*.

2.3.3 FAMA Publications. Fire Apparatus Manufacturers Association, P.O. Box 397, Lynnfield, MA 01940.

FAMA TC00, *Graphical Symbols for Automotive Fire Apparatus*, 2014-10.

FAMA TC010, *Standard Product Safety Sign Catalog for Automotive Fire Apparatus*, 2012.

2.3.4 NECA Publications. National Electrical Contractors Association, 3 Bethesda Metro Center, Suite 1100, Bethesda, MD 20814.

NECA NEIS 100, *Symbols for Electrical Construction Drawings*, 2013.

2.3.5 UL Publications. Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.

UL 924, *Standard for Emergency Lighting and Power Equipment*, 2006.

ANSI/UL 1994, *Standard for Luminous Egress Path Marking Systems*.

2.3.6 Other Publications.

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

2.4 References for Extracts in Mandatory Sections.

NFPA 10, *Standard for Portable Fire Extinguishers*, 2017 edition.

Chapter 3 Definitions

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

3.2 NFPA Official Definitions.

3.2.1 Approved. Acceptable to the authority having jurisdiction.

3.2.2* Authority Having Jurisdiction (AHJ). An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

3.2.3 Labeled. Equipment or materials to which has been attached a label, symbol, or other identifying mark of an organization that is acceptable to the authority having jurisdiction

and concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials, and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.

3.2.4* Listed. Equipment, materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equipment, material, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose.

3.2.5 Shall. Indicates a mandatory requirement.

3.2.6 Should. Indicates a recommendation or that which is advised but not required.

3.2.7 Standard. An NFPA Standard, the main text of which contains only mandatory provisions using the word "shall" to indicate requirements and that is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions are not to be considered a part of the requirements of a standard and shall be located in an appendix, annex, footnote, informational note, or other means as permitted in the NFPA Manuals of Style. When used in a generic sense, such as in the phrase "standards development process" or "standards development activities," the term "standards" includes all NFPA Standards, including Codes, Standards, Recommended Practices, and Guides.

3.3 General Definitions.

3.3.1 Photoluminescent. Having the property of emitting light that continues for a length of time after excitation by visible or invisible light has been removed. [UL 924: Section 202]

3.3.2 Pre-Incident Planning. A written document resulting from the gathering of general and detailed information/data to be used by public emergency response agencies and private industry for determining the response to reasonable anticipated emergency incidents at a specific facility.

3.3.3* Referent. An object or concept (message) represented by a symbol.

3.3.4 Self-Luminous (Emergency Symbols). A type of sign with an integral legend that is powered continuously by a self-contained energy source other than a battery, such as radioactive tritium gas. Operation of a self-luminous sign is independent of external power supplies or other external forms of energy. This definition does not include exit signs dependent upon photoluminescent materials. [UL 924: Section 202]

3.3.5* Supplementary Indicators. Figures, numbers, subscripts, or letter abbreviations used to enhance the effectiveness of symbols.

3.3.6* Symbol. A graphic representation of a referent.

Chapter 4 Symbols for General Use

4.1 Introduction.

4.1.1 This chapter presents general referents and symbols for fire prevention and visual alerting that shall be used for fire and related life safety emergencies.

4.1.2 Purpose.

4.1.2.1 This chapter shall provide uniform fire safety symbols to improve communication wherever signs and symbols are employed to provide fire safety information.

4.1.2.2 This chapter provides uniformity in the selection of symbols that shall be designed to assist in locating exits, fire safety alerting equipment, and safe areas.

4.1.2.3* The fundamental imagery for symbols, as well as their background color and shape, shall be designated in this chapter.

4.1.3* Symbol Presentation.

4.1.3.1 The orientation for prohibition symbols shall not be altered from that shown in this chapter.

4.1.3.2 The symbol background shape shall be as specified in Table 4.2.

4.1.3.2.1* For prohibition symbols, a circle and diagonal slash (at 45 degrees from upper left to lower right) shall be used.

4.1.3.3 Symbol Color. The symbol color shall meet the requirements of ANSI Z535.1, *Safety Color Code*.

4.1.3.4* Symbols shall be permitted to be used in combination with other symbols, either vertically or horizontally, on the same sign or on separate signs adjacent to each other.

4.2* Symbols for General Use. The symbols for general use shall be as given in Table 4.2.

4.3 Class of Fire Symbols. The symbols for class of fire shall be as given in Figure 4.3(a) and Figure 4.3(b).

Table 4.2 Symbols for General Use

| Symbol | Characteristics | Application | Example |
|---|--|--|---|
| <p>Emergency Exit</p>  | <p>Square field Background green Door opening white Image in green</p> | <p>The identification and location of an emergency exit</p> | <p>The location of exit for use in a fire emergency</p> |
| <p>Emergency Exit Use of Arrows — Rectangular Field</p>  | <p>Painted version: Background color white Arrows red or black Backlit version: Doorway, arrows, and lettering in green or red</p> | <p>The identification and location of a route to an emergency exit</p> | <p>Progress to the right</p> |
|  | <p>Painted version: Background color white Arrows red or black Backlit version: Doorway, arrows, and lettering in green or red</p> | <p>The identification and location of a route to an emergency exit</p> | <p>Progress up and to the right</p> |
|  | <p>Painted version: Background color white Arrows red or black Backlit version: Doorway, arrows, and lettering in green or red</p> | <p>The identification and location of a route to an emergency exit</p> | <p>Progress down and to the right</p> |
|  | <p>Painted version: Background color white Arrows red or black Backlit version: Doorway, arrows, and lettering in green or red</p> | <p>The identification and location of a route to an emergency exit</p> | <p>Progress forward</p> |
|  | <p>Painted version: Background color white Arrows red or black Backlit version: Doorway, arrows, and lettering in green or red</p> | <p>The identification and location of a route to an emergency exit</p> | <p>Progress down</p> |
|  | <p>Painted version: Background color white Arrows red or black Backlit version: Doorway, arrows, and lettering in green or red</p> | <p>The identification and location of a route to an emergency exit</p> | <p>Progress to the left</p> |

(continues)

Table 4.2 Continued

| Symbol | Characteristics | Application | Example |
|---|---|--|---|
|  | <p>Painted version: Background color white Arrows red or black</p> <p>Backlit version: Doorway, arrows, and lettering in green or red</p> | The identification and location of a route to an emergency exit | Progress up and to the left |
|  | <p>Painted version: Background color white Arrows red or black</p> <p>Backlit version: Doorway, arrows, and lettering in green or red</p> | The identification and location of a route to an emergency exit | Progress down and to the left |
| <p>Emergency Exit Route (Combination of Two Symbols)</p>  | <p>Square field Background green Door opening white Image in green</p> <p>For arrows: Square field Green arrow on white background or white arrow on green background</p> | The identification and location of a route to be used in an emergency | The direction to a fire exit |
| <p>Accessible Emergency Exit (Combination of Two Symbols)</p>  | <p>Square field Background green Door opening white Image in green International symbol of accessibility per ICC/ANSI A117.1, <i>Accessible and Usable Buildings and Facilities</i></p> | The identification of a route that leads to an emergency exit that is accessible to disabled users, as specified by ICC/ANSI A117.1, <i>Accessible and Usable Buildings and Facilities</i> | The location of a route toward a fire exit that is accessible to disabled users |

(continues)

Table 4.2 Continued

| Symbol | Characteristics | Application | Example |
|---|---|---|---|
| <p>Accessible Emergency Exit Route (Combination of Three Symbols)</p>  | <p>Square field Background green Door opening white Image in green</p> <p>International symbol of accessibility per ICC/ANSI A117.1, <i>Accessible and Usable Buildings and Facilities</i></p> <p>For arrows: Square field Green arrow on white background or white arrow on green background</p> | <p>The identification of a route that leads to an emergency exit that is accessible to disabled users</p> | <p>The location of the route toward a fire exit that is accessible to disabled users</p> |
| <p>Not an Exit</p>  | <p>Circular field Red prohibition symbol Background white Door frame green Door opening white Image in black</p> | <p>The identification of doors that do NOT lead to an exit</p> | <p>The location of an interior door such as one leading to a closet, an interior courtyard, or a basement</p> |
| <p>Use Stairs in Case of Fire</p>  | <p>Square field Red flame Black figure White background</p> | <p>An instruction to the user to use stairs (downward egress) in case of fire</p> | <p>The identification that stairs are to be used in case of fire</p> |
| <p>Use Stairs in Case of Fire</p>  | <p>Square field Red flame Black figure White background</p> | <p>An instruction to the user to use stairs (upward egress) in case of fire</p> | <p>The identification that stairs are to be used in case of fire</p> |
| <p>Do Not Use Elevator in Case of Fire</p>  | <p>Rectangular field Red flame Black figures White background Red circle and slash</p> | <p>An instruction not to use elevators in case of fire</p> | <p>Posted near elevator call button</p> |

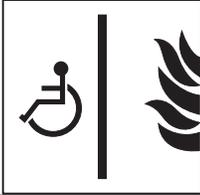
(continues)

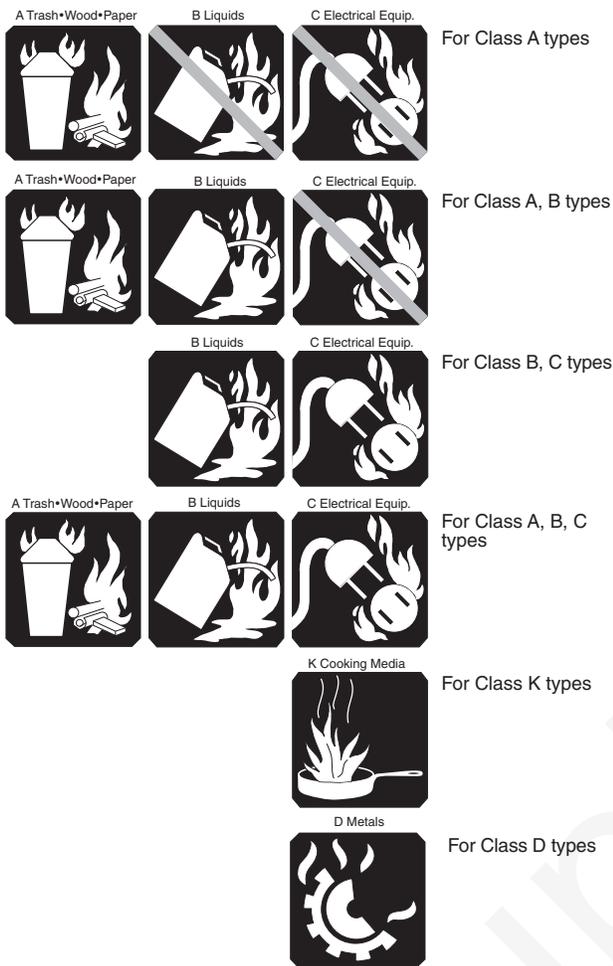
Table 4.2 Continued

| Symbol | Characteristics | Application | Example |
|---|---|---|---|
| <p>No Open Flame — Flame</p>  | <p>Circular field Red circle and slash Black image White background</p> | <p>The identification of areas in which open flame is prohibited</p> | <p>The identification of areas, such as combustible storage areas, gas stations, and hazardous areas</p> |
| <p>No Open Flame — Lighted Match</p>  | <p>Circular field Red circle and slash Black image White background</p> | <p>An instruction not to use lighted matches</p> | <p>Where posted, the use of matches is prohibited</p> |
| <p>No Smoking</p>  | <p>Circular field Red circle and slash Black image White background</p> | <p>The identification of areas in which smoking is prohibited</p> | <p>The identification of areas, such as those for flammable liquid storage, where smoking could lead to fire or explosion</p> |
| <p>No Campfires</p>  | <p>Circular field Red circle and slash Black image White background</p> | <p>The identification of areas where campfires are not permitted</p> | <p>The identification of areas, such as municipal parks, where campfires are not permitted</p> |
| <p>Manual Station — Pull Station/Fire Alarm Box</p>  | <p>Rectangular field Red background White flame White hand White box White horn</p> | <p>An instruction to actuate an alarm-initiating device in a fire emergency</p> | <p>Posted above a manually activated initiating device</p> |
| <p>No Cooking</p>  | <p>Square field White background Red flame Black pot and steam Red circle and slash</p> | <p>An instruction not to cook food in an area</p> | <p>Posted inside a guest room in a hotel or a student room in a college dormitory</p> |

(continues)

Table 4.2 Continued

| Symbol | Characteristics | Application | Example |
|--|---|---|---|
| <p>Area of Refuge</p>  | <p>Square field White background Red flame</p> | <p>The identification of an area of refuge</p> | <p>A designated area of refuge to be used in a fire emergency</p> |
| <p>Severe Weather Shelter Area</p>  | <p>Background yellow Figures black Black storm symbol</p> | <p>The identification for a severe weather shelter. Include appropriate symbol for type of storm anticipated (e.g., cyclone, tornado)</p> | <p>Tornado shelter</p> |
| <p>No Hanger</p>  | <p>Red circle and slash Black image</p> | <p>To prohibit hanging clothes or other items from sprinklers</p> | <p>Where posted</p> |
| <p>Automated External Defibrillator (AED)</p>  | <p>Square field White background Red heart White bolt through the heart Black lettering</p> | <p>To identify the location of AEDs</p> | <p>Posted in airports and other places of assembly</p> |
| <p>Fire Extinguisher</p>  | <p>Square field Red background White symbol</p> | <p>For everyday use in workplaces and public areas; supplementary text sign can be used to increase comprehension</p> | <p>Fire safety signage, manuals, and notices</p> |
| <p>Fire Hose or Standpipe</p>  | <p>Square field Red background White symbol</p> | <p>For everyday use in workplaces and public areas; supplementary text sign can be used to increase comprehension</p> | <p>Fire safety signage, manuals, and notices</p> |



Note: Recommended colors, per PMS (Pantone Matching System) include the following:

- BLUE — 299
- RED — Warm Red

FIGURE 4.3(a) Recommended Marking System. [10:Figure B.1.1]

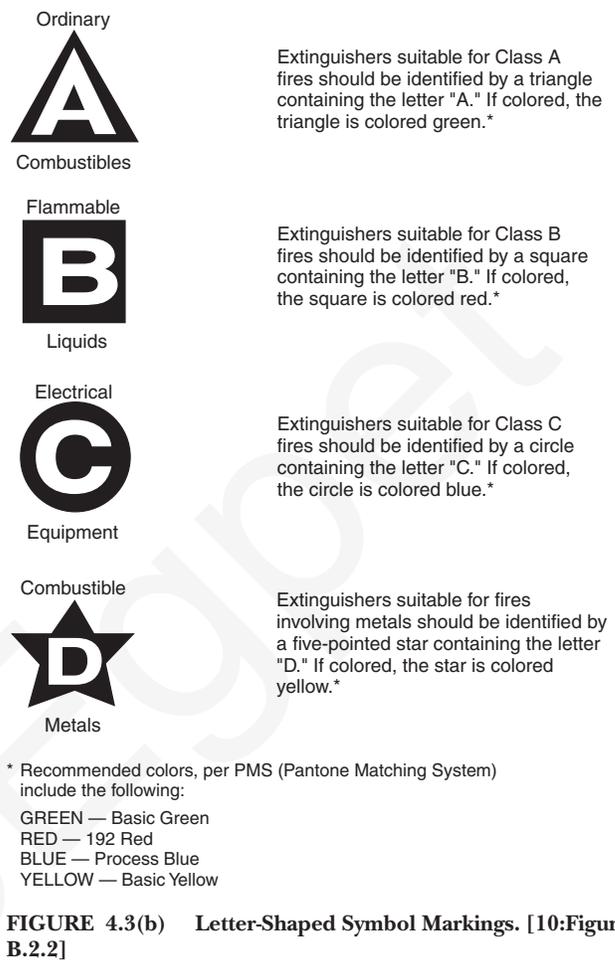


FIGURE 4.3(b) Letter-Shaped Symbol Markings. [10:Figure B.2.2]

Chapter 5 Symbols for Use by the Fire Service

5.1 Introduction.

5.1.1* This chapter presents standard referents and symbols that shall be used for visually alerting fire fighters and other emergency responders during fire and related emergencies.

5.1.2* Fundamental shapes of symbols, as well as the background color and shape, shall be as designated in this chapter.

5.1.3* Symbol Presentation.

5.1.3.1* Symbol Shapes. The shape of symbols shall be as illustrated in Section 5.2.

5.1.3.2 Symbol Background.

5.1.3.2.1 The symbol background shall be as specified in Table 5.2.

5.1.3.2.2 The symbol background color shall be red, white, or blue as designated and shall meet the requirements of ANSI Z535.1, *Safety Color Code*, for safety red, white, or blue.

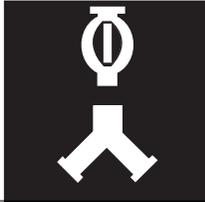
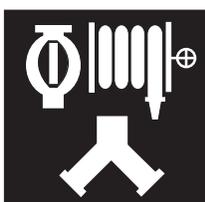
5.1.3.3 Symbol Color. The symbol color shall be safety white or blue and shall meet the requirements of ANSI Z535.1, *Safety Color Code*, for safety white or blue.

5.1.3.4 Symbol Orientation. Symbol orientation shall not be altered from that shown in this chapter.

5.2* Symbols for Use by the Fire Service. The symbols for use by the fire service shall be as given in Table 5.2.

5.3 Fire Apparatus Safety Symbols. Safety signs referenced in this standard beginning with the letters FAMA shall conform to the text and graphics of the referenced safety sign number found in FAMA TC010, *Standard Product Safety Sign Catalog for Automotive Fire Apparatus*.

Table 5.2 Symbols for Use by the Fire Service

| Symbol | Characteristics | Application | Examples |
|---|--|--|--|
| Fire Department Automatic Sprinkler Connection — Siamese  | Square field Red background White symbol | The identification and location of a fire department automatic sprinkler connection | The location of a siamese automatic sprinkler connections on buildings The location of siamese freestanding automatic sprinkler connections |
| Fire Department Automatic Sprinkler Connection — Single  | Square field Red background White symbol | The identification and location of a fire department automatic sprinkler connection | The location of a single automatic sprinkler connection on buildings The location of a single freestanding automatic sprinkler connection |
| Fire Department Standpipe Connection  | Square field Red background White symbol | The identification and location of a fire department standpipe connection | The location of standpipe connections on buildings and structures The location of freestanding standpipe connections |
| Fire Department Combined Automatic Sprinkler/Standpipe Connection  | Square field Red background White symbol | The identification and location of a fire department combined automatic sprinkler/standpipe connection | The location of combined sprinkler/standpipe connections on buildings The location of freestanding combined sprinkler/standpipe connections |
| Fire Hydrant (All Types)  | Square field Red background White symbol | The identification and location of a fire hydrant | The location of fire hydrants, wall hydrants, underground hydrants, or other fire-fighting water supplies |

(continues)

Table 5.2 Continued

| Symbol | Characteristics | Application | Examples |
|--|---|--|--|
| Automatic Sprinkler Control Valve  | Square field Red background White symbol | The identification and location of an automatic sprinkler control valve | The location of control valves for automatic sprinkler systems On doors of rooms containing control valves |
| Electric Panel or Electric Shutoff  | Square field Blue background White symbol | The identification and location of an electrical panel or other electric shutoff device | The location of electric panels or other electric control devices that can be located in basements or mechanical rooms |
| Gas Shutoff Valve  | Square field Red background White symbol Red letter G | The location of a gas shutoff valve | The location of gas shutoff valves On doors of rooms containing gas shutoff valves |
| Fire-Fighting Hose or Standpipe Outlet  | Square field Red background White symbol | The location of a fire-fighting hose or a standpipe outlet | The location of interior fire-fighting hose stations and standpipe outlets in buildings and structures The location on bridges or elevated highways |
| Fire Extinguisher  | Square field Red background White symbol | The location of a fire extinguisher | The location of fire extinguishers in buildings and exterior locations |
| Directional Arrow  | Square field Background green to correspond to accompanying sign White symbol | Direction to the location of fire-fighting equipment or utility; always used in conjunction with, and adjacent to, another symbol indicating the particular equipment or utility | |

(continues)

Table 5.2 Continued

| Symbol | Characteristics | Application | Examples |
|---|--|--|--|
| Diagonal Directional Arrow  | Square field Background green to correspond to accompanying sign White symbol | Direction to the location of fire-fighting equipment or utility; always used in conjunction with, and adjacent to, another symbol indicating the particular equipment or utility | |
| Child Care Center  | Square field Blue infant and hands White background | The identification and location of child care centers | On the door opening into child care centers At a fire department command or access point indicating presence and location of child care centers |
| Emergency Telephone  | Square field Red background White phone | The identification and location of fire service or emergency telephone system | |
| No Fire Fighting  | Red prohibition symbol Circular field White background Black truck within black octagonal outline | To be posted on, near, or on the approach to buildings where fire fighting is not to occur | Explosives bunkers, frangible buildings, or contaminated buildings |
| Self-Contained Breathing Apparatus (SCBA)  | Rectangular field White symbol Green background | To indicate the location of SCBA, breathing air connections, or refill location | For SCBA fill locations in high-rise buildings |

Chapter 6 Symbols for Use in Architectural and Engineering Drawings and Insurance Diagrams

6.1* Introduction.

6.1.1 This chapter presents symbols that shall be used in drawings and diagrams.

6.1.2* Symbol Presentation.

6.1.2.1* Symbol Shapes. The shape of symbols shall be as illustrated in Sections 6.2 through 7.9.

6.1.2.2 Screened Lines. Screened lines in the chapter shall not be considered part of the symbol but shall be used to represent the piping, wiring, or mounting surface associated with the symbol.

6.1.2.3 Symbol Scale. All scales for symbols on any one drawing shall be the same relative size.

6.1.2.4* Symbol Orientation. Symbols shall be oriented to the walls, piping, electrical lines, and so forth, to which they are attached.

6.2 Symbols for Site Features.

6.2.1 Buildings.

6.2.1.1 The exterior walls of buildings shall be outlined in single thickness lines if other than fire rated and double thickness lines if fire rated.

6.2.1.2* The perimeter of canopies, loading docks, and other open-walled structures shall be shown by broken lines.

6.2.2 Railroad Tracks. Railroad tracks shall be shown by a single line with cross dashes, as shown in Figure 6.2.2.

6.2.3* Streets. Streets shall be shown.

6.2.4* Bodies of Water. Rivers, lakes, and so forth, shall be outlined.

6.2.5 Fences.

6.2.5.1 Fences shall be shown by lines with x's evenly spaced.

6.2.5.2* Gates shall be shown.

6.2.6 Property Lines. The notation given in Figure 6.2.6 shall indicate property lines.

6.2.7 Fire Department Access. The symbol for fire department access shall be as shown in Figure 6.2.7.

6.2.8 Other Site Features. For other fire protection site features, Section 7.2 shall be viewed.



FIGURE 6.2.2 Symbol for Railroad Tracks.

FIGURE 6.2.6 Notation Indicating Property Lines.



FIGURE 6.2.7 Symbol for Fire Department Access.

6.3 Symbols for Building Construction.

6.3.1* Types of Building Construction. Types of construction shall be shown narratively.

6.3.2* Height. Height shall be shown to indicate number of stories above ground, number of stories below ground, and height from grade to eaves.

6.3.3* Symbols for Walls and Parapets. Symbols for walls and parapets shall be as given in Table 6.3.3.

6.3.4 Symbols for Floor Openings, Wall Openings, Roof Openings, and Their Protection. Symbols for floor openings, wall openings, roof openings, and their protection shall be as given in Table 6.3.4.

6.3.5* Special Symbols for Cross-Sections. The symbols shown in Table 6.3.5 shall be used to indicate features of cross-sections. It is recognized that descriptive notes often are required.

6.3.6 Miscellaneous Features. A number of features related to fire protection that do not fall under 6.3.1 through 6.3.5 shall be as given in Table 6.3.6.

Table 6.3.3 Symbols for Walls and Parapets

| Symbol | Description |
|--------|--|
| | Wall — basic shape |
| | Smoke-rated wall |
| | 1/2-hour fire-rated wall |
| | 1/2-hour fire/smoke-rated wall |
| | 3/4-hour fire-rated wall |
| | 3/4-hour fire/smoke-rated wall |
| | 1-hour fire-rated wall |
| | 1-hour fire/smoke-rated wall |
| | 2-hour fire-rated wall |
| | 2-hour fire wall |
| | 2-hour fire/smoke-rated wall |
| | 3-hour fire-rated wall |
| | 3-hour fire wall |
| | 3-hour fire/smoke-rated wall |
| | 4-hour fire-rated wall |
| | 4-hour fire wall |
| | 4-hour fire/smoke-rated wall |
| | Parapet — one cross for each 150 mm (6 in.) parapet that extends above roof (shown in plan view of symbol) |

Table 6.3.4 Symbols for Floor Openings, Wall Openings, Roof Openings, and Their Protection and Life Safety Plans

| Symbol | Description | Comments |
|-----------|---|--|
| | Opening in wall | |
| | Rated fire door in wall (less than 3 hours) | |
| | Fire door in wall (3-hour rated) | |
| | Elevator in combustible shaft | |
| | Elevator in noncombustible shaft | |
| | Open hoistway | |
| | Escalator | |
| | Stairs in combustible shaft | |
| | Stairs in fire-rated shaft | |
| | Stairs in open shaft | |
| | Skylight | |
| E: --- | Egress component identifier | Specify egress component: EX# = Exit number HE = Horizontal exit EP = Exit passageway CP = Common path of travel PD = Public discharge RD = Room door ES = Escape |
| < --- > | Egress component capacity | Specify allowable number of persons through egress component (e.g., < 25 >) |
| << --- >> | Governing component capacity | Specify maximum capacity of the egress path |

(continues)

Table 6.3.4 Continued

| Symbol | Description | Comments |
|-----------|---|---|
| --- > --- | Travel distance | Left side: Distance to egress component Right side: Egress component identifier |
| | Occupancy capacity | Top: Specify capacity Middle: Specify area [square feet (square meters)] Bottom: Specify occupant load factor |
| | Fire door | |
| | Non-rated fire door | |
| | Non-rated smoke-resistant fire door | |
| | 20-minute fire-rated fire door | |
| | 20-minute fire-rated, smoke-resistant fire door | |
| | 1/2-hour fire-rated fire door | |
| | 1/2-hour fire-rated, smoke-resistant fire door | |
| | 3/4-hour fire-rated fire door | |
| | 3/4-hour fire-rated, smoke-resistant fire door | |
| | 1-hour fire-rated fire door | |

(continues)

Table 6.3.4 Continued

| Symbol | Description | Comments |
|--------|--|---------------------------------|
| | 1-hour fire-rated, smoke-resistant fire door | |
| | 1 1/2-hour fire-rated fire door | |
| | 1 1/2-hour fire-rated, smoke-resistant fire door | |
| | 2-hour fire-rated fire door | |
| | 2-hour fire-rated, smoke-resistant fire door | |
| | 3-hour fire-rated fire door | |
| | 3-hour fire-rated, smoke-resistant fire door | |
| | Exit | Wide, black, solid line |
| | Exit access | Wide, black, dashed line |
| | Exit discharge | Wide, black, short, dashed line |

Table 6.3.5 Special Symbols for Cross-Sections

| Symbol | Description | Comments |
|--------|--|---------------------------------|
| | Fire-resistive floor or roof | |
| | Wood-joisted floor or roof | |
| | Other floors or roofs | Note construction |
| | Floor/ceiling or roof/ceiling assembly | Details indicated, as necessary |
| | Floor on ground | |
| | Truss roof | Note construction |

Table 6.3.6 Miscellaneous Features

| Symbol | Description | Comments |
|--------|--|--|
| | Boiler | |
| | Chimney | Describe height and construction |
| | Fire escape | |
| | Horizontal aboveground tank | Indicate type, dimensions, construction, capacity, pressurization, and content |
| | Vertical aboveground tank | Indicate type, dimensions, construction, capacity, pressurization, and content |
| | Belowground tank | Indicate type, dimensions, construction, capacity, pressurization, and content |
| | Class I, Division 1 or 0 | Hatch patterns for electrically classified locations |
| | Class I, Division 1 or Zone 1 | Hatch patterns for electrically classified locations |
| | Class I, Division 2 or Zone 2 | Hatch patterns for electrically classified locations |
| | Designates the location of automated external defibrillators (AEDs) on plans | |

Chapter 7 Symbols for Use in Water Supply, Extinguishing, and Sprinkler System Drawings and Insurance Diagrams

7.1* Introduction.

7.1.1 This chapter presents symbols that shall be used in drawings and diagrams.

7.1.2* Symbol Presentation.

7.1.2.1* Symbol Shapes. The shape of symbols shall be as illustrated in Sections 7.2 through 7.7.

7.1.2.2 Screened Lines. Screened lines in the chapter shall not be considered part of the symbol but shall be used to represent the piping, wiring, or mounting surface associated with the symbol.

7.1.2.3 Symbol Scale. All scales for symbols on any one drawing shall be the same relative size.

7.1.2.4* Symbol Orientation. Symbols shall be oriented to the walls, piping, electrical lines, and so forth, to which they are attached.

7.2* Water Supply and Distribution Symbols. Water supply and distribution symbols shall be as given in Table 7.2.

7.3 Reserved.

7.4 Symbols Related to Means of Egress. Symbols related to means of egress shall be as given in Table 7.4.

7.5 Indicating Appliances. Symbols for indicating appliances shall be as given in Table 7.5.

7.6* Symbols for Fire Extinguishing Systems.

7.6.1 Various Types of Fire Extinguishing Systems.

7.6.1.1 Water-Based Systems. Symbols for water-based systems shall be as given in Table 7.6.1.1.

7.6.1.2 Dry Chemical Systems. Symbols for dry chemical systems shall be as given in Table 7.6.1.2.

7.6.1.3 Systems Utilizing a Gaseous Medium. Symbols for systems utilizing a gaseous medium shall be as given in Table 7.6.1.3.

7.6.1.4 Supplementary Symbols. Supplementary symbols shall be as given in Table 7.6.1.4.

7.6.2 Symbols for Fire Sprinklers. Symbols for fire sprinklers shall be as given in Table 7.6.2.

7.6.2.1* For sprinklers shown in Table 7.6.2, the temperature rating of the sprinkler and other characteristics shall be shown via legends or noted on drawings where a limited number of an individual type of sprinkler is called for by the design.

7.6.3* Symbols for Piping, Valves, Control Devices, and Hangers. Symbols for piping, valves, control devices, and hangers shall be as given in Table 7.6.3.

7.7 Symbols for Portable Fire Extinguishers. Symbols for portable fire extinguishers shall be as given in Table 7.7.

7.8 Symbols for Fire-Fighting Equipment. Symbols for fire-fighting equipment shall be as given in Table 7.8.

7.9* Miscellaneous Symbols. Miscellaneous symbols shall be as given in Table 7.9.

Table 7.2 Water Supply and Distribution Symbols

| Symbol | Description | Comments |
|-------------|----------------------------------|---|
| —W—W—W | City or county public water main | Indicate pipe size and material |
| — F — F — F | Private fire line water main | Indicate pipe size and material |
| ==== | Water main under building | Indicate pipe size and material |
| ----- | Suction pipe | Indicate pipe size and material |
| | Thrust block | |
| | Riser | |
| | Wet riser | |
| | Dry riser | |
| | Preaction riser | |
| | Nitrogen-filled dry riser | |
| | Nitrogen-filled preaction riser | |
| | Pipe elbow up or down | Height on either side indicated by pipe height tags |
| | Pipe tee up or down | Height of crossed pipes indicated by pipe height tags |
| | Valves (general) | Basic shape; indicate valve size |
| | Valve in pit | Indicate valve size |
| | Post-indicator valve | Indicate valve size |
| | Key-operated valve | Indicate valve size |

(continues)

Table 7.2 Continued

| Symbol | Description | Comments |
|--------|--|---|
| | OS&Y valve (outside screw and yoke, rising stem) | Indicate valve size |
| | Indicating butterfly valve | Indicate valve size |
| | Nonindicating valve (nonrising-stem valve) | Indicate valve size |
| | Check valve | Basic shape; indicate valve size, direction of flow |
| | Backflow preventer — double check type | Also referred to as a double check valve assembly |
| | Backflow preventer — reduced pressure zone (RPZ) type | |
| | Pressure-regulating valve | |
| | Pressure relief valve | |
| | Float valve | |
| | Meter | Indicate type |
| | Private hydrant, one hose outlet | Indicate size, type of thread, or connection |
| | Public hydrant, two hose outlets | Indicate size, type of thread, or connection |
| | Public hydrant, two hose outlets and pumper connection | Indicate size, type of thread, or connection |
| | Wall hydrant, two hose outlets | Indicate size, type of thread, or connection |

(continues)

Table 7.2 Continued

| Symbol | Description | Comments |
|--------|---|---|
| | Private housed hydrant, two hose outlets | Indicate size, type of thread, or connection |
| | Single fire department connection | Specify type, size, thread, and angle |
| | Siamese fire department connection | Specify type, size, and angle |
| | Wall flush 2 inlet fire department connection | Specify type, size, and connections |
| | Wall flush 3 inlet fire department connection | Specify type, size, and connections |
| | Wall flush 4 inlet fire department connection | Specify type, size, and connections |
| | Freestanding siamese fire department connection | Sidewalk or pit type; specify size |
| | Freestanding 3 inlet fire department connection | Specify type, size, and connections |
| | Freestanding 4 inlet fire department connection | Specify type, size, and connections |
| | Fire pump with driver | Specify driver type and rated capacity |
| | Freestanding test header | Freestanding; specify number and sizes of outlets |
| | Wall-mounted test header | Wall; specify number and sizes of outlets |
| | Screen/strainer | |
| | Riser air compressor | Specify size |
| | Tank air compressor | Specify size |
| | Tank nitrogen generator | Specify size |

Table 7.4 Symbols Related to Means of Egress

| Symbol | Description | Comments |
|--------|---|--|
| | Emergency light, battery-powered | Number of lamps on unit to be indicated; indicate whether light head(s) [lamp(s)] is remote from battery |
| | Illuminated exit sign, single face | Indicate direction of flow for the face |
| | Illuminated exit sign, double face | Indicate direction of flow for each face |
| | Combined battery-powered emergency light and illuminated exit sign | Number of lamps on unit to be indicated; indicate whether light head(s) [lamp(s)] is remote from battery; indicate direction of flow for the face |
| | Exit lighting | Exit lighting fixture, arrows, and exit face as indicated on drawings (mounting heights to be determined by job specifications) — from NECA NEIS 100, symbol 2.005 |
| | Luminaire providing emergency illumination (filled in) | From NECA NEIS 100, symbol 2.300 |
| | Directional sounder — exit marking audible appliance, wall mounted | Applied from NECA NEIS 100, symbol 9.109 |
| | Directional sounder — exit marking audible appliance, ceiling mounted | Applied from NECA NEIS 100, symbol 9.110 |
| | Directional exit indicating strip lighting appliance | Applied from NECA NEIS 100, symbol 2.002 |

Table 7.5 Symbols for Indicating Appliances

| Symbol | Description | Comments |
|---|--------------------------------------|-------------------------------|
|  | Water motor alarm (water motor gong) | Shield optional, specify size |
|  | Electric bell | Specify size |

Table 7.6.1.1 Symbols for Water-Based Systems

| Symbol | Description |
|---|---|
|  | Wet charged system — automatically actuated |
|  | Wet charged system — manually actuated |
|  | Dry system — automatically actuated, air filled |
|  | Dry system — manually actuated, air filled |
|  | Dry system — automatically actuated, nitrogen filled |
|  | Dry system — manually actuated, nitrogen filled |
|  | Pre-action dry system — automatically actuated, air filled |
|  | Pre-action dry system — manually actuated, air filled |
|  | Pre-action dry system — automatically actuated, nitrogen filled |
|  | Pre-action dry system — manually actuated, nitrogen filled |
|  | Foam system — automatically actuated |
|  | Foam system — manually actuated |
|  | Water mist extinguishing system — automatically actuated |
|  | Water mist extinguishing system — manually actuated |

Table 7.6.1.2 Symbols for Dry Chemical Systems

| Symbol | Description |
|---|---|
|  | For liquid, gas, and electrical fires — automatically actuated |
|  | For liquid, gas, and electrical fires — manually actuated |
|  | For fires of all types (except metals) — automatically actuated |
|  | For fires of all types (except metals) — manually actuated |

Table 7.6.1.3 Symbols for Systems Utilizing a Gaseous Medium

| Symbol | Description |
|---|---|
|  | Carbon dioxide system — automatically actuated |
|  | Carbon dioxide system — manually actuated |
|  | Halon system or clean agent extinguishing system — automatically actuated |
|  | Halon system or clean agent extinguishing system — manually actuated |

Table 7.6.1.4 Supplementary Symbols

| Symbol | Description |
|---|-----------------------------|
|  | Fully sprinklered space |
|  | Partially sprinklered space |
|  | Nonsprinklered space |
|  | Water spray system |

Table 7.6.2 Symbols for Fire Sprinklers

| Symbol | Description | Comments |
|--------|---|---|
| | Upright sprinkler | |
| | Pendent sprinkler | Note "DP" on drawing and/or in specifications where dry pendent sprinklers are employed |
| | Upright sprinkler; on sprig | |
| | Upright sprinkler on top of riser nipple | |
| | Upright sprinkler on sprig on top of riser nipple | |
| | Pendent sprinkler; on drop nipple | |
| | Sidewall sprinkler | |
| | Upright on sprig — extended coverage | 'X' behind a head denotes extended coverage type |
| | Pendent drop — extended coverage | 'X' behind a head denotes extended coverage type |
| | Upright on sprig — extended coverage with guard | 'G' next to a head denotes head guard installed |
| | Pendent drop — extended coverage with guard | 'G' next to a head denotes head guard installed |
| | Dry upright on sprig | |
| | Dry pendent drop | |

(continues)

Table 7.6.2 Continued

| Symbol | Description | Comments |
|--------|---|------------------|
| | Dry upright on sprig — extended coverage | |
| | Dry pendent drop — extended coverage | |
| | Dry horizontal sidewall | |
| | Dry horizontal sidewall | Alternate symbol |
| | Dry horizontal sidewall — extended coverage | |
| | Dry horizontal sidewall — extended coverage | Alternate symbol |
| | Dry vertical sidewall sprinkler | |
| | Dry vertical sidewall sprinkler | Alternate symbol |
| | Attic upright sprinkler | |
| | Attic upright sprinkler | Alternate symbol |
| | Attic upright sprinkler (on sprig) | |
| | Attic upright sprinkler (on sprig) | Alternate symbol |
| | Attic back to back | |
| | Attic back to back | Alternate symbol |
| | Attic single directional | |
| | Attic single directional | Alternate symbol |
| | Attic hip single directional | |
| | Attic hip single directional | Alternate symbol |

(continues)

Table 7.6.2 Continued

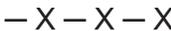
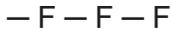
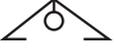
| Symbol | Description | Comments |
|--------|---|---|
| | Attic back to back (on sprig) | |
| | Attic back to back (on sprig) | Alternate symbol |
| | Attic single directional (on sprig) | |
| | Attic single directional (on sprig) | Alternate symbol |
| | Attic hip single directional (on sprig) | |
| | Attic hip single directional (on sprig) | Alternate symbol |
| | Vertical sidewall sprinkler | |
| | Vertical sidewall sprinkler | Alternate symbol |
| | Concealed space sprinkler | |
| | Concealed space sprinkler | Alternate symbol |
| | Concealed space sprinkler (on sprig) | |
| | Concealed space sprinkler (on sprig) | Alternate symbol |
| | Outside sprinkler | Specify type, orifice size; for example, open sprinkler (window or cornice) |
| | Open sprinkler on branch line | |

(continues)

Table 7.6.2 Continued

| Symbol | Description | Comments |
|--------|--|----------|
| | Open sprinkler on branch line with sprig | |
| | Open upright sprinkler | |
| | Open pendent sprinkler | |
| | Open upright sprinkler on sprig | |
| | Open pendent sprinkler on drop | |
| | Open directional spray nozzle | |
| | Open directional spray nozzle on sprig | |
| | Open directional spray nozzle on drop | |
| | Water spray nozzle | |
| | Window sprinklers | |

Table 7.6.3 Symbols for Piping, Valves, Control Devices, and Hangers

| Symbol | Description | Comments |
|---|---|--|
|  | Sprinkler piping and branch line | Indicate pipe size |
|  | Existing sprinkler piping and branch line | Indicate pipe size |
|  | Demo sprinkler piping and branch line | Indicate pipe size |
|  | Underground sprinkler supply piping | Indicate pipe size |
|  | Pipe trace heater | See NECA 100, symbol 5.106 |
|  | Mechanical coupling | |
|  | Pipe hanger | Diagonal stroke imposed on the pipe that the hanger supports |
|  | Lateral brace | |
|  | Longitudinal brace | |
|  | Four-way brace | Only used to brace risers |
|  | Vertical rise brace | Indicate pipe size |
|  | Branch line cable restraint | Indicate pipe size |
|  | Angle valve (angle hose valve) | Indicate size, type, and other required data |
|  | Floor/zone control valve assembly | Specify size |
|  | Check valve (general) | |
|  | Riser check valve (general) | Specify size |

(continues)

Table 7.6.3 Continued

| Symbol | Description | Comments |
|--|---|-----------------------|
|  | Alarm check valve | Specify size |
|  | Dry pipe valve | Specify size |
|  | Dry pipe valve with quick opening device (accelerator or exhauster) | Specify size and type |
|  | Dry pipe valve — nitrogen charged | Specify size |
|  | Dry pipe valve with quick opening device — nitrogen charged | Specify size |
|  | Deluge valve | Specify size and type |
|  | Preaction valve | Specify size and type |
|  | Preaction valve — nitrogen charged | Specify size |

Table 7.7 Symbols for Portable Fire Extinguishers

| Symbol | Description | Comments |
|--------|--|-------------|
| | Portable fire extinguisher | Basic shape |
| | Water extinguisher | |
| | Foam extinguisher | |
| | Dry chemical extinguisher for liquid, gas, or electrical fires | BC type |
| | Dry chemical extinguisher for fires of all types (except metals) | ABC type |
| | CO ₂ extinguisher | |
| | Halon or clean agent extinguisher | |
| | Extinguisher for metal fires | |

Table 7.8 Symbols for Fire-Fighting Equipment

| Symbol | Description | Comments |
|--------|------------------------------|----------------------|
| | Fire-fighting equipment | Basic shape |
| | CO ₂ reel station | |
| | Dry chemical reel station | |
| | Fire hose valve connection | Specify thread size |
| | Foam reel station | |
| | Hose station, dry standpipe | |
| | Hose station, wet standpipe | |
| | Monitor nozzle, dry | Specify orifice size |
| | Monitor nozzle, charged | Specify orifice size |

Table 7.9 Miscellaneous Symbols

| Symbol | Description | Comments |
|--------|--|---|
| | Agent storage container | Specify type of agent and mounting |
| | Agent storage container — foam | |
| | Agent storage container — Halon | |
| | Agent storage container — carbon dioxide | |
| | Agent storage container — clean agent | |
| | Agent storage container — dry chemical | |
| | Agent storage container — water mist | |
| | Agent storage container — wet chemical | |
| | Special spray nozzle | Specify type, orifice, size, other required data (shown here on pipe) |
| | Fusible link | Specify degrees |
| | Fusible link with electrothermal feature | Specify degrees |

Chapter 8 Symbols for Use in Electronic Fire and Smoke Detection and Notification System Drawings and Insurance Diagrams

8.1* Introduction.

8.1.1 This chapter presents symbols that shall be used in drawings and diagrams.

8.1.2* Symbol Presentation.

8.1.2.1* **Symbol Shapes.** The shape of symbols shall be as illustrated in Sections 8.2 through 8.6.

8.1.2.2 **Screened Lines.** Screened lines in the chapter shall not be considered part of the symbol but shall be used to represent the piping, wiring, or mounting surface associated with the symbol.

8.1.2.3 **Symbol Scale.** All scales for symbols on any one drawing shall be the same relative size.

8.1.2.4* **Symbol Orientation.** Symbols shall be oriented to the walls, piping, electrical lines, and so forth, to which they are attached.

8.2 **Symbols for Control Panels.** Symbols for control panels shall be as given in Table 8.2.

Table 8.2 Symbols for Control Units (Panels)

| Symbol | Description |
|--------|--|
| | Basic shape |
| AMP | Amplifier rack |
| ARCM | Area of refuge emergency communication system — master unit |
| ARCR | Area of refuge emergency communication system — remote unit |
| ACU | Autonomous control unit |
| BATT | Battery cabinet |
| CRT | Cathode ray tube |
| HVAC | Control panel for heating (H), ventilation (V), air conditioning (AC), exhaust (E), stairwell pressurization (P) |
| DACR | Digital alarm communicator receiver |
| DACT | Digital alarm communicator transmitter |
| ESR | Elevator status/recall |
| ECCU | Emergency communications control unit |

(continues)

Table 8.2 Continued

| Symbol | Description |
|--------------------|--|
| FAA | Fire alarm annunciator |
| FAC | Fire alarm communicator |
| FACP | Fire alarm control panel (legacy symbol for FACU) |
| FACU | Fire alarm control unit; include a 'D' subscript if it is a dedicated unit |
| FATC | Fire alarm terminal cabinet |
| TPR <i>n</i> | Fire alarm transponder <i>n</i> = transponder number |
| FFI | Fire fighter interface |
| FSCP _{xx} | Fire suppression control panel (legacy symbol for FSCU) xx denotes suppression type |
| FSCU _{xx} | Fire suppression control unit xx denotes suppression type |
| GAP | Graphic annunciator panel |
| LCD | LCD annunciator/display |
| MFACU | Master fire alarm control unit |
| NAC _n | Notification circuit power booster, extender panel <i>n</i> = unit number |
| | Power panel |
| PRE | Pre-action system/control unit |
| PRN | Printer |
| PPCU | Protected premises control unit (local) |
| PP | Purge panel |
| RP | Relay panel |
| RSFACU | Releasing service fire alarm control unit |
| MIC | Remote voice evacuation microphone |
| EVAC _n | Remotely located evacuation amplifier cabinet |
| SAP | Sprinkler alarm panel |
| UPS | Uninterruptible power supply |

(continues)

Table 8.2 *Continued*

| Symbol | Description |
|---|------------------------------------|
|  | Voice evacuation control unit |
|  | Wireless control unit |
| Fire Suppression/Releasing Service Control Unit Types: | |
|  | Aerosol |
|  | Carbon dioxide |
|  | Clean agent |
|  | Deluge fire sprinkler |
|  | Dry chemical |
|  | Fire alarm control interface |
|  | Fire pump controller |
|  | Foam |
|  | Halon |
|  | Mass notification system interface |
|  | Operating control unit |
|  | Water mist |
|  | Wet chemical |

8.3* Symbols for Fire Alarms, Detection, and Related Equipment — Signal Initiating Devices and Activation Switches. Symbols for signal initiating devices and activation switches shall be as given in Table 8.3.

Table 8.3 Symbols for Signal Initiating Devices and Activation Switches

| Symbol | Description |
|---|--|
| Abort Switch Types: | |
|  | Abort switch — basic shape |
|  | Abort switch |
|  | Aerosol release abort station |
|  | Clean agent |
|  | Deluge fire sprinkler |
|  | Dry chemical |
|  | Foam |
|  | Halon |
|  | Manual releasing station |
|  | Preaction |
|  | Water mist |
|  | Wet chemical |
| Addressable Modules: | |
|  | Addressable input monitor module |
|  | Addressable input/output module; # denotes number of inputs and outputs |
|  | Addressable output control module |
|  | Isolation module |

(continues)

Table 8.3 Continued

| Symbol | Description |
|----------------------------------|---|
| Automatic Detection Type: | |
| | Automatic detection and supervisory devices — basic shape |
| Flame Detection Types: | |
| | Flame detector basic shape XX = detection type |
| | Combination ultraviolet/infrared |
| | Infrared detector |
| | Ultraviolet detector |
| | Visible radiation detector |
| Gas Detection Types: | |
| | Gas detector/sensor basic shape XX = gas type |
| | Carbon dioxide detector |
| | Carbon monoxide detector |
| | Hydrogen chloride detector |
| | Methane detector |
| Heat Detection Types: | |
| | Heat detector/sensor — XX = type basic shape |
| | Combination rate of rise/fixed temperature |
| | Fixed temperature |
| | Heat detector — line type |
| | Heat detector/sensor (thermal detection) |

(continues)

Table 8.3 Continued

| Symbol | Description |
|---|--|
| | Rate compensation |
| | Rate of rise only |
| Interface and Supervisory Devices: | |
| | End of line device — capacitor |
| | End of line device — diode |
| | End of line device — relay |
| | End of line device — resistor |
| | Flow detector/switch |
| | High temperature switch |
| | Level detector/switch |
| | Low temperature switch |
| | Main/reserve |
| | Maintenance/disconnect switch |
| | Non-addressable output relay |
| | Pressure detector/switch |
| | Solenoid valve |
| | Supervised solenoid valve |
| | Surge suppressor |
| | Temperature supervisory switch |
| | Transfer switch — automatic with handle |
| | Transfer switch — manual with handle |
| | Valve supervisory switch |

(continues)

Table 8.3 Continued

| Symbol | Description |
|---|--|
|  | Valve with integral supervisory switch |
|  | Water detector |
| Manual Fire Alarm Box Types: | |
|  | Manual station — basic shape |
|  | Aerosol |
|  | Carbon dioxide |
|  | Clean agent |
|  | Deluge fire sprinkler |
|  | Drill key |
|  | Dry chemical |
|  | Fire alarm master box |
|  | Foam |
|  | Halon |
|  | Preaction |
|  | Pull station/fire alarm box |
|  | Water mist |
|  | Wet chemical |

Smoke Detection/Sensor Types:

| | |
|---|---|
|  | Smoke detector/sensor — basic shape orientation not to be changed |
|  | Air sampling |
|  | In duct |
|  | Ionization |
|  | Photoelectric |

(continues)

Table 8.3 Continued

| Symbol | Description |
|--|--|
|  | Relay base |
|  | Smoke/heat detector/carbon monoxide detector |
|  | Smoke/heat detector/sensor combination |
|  | Smoke alarm (single station) |
|  | Smoke detector/sensor — beam receiver |
|  | Smoke detector/sensor — beam transmitter |
|  | Smoke detector/sensor — XX = type |
|  | Smoke detector/sensor for duct |
|  | Sounder base |

8.4 Notification Appliances.

8.4.1 Notification appliance subscripts shall be applied to symbols as required for clarification (see Table 8.4.1).

Table 8.4.1 Notification Appliance Subscripts

| Subscript | Meaning |
|-----------|--------------------------------------|
| C | Ceiling mount |
| H | High audible setting |
| L | Low audible setting |
| MNS | Mass notification system |
| P | Pendent |
| RI | Remote indicator |
| SL | Signal light |
| nW | Wattage setting (n = speaker tap) |
| WP | Weatherproof |
| WG | Wire guard |

8.4.2 Notification Appliances. Symbols for notification appliances shall be as given in Table 8.4.2.

Table 8.4.2 Symbols for Notification Appliances

| Symbol | Description |
|--------|---|
| | Audible appliance — basic shape |
| | Bell — single stroke |
| | Bell — trouble |
| | Bell — vibrating |
| | Ceiling mount indicator |
| | Chime |
| | Chime — electronic |
| | Combination horn/visible CD = candela rating/setting |
| | Combination speaker/visible W = wattage CD = candela rating/setting |
| | Gong |
| | Horn only |
| | Mini-horn |
| | Remote alarm indicating and test switch |
| | Remote indicator |
| | Rotating beacon |

(continues)

Table 8.4.2 Continued

| Symbol | Description |
|--------|--|
| | Speaker only, ceiling mount — denote wattage tap |
| | Speaker only, wall mount — denote wattage tap |
| | Visible only (strobe) — ceiling mount CD = candela rating/setting |
| | Visible only (strobe) — wall mount CD = candela rating/setting |

8.4.3 Emergency Communications Notification Appliances. Symbols for emergency communication appliances shall be as given in Table 8.4.3.

Table 8.4.3 Symbols for Emergency Communications Notification Appliances

| Symbol | Description |
|--------|---|
| | Combination speaker/visible — ceiling mount CD = candela rating/setting, W = wattage |
| | Combination speaker/visible — wall mount CD = candela rating/setting, W = wattage |
| | Emergency textual visible appliance |
| | Visible only (strobe) — ceiling mount CD = candela rating/setting |
| | Visible only (strobe) — wall mount CD = candela rating/setting |

8.5 Related Equipment. Symbols for related equipment shall be as given in Table 8.5.

Table 8.5 Symbols for Related Equipment

| Symbol | Description |
|--------|------------------------------|
| | Air sampling detector piping |
| | Door closer |
| | Door holder |
| | End of line resistor |

(continues)

Table 8.5 *Continued*

| Symbol | Description |
|--|---|
|  | Fire service or emergency phone station — accessible |
|  | Fire service or emergency phone station — basic shape |
|  | Fire service or emergency phone station — handset |
|  | Fire service or emergency phone station — jack |
|  | Floor Warden Station |
|  | Integrated smoke sensor and door closer |
|  | Junction box |
|  | Sync adapter module (strobe synchronization) |
|  | Watchman's tour station |

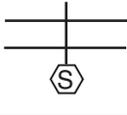
8.6 Symbols for Smoke/Pressurization Control. Symbols for smoke/pressurization controls shall be as given in Table 8.6.

Table 8.6 Symbols for Smoke/Pressurization Controls

| Symbol | Description | Comments |
|---|--------------------------------|----------|
|  | Dampers — barometric | |
|  | Dampers — fire | |
|  | Dampers — fire/smoke | |
|  | Dampers — motorized fire/smoke | |

(continues)

Table 8.6 *Continued*

| Symbol | Description | Comments |
|--|---------------------------------|---|
|  | Dampers — smoke | |
|  | Fans — duct | Arrow indicates direction of flow |
|  | Fans — general | Arrow indicates direction of flow |
|  | Fans — roof | Arrow indicates direction of flow |
|  | Fans — wall | Arrow indicates direction of flow |
|  | Hand (manual)/off-automatic | |
|  | Pressurized stairwell | Orient as required for base or head injection |
|  | Purge controls — manual control | |
|  | Ventilation openings | Orient as required for intake or exhaust |

Chapter 9 Symbols for Use in Pre-Incident Planning Sketches

9.1 Introduction.

9.1.1* This chapter presents symbols that shall be used in pre-incident planning sketches.

9.1.2* Symbol Shapes. The symbol shapes shall be chosen for their ease of reproduction by either freehand drawing or with the use of templates.

9.2* Access Features, Assessment Features, Ventilation Features, and Utility Shutoffs. Symbols for access features, assessment features, ventilation features, and utility shutoffs shall be as given in Table 9.2.

9.3 Detection/Extinguishing Equipment. Symbols for detection/extinguishing equipment shall be as given in Table 9.3.

9.4 Water Flow Control Valves and Water Sources. Symbols for water flow control valves and water sources shall be as given in Table 9.4.

9.5 Equipment Rooms. Symbols for equipment rooms shall be as given in Table 9.5.

9.6* Identification of Hazardous Materials. NFPA 704 shall be permitted to be used to identify the location of hazardous materials within a structure.

Table 9.2 Symbols for Access Features, Assessment Features, Ventilation Features, and Utility Shutoffs

| Symbol | Description | Comments |
|---|--|-------------|
|  | Access features, assessment features, ventilation features, and utility shutoffs | Basic shape |
|  | Access feature — fire department access point | |
|  | Access feature — fire department key box | |
|  | Access feature — roof access | |
|  | Assessment feature — fire alarm annunciator panel | |
|  | Assessment feature — fire alarm reset panel | |
|  | Assessment feature — fire alarm voice communication panel | |
|  | Assessment feature — smoke control and pressurization panel | |
|  | Assessment feature — sprinkler system water flow bell | |
|  | Ventilation feature — skylight | |
|  | Ventilation feature — smoke vent | |
|  | Utility shutoff — electric | |
|  | Utility shutoff — domestic water | |
|  | Utility shutoff — gas | |
|  | Specific variations — LP-Gas shutoff | |
|  | Specific variations — natural gas shutoff | |
|  | Specific variations — compressed natural gas shutoff | |

Table 9.3 Symbols for Detection/Extinguishing Equipment

| Symbol | Description | Comments |
|---|--|-------------|
|  | Detection/ extinguishing equipment | Basic shape |
|  | Duct detector | |
|  | Heat detector | |
|  | Smoke detector | |
|  | Flow switch (water) | |
|  | Manual station — pull station/fire alarm box | |
|  | Tamper switch | |
|  | Halon system | |
|  | Dry chemical system | |
|  | Carbon dioxide system | |
|  | Wet chemical system | |
|  | Foam system | |
|  | Clean agent system | |
|  | Beam smoke detector | |

Table 9.4 Symbols for Water Flow Control Valves and Water Sources

| Symbol | Description | Comments |
|---|---|-------------|
|  | Water flow control valves and water sources | Basic shape |
|  | Post-indicator valve | |
|  | Riser valve | |
|  | Sprinkler zone valve | |
|  | Sectional control valve | |
|  | Hose cabinet or connection | |
|  | Wall hydrant | |
|  | Test header (fire pump) | |
|  | Inspector's test connection | |
|  | Fire hydrant | |
|  | Fire department connection | |
|  | Drafting site | |
|  | Water tank | |

Table 9.5 Symbols for Equipment Rooms

| Symbol | Description | Comments |
|---|---------------------------------|---------------------------|
|  | Equipment rooms | Basic shape |
|  | Air-conditioning equipment room | AHUs = air-handling units |
|  | Elevator equipment room | |
|  | Emergency generator room | |
|  | Fire pump room | |
|  | Telephone equipment room | |
|  | Boiler room | |
|  | Electrical/transformer room | |

Chapter 10 Symbology for Emergency Management Mapping

10.1 Damage Operational Symbols. Table 10.1 shall be used to cross-reference the damage operational symbols with their definitions.

10.2 Operations Symbology.

10.2.1 Organizations, services, capabilities, or resources available during or implemented due to an emergency management situation.

10.2.2 Table 10.2.2 shall be used to cross-reference the operations symbols with their definitions.

10.3 Incidents Symbology.

10.3.1 Table 10.3.2 shall be used to depict 8 themes and 42 features that symbolize a “cause of action” or a “source of disaster.”

10.3.2 Table 10.3.2 shall be used to cross-reference the incidents symbols with their definitions.

10.4 Natural Events Symbology.

10.4.1 A natural event shall be a phenomenon found in or created by naturally occurring conditions.

10.4.2 Table 10.4.2 shall be used to cross-reference the natural events symbols with their definitions.

10.5 Infrastructures Symbology.

10.5.1 Infrastructure shall be the basic facilities, services, and installations needed for the functioning of a community or society, such as transportation and communications systems, water and power lines, and public institutions, including schools, post offices, and prisons.

10.5.2 Table 10.5.2 shall be used to cross-reference the infrastructures symbols with their definitions.

Table 10.1 Damage Operational Symbology Reference

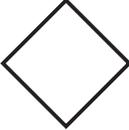
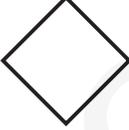
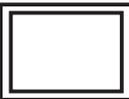
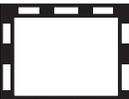
| Symbol Types and Terms | Symbols | Definitions |
|--|---|---|
| Incident (No levels) (violet) |  | Not applicable |
| Natural Event (No levels) (black) |  | Not applicable |
| Operation (Level 1) (green) |  | Fully operational/open |
| Operation (Level 2) (blue) |  | Operational, but filled to capacity or otherwise closed |
| Operation (Level 3) (orange) |  | Operational, but partially damaged or partially incapacitated |
| Operation (Level 4) (red) |  | Destroyed or totally incapacitated |
| Infrastructure (Level 1) (green) |  | Fully operational/open |
| Infrastructure (Level 2) (blue) |  | Operational, but filled to capacity or otherwise closed |
| Infrastructure (Level 3) (orange) |  | Operational, but partially damaged or partially incapacitated |
| Infrastructure (Level 4) (red) |  | Destroyed or totally incapacitated |

Table 10.2.2 Operations Symbology Reference

| Symbol Types and Terms | Symbols | Keystroke | Definitions |
|---|---|-----------|--|
| Operations Background Symbol (Background) |  | ! | The background fill shape for the Operations symbol, Level 1 |
| Operations Frame Symbol (Frame) |  | # | The frame shape for the Operations symbol, Level 1 |
| Emergency Medical Operation (Theme) |  | A | Urgent and unexpected medicinal treatment and/or transport during serious situations that require immediate action ¹ |
| Ambulance (Emergency Medical Feature) |  | B | A vehicle for taking sick or wounded people to and from a hospital |
| EMT Station Locations (Emergency Medical Feature) |  | C | The locus of an emergency medical team |
| Medical Evacuation Helicopter Station (Emergency Medical Feature) |  | D | The locus of an emergency helicopter landing pad, utilized to transport severely injured persons |
| Health Department Facility (Emergency Medical Feature) |  | E | The locus of a facility operated by a public institution that is dedicated to promotion of health and prevention of disease at the community, county, state, or national level ² |
| Hospital (Emergency Medical Feature) |  | F | The locus of an institution where the sick or injured are given medical or surgical care |
| Hospital Ship (Emergency Medical Feature) |  | G | The locus of a ship where the sick or injured are given medical or surgical care |
| Medical Facilities Outpatient (Emergency Medical Feature) |  | H | The locus of a facility providing medical treatment to patients whose sickness or injury does not require hospitalization |
| Morgue (Emergency Medical Feature) |  | I | The locus of a place where the bodies of persons found dead are kept until identified and claimed by relatives or released for burial ³ |
| Pharmacies (Emergency Medical Feature) |  | J | The locus of a place where medicines are compounded or dispensed ³ |
| Triage (Emergency Medical Feature) |  | K | The locus of a place where sorting and allocation of treatment to patients (especially victims of war or disaster) are performed according to a system of priorities designed to maximize the number of survivors ³ |

(continues)

Table 10.2.2 *Continued*

| Symbol Types and Terms | Symbols | Keystroke | Definitions |
|---|---------|-----------|---|
| Emergency Operation (Theme) | | L | Those actions taken during the emergency period to protect life and property, care for the people affected, and temporarily restore essential community services ⁴ |
| Emergency Collection/Evacuation Point (Emergency Operation Feature) | | M | A designated place where displaced persons or victims of war or disaster are assembled and/or evacuated from |
| Emergency Incident Command Center (Emergency Operation Feature) | | N | The physical location from which an incident commander manages an incident ⁵ |
| Emergency Operations Center (Emergency Operation Feature) | | O | The physical location where an organization comes together during an emergency to coordinate response and recovery actions and resources and make management decisions ⁶ |
| Emergency Public Information Center (Emergency Operation Feature) | | P | No definition |
| Emergency Public Service Center (Emergency Operation Feature) | | Q | No definition |
| Emergency Shelters (Emergency Operation Feature) | | R | The locus of a designated emergency/relief shelter |
| Emergency Staging Areas (Emergency Operation Feature) | | S | A designated place where emergency response forces, equipment, and supplies are assembled prior to engagement in operations |
| Emergency Teams (Emergency Operation Feature) | | T | The locus of an emergency response team |
| Emergency Water Distribution Center (Emergency Operation Feature) | | U | A place where potable water is distributed to displaced persons or victims of war or disaster |
| Emergency Food Distribution Centers (Emergency Operation Feature) | | V | A place where food is distributed to displaced persons or victims of war or disaster |
| Fire Suppression Operation (Theme) | | W | The extinguishing of a burning (and flaming) object by means of applying an agent, such as water ⁷ |

(continues)

Table 10.2.2 *Continued*

| Symbol Types and Terms | Symbols | Keystroke | Definitions |
|--|---|-----------|---|
| Fire Hydrant (Fire Suppression Feature) |  | X | A discharge pipe with a valve and spout from which water can be drawn from a water main in sufficient volume and at sufficient pressure for fire-fighting purposes ⁸ |
| Other Water Supply Location (Fire Suppression Feature) |  | Y | Any source of water other than a fire hydrant that is sufficient for the purpose of fire fighting |
| Fire Station (Fire Suppression Feature) |  | Z | A facility housing fire-fighting equipment and/or personnel |
| Law Enforcement Operation (Theme) |  | a | Act of ensuring obedience to the laws ⁹ |
| ATF (Law Enforcement Feature) |  | b | A locus of U.S. Bureau of Alcohol, Tobacco, and Firearms facilities, equipment, or personnel |
| Border Patrol (Law Enforcement Feature) |  | c | A locus of U.S. Border Patrol facilities, equipment, or personnel |
| Customs Service (Law Enforcement Feature) |  | d | A locus of U.S. Customs Service facilities, equipment, or personnel |
| DEA (Law Enforcement Feature) |  | e | A locus of U.S. Drug Enforcement Administration facilities, equipment, or personnel |
| DOJ (Law Enforcement Feature) |  | f | A locus of U.S. Department of Justice facilities, equipment, or personnel |
| FBI (Law Enforcement Feature) |  | g | A locus of Federal Bureau of Investigation facilities, equipment, or personnel |
| Police (Law Enforcement Feature) |  | h | A locus of federal, state, or local police facilities, equipment, or personnel |
| Prison (Law Enforcement Feature) |  | i | A facility for the confinement of persons convicted of serious crimes ³ |
| Secret Service (Law Enforcement Feature) |  | j | A locus of U.S. Secret Service facilities, equipment, or personnel |
| TSA (Law Enforcement Feature) |  | k | A locus of U.S. Transportation Security Administration facilities, equipment, or personnel |

(continues)

Table 10.2.2 *Continued*

| Symbol Types and Terms | Symbols | Keystroke | Definitions |
|---|---|-----------|--|
| U.S. Coast Guard (Law Enforcement Feature) |  | l | A locus of U.S. Coast Guard facilities, equipment, or personnel |
| U.S. Marshals Service (Law Enforcement Feature) |  | m | A locus of U.S. Marshals Service facilities, equipment, or personnel |
| Sensor Operation (Theme) |  | n | A device that receives and responds to a signal or stimulus ⁹ |
| Biological Sensor (Sensor Operation Feature) |  | o | A device designed to respond to the presence of one or more biological substances and to transmit a resulting impulse ¹⁰ |
| Chemical Sensor (Sensor Operation Feature) |  | p | A device designed to respond to the presence of one or more chemicals and to transmit a resulting impulse ¹⁰ |
| Intrusion Sensor (Sensor Operation Feature) |  | q | A device designed to respond to physical penetration of, or attempts to physically penetrate, a protected area or spatial volume and to transmit a resulting impulse ¹⁰ |
| Nuclear Sensor (Sensor Operation Feature) |  | r | A device designed to respond to one or more decay product(s) of one or more radioactive nuclides and to transmit a resulting impulse ¹¹ |
| Radiological Sensor (Sensor Operation Feature) |  | s | A device designed to respond to one or more decay product(s) of one or more radioactive nuclides and to transmit a resulting impulse ¹¹ |

¹Source: www.dictionary.com; combined definition of *emergency* and *medical*.²Source: Based on the APHA public health mission statement.³Source: Merriam-Webster Online.⁴Source: Adapted from San Diego State University Emergency Plan glossary, <http://bfa.sdsu.edu/emergencyplan/glossary.htm>.⁵Source: Commonwealth of Virginia ICS, www.vdftp.state.va.us/components.htm.⁶Source: EMS web site, www.emsresponder.com.⁷Source: Adapted from www.firewise.org glossary of terms.⁸Source: Adapted from Merriam-Webster Online definition of *hydrant*.⁹Source: www.dictionary.com.¹⁰Source: Adapted from Merriam-Webster Online definition of *sensor*.¹¹Source: Adapted from Merriam-Webster Online definition of *sensor* and knowledge of the process, detection, and measurement of radioactivity.

Table 10.3.2 Incidents Symbology Reference

| Symbol Types and Terms | Symbols | Keystroke | Definitions |
|--|---|-----------|---|
| Incidents Stage 01 Background Symbol (Background) |  | ! | The background fill shape for the Incidents symbol, Level 1 |
| Incidents Stage 01 Frame Symbol (Frame) |  | # | The frame shape for the Incidents symbol, Level 1 |
| Civil Disturbance Incident (Theme) |  | A | Human activities resulting in the disrupting of services or requiring varying levels of support, law enforcement, or attention |
| Civil Demonstrations (Civil Disturbance Feature) |  | B | A public display of group feelings toward a person or cause ¹ |
| Civil Displaced Population (Civil Disturbance Feature) |  | C | Persons or groups of people who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, violations of human rights, or natural or human-made disasters ² |
| Civil Rioting (Civil Disturbance Feature) |  | D | A public disturbance involving (1) an act or acts of violence by one or more persons part of an assemblage of three or more persons, which act or acts shall constitute a clear and present danger of, or shall result in, damage or injury to the property of any other person or to the person of any other individual, or (2) a threat or threats of the commission of an act or acts of violence by one or more persons part of an assemblage of three or more persons having, individually or collectively, the ability of immediate execution of such threat or threats, where the performance of the threatened act or acts of violence would constitute a clear and present danger of, or would result in, damage or injury to the property of any other person or to the person of any other individual ³ |
| Criminal Activity Incident (Theme) |  | E | An unlawful pursuit or action in which an individual participates ⁴ |
| Bomb Threat (Criminal Activity Feature) |  | F | A warning of the possible presence of a bomb or expression of the intention to detonate a bomb |
| Bomb (Criminal Activity Feature) |  | G | An explosive device fused to detonate under specific conditions ⁵ |
| Bomb Explosion (Criminal Activity Feature) |  | H | A violent outburst resulting from detonation of a chemical or nuclear explosive or from the loss of a high pressure vessel's integrity |

(continues)

Table 10.3.2 *Continued*

| Symbol Types and Terms | Symbols | Keystroke | Definitions |
|--|---|-----------|---|
| Looting (Criminal Activity Feature) |  | I | Burglary committed within an affected area during an emergency ⁶ |
| Poisoning (Criminal Activity Feature) |  | J | Use of a poisonous substance to injure or kill ¹ |
| Shooting (Criminal Activity Feature) |  | K | Use of a firearm to kill or injure or to damage property ¹ |
| Fire Incident (Theme) |  | L | The destructive act of something burning, caused by electrical or technological malfunction, lightning, arson, human error, or human negligence |
| Hot Spot (Fire Incident Feature) |  | P | An area of intensified fire activity and increased heat or a particularly active part of a fire |
| Non-Residential Fire (Fire Incident Feature) |  | Q | A fire that originates at or affects a non-residential or commercial facility, resulting in partial damage or total destruction of the structure and/or bodily injury, smoke inhalation, or death |
| Origin (Fire Incident Feature) |  | R | Location of where the fire started ⁷ |
| Residential Fire (Fire Incident Feature) |  | S | A fire affecting a home or housing complex, resulting in partial or total destruction of the structure and/or bodily injury, smoke inhalation, or death |
| School Fire (Fire Incident Feature) |  | T | A fire that originates at or affects an educational facility, resulting in partial or total destruction of the structure and/or bodily injury, smoke inhalation, or death |
| Smoke (Fire Incident Feature) |  | U | The visible products of combustion rising above the fire ⁸ |
| Special Needs Fire (Fire Incident Feature) |  | V | A fire that affects special treatment facilities, such as nursing homes or assisted living centers, resulting in partial or total destruction of the structure and/or bodily injury, smoke inhalation, or death |
| Wild Fire (Fire Incident Feature) |  | W | An uncontrolled fire in a wooded area ⁹ |
| Hazardous Incident (Theme) |  | X | See footnote. ¹⁰ |

(continues)

Table 10.3.2 *Continued*

| Symbol Types and Terms | Symbols | Keystroke | Definitions |
|---|---|-----------|--|
| Chemical Agent (Hazardous Incident Feature) |  | Y | A chemical substance that is intended for use in military operations to kill, resulting in psychological disorientation, serious injury, incapacitation, or death ¹¹ |
| Corrosive Material (Hazardous Incident Feature) |  | Z | Uncontrolled or potentially dangerous presence of a liquid or solid that causes full thickness destruction of human skin at the site of contact within a specified period of time |
| Dangerous When Wet (Hazardous Incident Feature) |  | a | Uncontrolled or potentially dangerous presence of a material that, by contact with water, is liable to become spontaneously flammable or to give off flammable or toxic gas at a rate greater than 1 L/hr per kilogram of the material per hour (0.48 qt/hr/lb) |
| Explosive (Hazardous Incident Feature) |  | b | Uncontrolled or potentially dangerous presence of any substance or article, including a device that is designed to function by explosion (i.e., an extremely rapid release of gas and heat) or that, by chemical reaction within itself, is able to function in a similar manner even if not designed to function by explosion |
| Flammable Gas (Hazardous Incident Feature) |  | c | Uncontrolled or potentially dangerous presence of any material that is a gas at 20°C (68°F) or less and 101.3 kPa (14.7 psia) of pressure [a material that has a boiling point of 20°C (68°F) or less at 101.3 kPa (14.7 psia)], that is ignitable at 101.3 kPa (14.7 psia) when in a mixture of 13 percent or less by volume with air, or that has a flammable range at 101.3 kPa (14.7 psia) with air of at least 12 percent regardless of the lower limit |
| Flammable Liquid (Hazardous Incident Feature) |  | d | Uncontrolled or potentially dangerous presence of a liquid having a flash point of not more than 60.5°C (141°F) |
| Flammable Solid (Hazardous Incident Feature) |  | e | Uncontrolled or potentially dangerous presence of desensitized explosives that when dry are explosives of Class 1, which are wetted with sufficient water, alcohol, or plasticizer to suppress explosive properties |
| Nonflammable Gas (Hazardous Incident Feature) |  | f | Uncontrolled or potentially dangerous presence of any material (or mixture) that exerts in the packaging an absolute pressure of 280 kPa (40.6 psia) or greater at 20°C (68°F) and is not classified as a flammable gas |
| Organic Peroxides (Hazardous Incident Feature) |  | g | No definition |
| Oxidizers (Hazardous Incident Feature) |  | h | Uncontrolled or potentially dangerous presence of a material that can, generally by yielding oxygen, cause or enhance the combustion of other materials |
| Radioactive Material (Hazardous Incident Feature) |  | i | Uncontrolled or potentially dangerous presence of any material having a specific activity greater than 70 Bq/g (17 µCi/oz) |

(continues)

Table 10.3.2 *Continued*

| Symbol Types and Terms | Symbols | Keystroke | Definitions |
|--|---|-----------|--|
| Spontaneously Combustible (Hazardous Incident Feature) |  | j | Uncontrolled or potentially dangerous presence of a liquid or solid that, even in small quantities and without an external ignition source, can ignite within 5 minutes after coming in contact with air or a material that, when in contact with air and without an energy supply, is liable to self-heat |
| Toxic Gas (Hazardous Incident Feature) |  | k | Uncontrolled or potentially dangerous presence of a gas that presents a hazard to human health |
| Toxic and Infectious (Hazardous Incident Feature) |  | l | Uncontrolled or potentially dangerous presence of a poisonous substance that is a specific product of the metabolic activities of a living organism and is usually very unstable and can easily be transferred between organisms |
| Unexploded Ordnance (Hazardous Incident Feature) |  | m | Uncontrolled or potentially dangerous presence of an unexploded weapon or ammunition |
| Air Incident (Theme) |  | n | An event involving aircraft resulting in damage, bodily injury, death, or the disruption of transportation service |
| Air Accident (Air Incident Feature) |  | o | A sudden, unexpected event involving aircraft resulting in fuselage damage, bodily injury, death, and/or the disruption of transportation service, prompting emergency landing procedures or uncontrolled impact with the ground |
| Air Hijacking (Air Incident Feature) |  | p | The unexpected, unlawful, and forceful seizure of control aboard an aircraft by an individual or group of individuals resulting in passenger and crew endangerment, injury or death, and/or the redirection of flight destination ¹² |
| Marine Incident (Theme) |  | q | An event involving a boat or ship and resulting in damage, bodily injury, death, or the disruption of transportation service |
| Marine Accident (Marine Incident Feature) |  | r | A sudden, unexpected event involving a boat or ship and resulting in vessel submerging, damage, bodily injury, death, and/or the disruption of transportation service |
| Marine Hijacking (Marine Incident Feature) |  | s | The unexpected, unlawful, and forceful seizure of control aboard a boat or ship by an individual or group of individuals resulting in passenger and crew endangerment, injury or death, and/or the redirection of destination ¹² |
| Rail Incident (Theme) |  | t | An event involving a train and resulting in damage, bodily injury, death, or the disruption of transportation service |
| Rail Accident (Rail Incident Feature) |  | u | A sudden, unexpected event involving a wheeled or tracked vehicle resulting in derailment, damage, bodily injury, death, and/or the disruption of transportation service |

(continues)

Table 10.3.2 *Continued*

| Symbol Types and Terms | Symbols | Keystroke | Definitions |
|--|---|-----------|---|
| Rail Hijacking (Rail Incident Feature) |  | v | The unexpected, unlawful, and forceful seizure of control aboard a wheeled or tracked vehicle by an individual or group of individuals resulting in passenger and crew endangerment, injury or death, and/or the redirection of destination ¹² |
| Vehicle Incident (Theme) |  | w | An event involving a wheeled or tracked vehicle and resulting in damage, bodily injury, death, or the disruption of transportation service |
| Vehicle Accident (Vehicle Incident Feature) |  | x | A sudden, unexpected event involving a vehicle and resulting in damage, bodily injury, death, and/or the disruption of transportation service |
| Vehicle Hijacking (Vehicle Incident Feature) |  | y | The unexpected, unlawful, and forceful seizure of control aboard a vehicle by an individual or group of individuals resulting in passenger and crew endangerment, injury or death, and/or the redirection of destination ¹² |

Notes:

¹Source: Merriam-Webster Online Dictionary.²Source: United Nations *Guiding Principles on Internally Displaced Persons*, 1998.³Source: 18 USC Section 2102.⁴Source: www.dictionary.com; combined definitions of *criminal* and *activity*.⁵Source: International military definition.⁶Source: <http://peace-officers.com/glossary>.⁷Source: U.S. Department of Agriculture, Forest Service, www.fs.fed.us.⁸Source: www.firewise.org⁹Source: www.realdictionary.com.¹⁰ All the proposed definitions for *hazardous incident* are from the Office of Hazardous Materials Safety, Hazmat Regulations and Interpretations.¹¹Source: Adapted from NATO definition, www.nato.int/docu/stanag/aap006/aap6.htm.¹²Source: www.dictionary.com, definition of *hijack*.

Table 10.4.2 Natural Events Symbolgy Reference

| Symbol Types and Terms | Symbols | Keystroke | Definition |
|--|---|-----------|---|
| Natural Events Stage 01 Background Symbol (Background) |  | ! | The background fill shape for the Natural Events symbol, Level 1 |
| Natural Events Stage 01 Frame Symbol (Frame) |  | # | The frame shape for the Natural Events symbol, Level 1 |
| Geologic (Theme) | Reserved | | |
| Aftershock (Geologic Feature) |  | A | An earthquake that follows a larger earthquake and originates at or near the latter's focus ¹ |
| Avalanche (Geologic Feature) |  | B | A large mass of snow, ice, soil, or rock, or mixtures of these materials, falling, sliding, or flowing very rapidly under the force of gravity ¹ |
| Earthquake Epicenter (Geologic Feature) |  | C | The point on the earth's surface directly above the focus of an earthquake ¹ |
| Landslide (Geologic Feature) |  | D | A general term for a wide variety of processes and landforms involving the down slope movement under the force of gravity of masses of soil and rock material ¹ |
| Subsidence (Geologic Feature) |  | E | Sinking or downward settling of the Earth's surface ¹ |
| Volcanic Eruption (Geologic Feature) |  | F | The ejection of volcanic materials (lava, pyroclasts, and volcanic gases) from a vent or fissure in the Earth's crust ¹ |
| Volcanic Threat (Geologic Feature) |  | G | A vent or fissure in the Earth's crust where volcanic eruption is believed to be imminent ² |
| Hydro-Meteorologic (Theme) | Reserved | | |
| Drizzle (Hydro-Meteorologic Feature) |  | H | Sometimes called <i>mist</i> ; very small, numerous, and uniformly dispersed water droplets that appear to float while following air currents and that, unlike fog droplets, fall to the ground |
| Drought (Hydro-Meteorologic Feature) |  | I | A period of abnormally dry weather sufficiently prolonged for the lack of water to cause a serious hydrologic imbalance across the affected area. Drought severity depends upon the degree of moisture deficiency, the duration, and (to a lesser extent) the size of the affected area. In general, the term should be reserved for periods of moisture deficiency that are relatively extensive in both space and time. |

(continues)

Table 10.4.2 *Continued*

| Symbol Types and Terms | Symbols | Keystroke | Definition |
|---|---|-----------|---|
| Flood (Hydro-Meteorologic Feature) |  | J | A relatively high stream flow that overtops the stream banks in any part of its course, covering land that is not normally under water ¹ ; a condition that occurs when water overflows the natural or artificial confines of a stream or other body of water, or accumulates by drainage over low-lying areas |
| Fog (Hydro-Meteorologic Feature) |  | K | A visible aggregate of minute water droplets suspended in the atmosphere near the Earth's surface [According to international definition, fog reduces visibility to less than 1 km (3/8 mi). Fog differs from clouds only in that the base of the fog is at the Earth's surface, while clouds are above the surface.] |
| Hail (Hydro-Meteorologic Feature) |  | L | Precipitation in the form of circular or irregular-shaped lumps of ice ³ |
| Inversion (Hydro-Meteorologic Feature) |  | M | A departure from the standard decrease or increase with altitude of value of an atmosphere property; almost always used to mean temperature inversion |
| Rain (Hydro-Meteorologic Feature) |  | N | Precipitation in the form of liquid water drops that have diameters greater than 0.5 mm (0.2 in.) |
| Sand Dust Storm (Hydro-Meteorologic Feature) |  | O | A strong wind carrying sand through the air, the diameter of most of the particles ranging from 0.08 mm to 1 mm (0 to 0.04 in.); in contrast to a dust storm, sand particles mostly confined to the lowest 0.6 m (2 ft) and rarely rising more than 15.2 m (50 ft) above the ground |
| Snow (Hydro-Meteorologic Feature) |  | P | Precipitation composed of white or translucent ice crystals, chiefly of complex branched hexagonal form and often agglomerated into snowflakes |
| Thunderstorm (Hydro-Meteorologic Feature) |  | Q | A consequence of atmospheric instability that constitutes an overturning of layers in order to achieve a more stable atmosphere; generally produces lightning, thunder, strong gusts of wind, heavy rain, and sometimes hail |
| Tornado (Hydro-Meteorologic Feature) |  | R | A violently rotating column, or funnel, of air in contact with the ground and extending from the base of a thunderstorm ³ |
| Tropical Cyclone (Hydro-Meteorologic Feature) |  | S | The general term for a cyclone that originates over the tropical oceans |
| Tsunami (Hydro-Meteorologic Feature) |  | T | A great sea wave produced by an earthquake or volcanic eruption, characterized by high speed of propagation, long wavelength, long period, and low observable amplitude on the open ocean ¹ ; can reach enormous dimensions and has sufficient energy to travel across entire oceans; no connection with tides, as can be inferred from the commonly used term <i>tidal wave</i> |
| Infestation (Theme) | Reserved | | |

(continues)

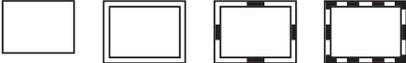
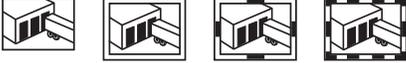
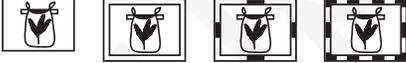
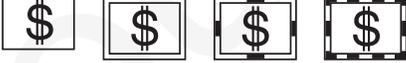
Table 10.4.2 *Continued*

| Symbol Types and Terms | Symbols | Keystroke | Definition |
|---|---|-----------|---|
| Bird Infestation (Infestation Feature) |  | U | A harassing or troublesome invasion of birds ⁴ |
| Insect Infestation (Infestation Feature) |  | V | A harassing or troublesome invasion of insects |
| Microbial Infestation (Infestation Feature) |  | W | A harassing or troublesome invasion of microbes |
| Reptile Infestation (Infestation Feature) |  | X | A harassing or troublesome invasion of reptiles |
| Rodent Infestation (Infestation Feature) |  | Y | A harassing or troublesome invasion of rodents |

Notes:

¹Source: *Dictionary of Geological Terms*, 3rd edition.²Source: Logical extension of *volcanic eruption*.³Source: Adapted from National Weather Service glossary, www.nws.noaa.gov/glossary.htm.⁴Source: Derived from the definition of *infestation* in FactMonster.com dictionary.

Table 10.5.2 Infrastructure Symbology Reference

| Symbol Types and Terms | Symbols | Keystroke | Definitions |
|--|---|-----------|--|
| Infrastructures Background Symbol (Background) |  | ! | The background fill shape for the Infrastructures symbol, Level 1 |
| Infrastructures Frame Symbol (Frame) |  | # | The frame shape for the Infrastructures symbol, Level 1 |
| Agriculture and Food Infrastructure (Theme) |  | \$ | Production and retail services of foodstuffs |
| Agricultural Laboratory (Agriculture and Food Feature) |  | % | Facilities used for scientific research in farming |
| Animal Feedlot (Agriculture and Food Feature) |  | & | Area designated for feeding livestock |
| Commercial Food Distribution Center (Agriculture and Food Feature) |  | (| Facility used for the disbursement of marketable foodstuffs |
| Farm/Ranch (Agriculture and Food Feature) |  |) | A piece of land on which crops or animals are raised |
| Food Production Center (Agriculture and Food Feature) |  | * | The locus where foodstuffs are produced |
| Food Retail (Agriculture and Food Feature) |  | + | Facility where foodstuffs are sold for a profit |
| Grain Storage (Agriculture and Food Feature) |  | ' | Facility used for the housing of cereal seeds such as corn, wheat, or barley |
| Banking, Finance, and Insurance Infrastructure (Theme) |  | - | The management of money and other assets and their protection ¹ |
| ATM (Banking, Finance, and Insurance Feature) |  | . | An unattended machine commonly located at a bank's exterior that dispenses money when a personal coded card is inserted ² |
| Bank (Banking, Finance, and Insurance Feature) |  | / | A business establishment in which money is kept for saving for commercial purposes or is invested, supplied for loans, or exchanged ¹ |
| Bullion Storage (Banking, Finance, and Insurance Feature) |  | 0 | A facility used to deposit and warehouse gold or silver bars or ingots ³ |
| Federal Reserve Bank (Banking, Finance, and Insurance Feature) |  | 1 | One of twelve regional banks that monitor and act as depositories for banks in their region ² |

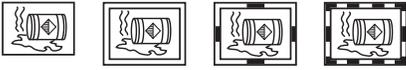
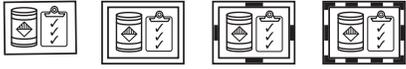
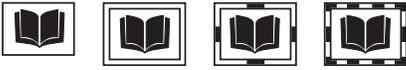
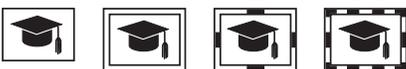
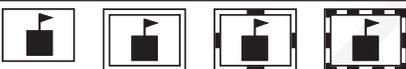
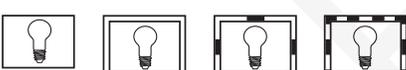
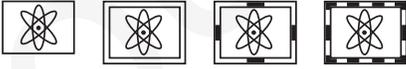
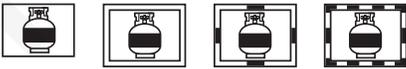
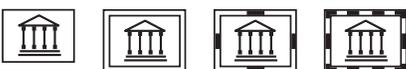
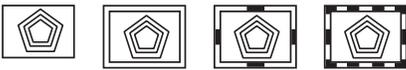
(continues)

Table 10.5.2 *Continued*

| Symbol Types and Terms | Symbols | Keystroke | Definitions |
|---|---|-----------|---|
| Financial Exchange (Banking, Finance, and Insurance Feature) |     | 2 | A marketplace in which shares, options, and futures on stocks, bonds, commodities, and indexes are traded ⁴ |
| Financial Service Other (Banking, Finance, and Insurance Feature) |     | 3 | A business establishment, other than a bank, for the provision of financial or monetary-related products and services; a location that deals with money management business |
| Commercial Infrastructure (Theme) |     | 4 | The locus of where a business enterprise is undertaken ² |
| Chemical Plant (Commercial Infrastructure Feature) |     | 5 | An industrial site where chemical substances and/or compounds are produced ² |
| Firearm Manufacturer (Commercial Infrastructure Feature) |     | 6 | A location where hand weapons of explosive force when shot are mass produced ⁵ |
| Firearm Retailer (Commercial Infrastructure Feature) |     | 7 | A location where hand weapons of explosive force when shot are sold ⁶ |
| Hazardous Material Production (Commercial Infrastructure Feature) |     | 8 | The locus of where hazardous chemicals and/or substances are produced and stored under regulated conditions |
| Hazardous Material Storage (Commercial Infrastructure Feature) |     | 9 | A storing location for a substance or combination of substances that, because of quantity, concentration, or physical, chemical, radiological, explosive, or infectious characteristics, poses a potential danger to humans and/or the environment ⁷ |
| Industrial Site (Commercial Infrastructure Feature) |     | : | The locus of an industrial facility or facilities used for the commercial production and selling of manufactured goods ¹ |
| Landfill (Commercial Infrastructure Feature) |     | ; | An area of land or an excavation in which wastes are placed for permanent disposal, and which is not a land application unit, surface impoundment, injection well, or waste pile ⁸ |
| Pharmaceutical Manufacturer (Commercial Infrastructure Feature) |     | = | The location where medicinal drugs are mass produced ⁹ |

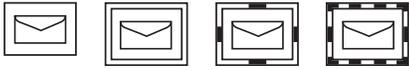
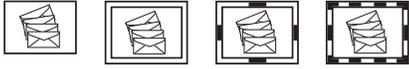
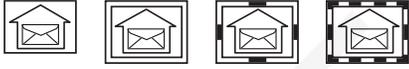
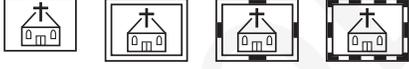
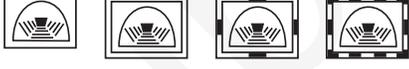
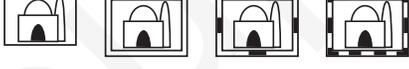
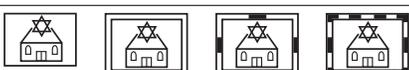
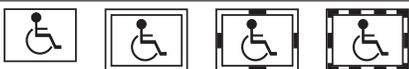
(continues)

Table 10.5.2 *Continued*

| Symbol Types and Terms | Symbols | Keystroke | Definitions |
|---|---|-----------|---|
| Superfund Site National Priorities List (Commercial Infrastructure Feature) |  | ? | A location in the United States that has been contaminated by hazardous waste and identified by the Environmental Protection Agency as a candidate for cleanup because it poses a risk to human health and/or the environment ¹⁰ |
| Toxic Release Inventory (Commercial Infrastructure Feature) |  | @ | The location according to a publicly available database of chemical and other toxic waste releases ¹⁰ |
| Educational Facilities Infrastructure (Theme) |  | A | A building or collection of buildings or places in which knowledge is provided ¹¹ |
| College/University (Educational Facilities Feature) |  | B | An institution of higher learning offering courses of studies leading to bachelor's, master's, or doctoral degrees ¹² |
| School (Educational Facilities Feature) |  | C | A facility for the primary and secondary education of children ¹³ |
| Energy Facilities Infrastructure (Theme) |  | D | A building or collection of buildings and/or places that generates and provides electrical power |
| Generation Station (Energy Facilities Feature) |  | E | A facility equipped with special equipment used for the production of heat or electricity ¹⁴ |
| Natural Gas Facility (Energy Facilities Feature) |  | F | A location equipped with special equipment used to generate natural gas power |
| Nuclear Facility (Energy Facilities Feature) |  | G | A location equipped with special equipment used to generate nuclear power |
| Petroleum Facility (Energy Facilities Feature) |  | H | A building or place that provides and distributes petroleum gas |
| Propane Facility (Energy Facilities Feature) |  | I | A building or place that provides and distributes propane gas |
| Government Site Infrastructure (Theme) |  | J | The locus of where executive, legislative, and/or judicial activities take place in the service of the government |
| Military Infrastructure (Theme) |  | K | Refers collectively to the four major branches of the United States' armed forces as associated with armed services as contrasted with civilians |

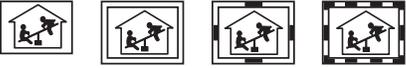
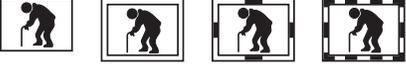
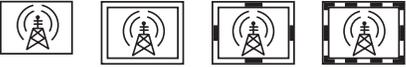
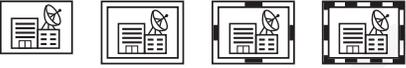
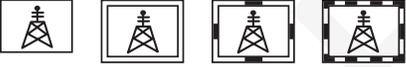
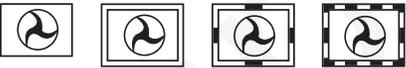
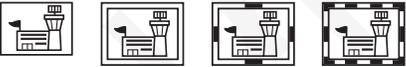
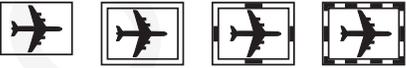
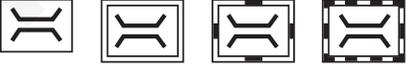
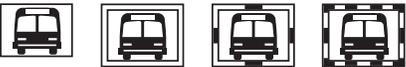
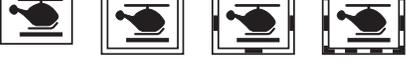
(continues)

Table 10.5.2 *Continued*

| Symbol Types and Terms | Symbols | Keystroke | Definitions |
|---|---|-----------|---|
| Military Armory (Military Feature) |  | L | A military structure where arms and ammunition and other military equipment are manufactured and stored, and also where training is given in the use of arms ² |
| Military Base (Military Feature) |  | M | The locus of where military personnel, weapons, and supplies are located and also where attacks and other operations are coordinated and launched |
| Postal Service Infrastructure (Theme) |  | N | The system whereby letters and other parcels are transmitted and delivered via the post office |
| Postal Distribution Center (Postal Feature) |  | O | A U.S. Postal Service (USPS) facility where mail is sorted and routed |
| Post Office (Postal Feature) |  | P | A USPS facility that directly delivers postal services to the public |
| Public Venue Infrastructure (Theme) |  | Q | An unrestricted place or places and events for a large gathering of people ¹ |
| Church (Public Venues Feature) |  | R | A building for public and especially Christian worship ¹³ |
| Enclosed Facility (Public Venues Feature) |  | S | A roofed facility with walls |
| Mosque (Public Venues Feature) |  | T | A building used for public worship by Muslims ¹³ |
| Open Facility (Public Venues Feature) |  | U | An open-air facility with or without walls, for example, a stadium or a parking lot |
| Recreational Area (Public Venues Feature) |  | V | A place dedicated to the refreshment of strength and spirits after work ¹³ |
| Religious Institution (Public Venues Feature) |  | W | Any place of worship where religious services are held or prayers are said by a congregation loyal to a belief |
| Synagogue (Public Venues Feature) |  | X | The house of worship and communal center of a Jewish congregation ¹³ |
| Temple (Public Venues Feature) |  | Y | A building for Mormon sacred ordinances ¹³ |
| Special Needs Infrastructure (Theme) |  | Z | Of or relating to people who have specific needs, such as those associated with a disability ¹ |

(continues)

Table 10.5.2 *Continued*

| Symbol Types and Terms | Symbols | Keystroke | Definitions |
|--|---|-----------|--|
| Adult Day Care (Special Needs Feature) |  | [| The locus of a nonresidential facility that provides supervision and assisted living services to adults, typically during the daylight hours |
| Child Day Care (Special Needs Feature) |  |] | A service involving care for other people's children ¹ |
| Elder Care (Special Needs Feature) |  | ^ | The locus of a nursing home or a residential assisted-living facility in which full-time care is provided for the chronically ill, disabled, and elderly |
| Telecommunications Infrastructure (Theme) |  | ' | The electronic systems used in transmitting messages, as by telegraph, cable, telephone, radio, television, or computer ¹ |
| Telecommunications Facility (Telecommunications Feature) |  | a | Any facility housing telecommunications equipment, studios, control rooms, or personnel |
| Telecommunications Tower (Telecommunications Feature) |  | b | A structure typically higher than its diameter and high relative to its surroundings to which telecommunications antennae are affixed ¹³ |
| Transportation Infrastructure (Theme) |  | c | Infrastructure, means of transport, and equipment necessary for the movement of passengers and/or goods |
| Air Traffic Control Facility (Transportation Feature) |  | d | A facility operated by the appropriate authority to promote the safe, orderly, and expeditious flow of air traffic ⁸ |
| Airport (Transportation Feature) |  | e | An area of land or other hard surface, excluding water, that is used or intended to be used for the landing and takeoff of aircraft and includes its buildings and facilities, if any ⁸ |
| Bridge (Transportation Feature) |  | f | A structure built over a gap to connect and maintain transportation flow between both sides of the gap ¹⁵ |
| Bus Station (Transportation Feature) |  | g | A terminal that serves bus passengers ² |
| Ferry Terminal (Transportation Feature) |  | h | The location of a vehicle-carrying and commuter boat line terminus ¹ |
| Helicopter Landing Site (Transportation Feature) |  | i | A site within a landing zone that contains one or more points for helicopters to land ¹⁶ |

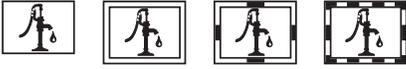
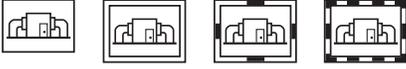
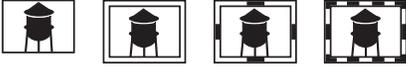
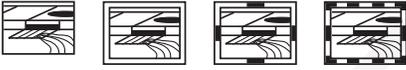
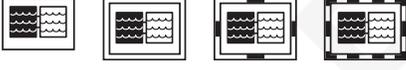
(continues)

Table 10.5.2 *Continued*

| Symbol Types and Terms | Symbols | Keystroke | Definitions |
|--|---------|-----------|---|
| Lock (Transportation Feature) | | j | An enclosed part of a canal or river equipped with gates for raising or lowering the level of water so that boats and other vessels can pass ¹⁵ |
| Maintenance Facility (Transportation Feature) | | k | A location where vehicles, machines, or any other mechanical devices are serviced for inspection or repair ² |
| Port (Transportation Feature) | | l | A location on a waterway with facilities for loading and unloading ships and other vessels ¹ |
| Rail Station (Transportation Feature) | | m | A depot where tracked transport vehicles or trains load and/or unload passengers or goods ¹⁷ |
| Rest Stop (Transportation Feature) | | n | A roadside facility at which motorists can purchase refreshments, use restrooms, and/or acquire area information |
| Ship Anchorage (Transportation Feature) | | o | A location suitable for securely anchoring ships and other vessels ¹ |
| Toll Facility (Transportation Feature) | | p | A gate or booth at which money is collected before and/or after motorists enter or exit a toll road (turnpike) ¹⁵ |
| Traffic Control Point (Transportation Feature) | | q | The location of absolute signals controlled by an operator to regulate and maintain transportation flow |
| Traffic Inspection Facility (Transportation Feature) | | r | Permanent facility equipped with scales where motor (shipping) vehicles transporting goods on public highways are required to stop and obtain gross vehicle and/or axle weights ¹⁸ |
| Tunnel (Transportation Feature) | | s | An underground passageway used to connect and maintain transportation flow between physical or human-built obstructions ¹⁵ |
| Water Supply Infrastructure (Theme) | | t | The storage, disinfection, filtration, and provision of drinking water to the consumer/ community by means of pipelines, pumps, water towers, wells, and other appurtenances ¹⁹ |
| Critical Valve (Water Supply Feature) | | u | A valve that regulates the speed, flow, or pressure of a fluid ²⁰ |
| Dam (Water Supply Feature) | | v | A barrier constructed across a waterway to control the flow or raise the level of water ¹ |

(continues)

Table 10.5.2 Continued

| Symbol Types and Terms | Symbols | Keystroke | Definitions |
|---|---|-----------|--|
| Discharge Outfall (Water Supply Feature) |  | w | The volume of effluent that is released into receiving waters at a given location and within a given period of time ²¹ |
| Ground Well (Water Supply Feature) |  | x | An artificial excavation drilled into the ground for the purposes of withdrawing water from underground aquifers ²² |
| Pumping Station (Water Supply Feature) |  | y | Facility that lifts water up and over hills ²³ |
| Reservoir (Water Supply Feature) |  | z | An off-stream water storage facility that is filled with water pumped from a river or stream ²⁴ |
| Storage Tower (Water Supply Feature) |  | { | A large (usually metallic) container for holding gases or liquids ² |
| Surface Water Intake (Water Supply Feature) |  | } | A pipe through which wastewater is transferred directly to another site ²⁵ |
| Water Treatment Facility (Water Supply Feature) |  | ~ | A place designed to receive the wastewater from domestic sources and to remove materials that damage water quality and threaten public health and safety when discharged into receiving streams or bodies of water ²² |

Notes:

¹Source: Adapted from www.dictionary.com.²Source: Adapted from www.hyperdictionary.com.³Source: www.hyperdictionary.com; combined definitions of *bullion* and *storage*.⁴Source: Yahoo! Finance glossary, <http://biz.yahoo.com/f/g>.⁵Source: *Webster's New World Dictionary*; combined definitions of *firearm* and *manufacture*.⁶Source: *Webster's New World Dictionary*; combined definitions of *firearm* and *retail*.⁷Source: San Diego State University Emergency Plan glossary, <http://bfa.sdsu.edu/emergencyplan/glossary.htm>.⁸Source: Federal Aviation Administration glossary, www.faa.gov/library/glossaries.⁹Source: *Webster's New World Dictionary*; combined definitions of *pharmaceutical* and *manufacture*.¹⁰Source: Environmental Protection Agency, www.epa.gov.¹¹Source: www.hyperdictionary.com; combined definitions of *educational* and *facility*.¹²Source: Adapted from *Merriam-Webster Online* definitions of *college* and *university*.¹³Source: Adapted from *Merriam-Webster Online*.¹⁴Source: www.hyperdictionary.com; combined definitions of *generation* and *station*.¹⁵Source: Adapted from *Webster's New World Dictionary*.¹⁶Source: J. Reimer Training and Doctrine Digital Library, military terms glossary, www.adtdl.army.mil/cgi-bin/atdl.dll/fm/3-21.38/gloss.htm.¹⁷Source: www.hyperdictionary.com, adapted definition of *depot*.¹⁸Source: Nextlinx, www.nextlinx.com/global%5Fcontent/traderefs/glossary.shtml, definition of *weigh station*.¹⁹Source: County of Maui (Hawaii) Water Supply glossary, www.mauiwater.org/glossary.html, combined definitions of *water system* and *treated water*.²⁰Source: "Valve World" glossary, www.valve-world.net/glossary/index.asp, definition of *control valve*.²¹Source: Combined definitions of *outfall* from the Ohio Environmental Protection Agency glossary and *discharge* from the U.S. Geologic Survey, www.epa.state.oh.us/ddagw/documents/swapdocglo.pdf and <http://ga.water.usgs.gov/edu/dictionary.html>.²²Source: Adapted from the U.S. Geological Survey Water Science glossary, <http://ga.water.usgs.gov/edu/dictionary.html>.²³Source: Ridenbaugh Press, www.ridenbaugh.com.²⁴Source: Ohio Environmental Protection Agency glossary (term *upground reservoir*), <http://www.epa.state.oh.us/ddagw/documents/swapdocglo.pdf>.²⁵Source: U.S. Geological Survey Water Resources of New Hampshire and Vermont glossary. Combined definitions of *intake pipe* and *surface water return flow*, http://nh.water.usgs.gov/Publications/OFR01-328/ofr01-328_glossary.pdf.

Chapter 11 Emergency Evacuation Diagrams and Plans

11.1 Introduction. This chapter shall provide requirements on the preparation of floor diagrams and plans, posted within a building, to show the egress evacuation paths and locations of equipment used during an emergency. Building emergency information shall be provided to instruct or guide occupants in how to report an emergency; when to evacuate to the outside evacuation assembly area, to a designated area of refuge, to an area of rescue assistance, or to a designated shelter area; when to remain in place; or when to employ any combination of these options.

11.2 Composition.

11.2.1 The composition of the diagrams shall be clear and simple and able to be quickly understood by occupants within the building. To avoid language barriers, graphic representation and symbols shall be used.

11.2.2* A plan shall show a minimum of two ways to exit from the location of where the diagram/plan is posted, when possible, show the entire floor plan, but when unable to provide a key plan highlighting the area shown in accordance with NFPA 101. A plan shall show a minimum of two ways to exit from the location of where the diagram/plan is posted, showing the entire floor plan in accordance with NFPA 101. When unable to show the entire floor plan, provide a key plan highlighting the area.

11.2.3 The symbols of this standard shall be used to make sure that a legend is provided on the diagram/plan explaining their meaning.

11.2.4 The size of text, symbols, and information shall allow visibility by all occupants.

11.2.5 The diagram shall be located at a height above the floor to be viewable by all occupants. Diagrams shall be located such that all employees and visitors will pass by during their stay in the building.

11.3* Orientation.

11.3.1 All diagrams shall be oriented with the top in the direction that the viewer is facing.

11.3.2 There shall be a notation showing the location of the viewer and their orientation with the "you are here" notation pointing up to the sign location. This shall be the most dominant graphic on the diagram.

11.4 Information Shown.

11.4.1 The information in 11.4.1.1 and 11.4.1.2 shall be shown on the plan area of the diagram or plan. Additional information shall be permitted to be added if it does not confuse the viewer during an emergency.

11.4.1.1 The means of egress from the viewers' location shall be shown. This shall include all exit locations, exit access paths, stairways, elevators, elevator lobbies, areas of refuge, areas of rescue assistance, shelter areas, and exterior outside evacuation assembly areas.

11.4.1.2 The equipment used during an emergency shall be shown in a key or legend. This key or legend shall include fire alarm pull stations, emergency phones, defibrillators (AED), fire extinguishers (if trained to use properly), or any other building-specific emergency equipment.

11.4.2 The diagram or plan shall provide emergency phone numbers.

11.4.3 The diagram or plan shall provide emergency evacuation guidelines describing the different emergency alert signals of when and what to do when the signals are sounded. If there are not any signals, the guidelines shall describe how the occupants will be instructed what to do in case of an emergency.

11.5 Construction. The diagram shall be constructed with materials that protect it from fading and wear.

11.5.1 Materials. Diagrams shall be made of any material including photoluminescent or self-luminous, provided that an electrical charge is not required to maintain the diagram luminescence. Materials shall comply with one of the following:

- (1) ASTM E2072, *Standard Specification for Photoluminescent (Phosphorescent) Safety Markings* and ASTM E2073, *Standard Test Method for Photopic Luminance of Photoluminescent (Phosphorescent) Markings*, or
- (2) ANSI/UL 1994, *Standard for Luminous Egress Path Marking Systems*.

Annex A Explanatory Material

Annex A is not a part of the requirements of this NFPA document but is included for informational purposes only. This annex contains explanatory material, numbered to correspond with the applicable text paragraphs.

A.3.2.2 Authority Having Jurisdiction (AHJ). The phrase "authority having jurisdiction," or its acronym AHJ, is used in NFPA documents in a broad manner, since jurisdictions and approval agencies vary, as do their responsibilities. Where public safety is primary, the authority having jurisdiction may be a federal, state, local, or other regional department or individual such as a fire chief; fire marshal; chief of a fire prevention bureau, labor department, or health department; building official; electrical inspector; or others having statutory authority. For insurance purposes, an insurance inspection department, rating bureau, or other insurance company representative may be the authority having jurisdiction. In many circumstances, the property owner or his or her designated agent assumes the role of the authority having jurisdiction; at government installations, the commanding officer or departmental official may be the authority having jurisdiction.

A.3.2.4 Listed. The means for identifying listed equipment may vary for each organization concerned with product evaluation; some organizations do not recognize equipment as listed unless it is also labeled. The authority having jurisdiction should utilize the system employed by the listing organization to identify a listed product.

A.3.3.3 Referent. A referent can be abstract, such as a condition concept, function, relationship, fact, or action.

A.3.3.5 Supplementary Indicators. Effectiveness of symbols can be supplemented by figures, numbers, subscripts, or letter abbreviations. These supplementary indicators can be placed inside of, or adjacent to, the symbol as seen fit. A legend of these indicators, with their meaning, should accompany each set of documents on which they are used.

A.3.3.6 Symbol. Ideally, a symbol should be graphically simple, should be readily understood, should have a strong impact, and should be easily remembered.

A.4.1.2.3 Changes in line thickness, scale, or details are not recommended. In practice, symbols can be combined with other symbols or devices such as words and lighted panels to provide optimal visual alerting. This chapter does not specify viewing distance, size, or optimal combinations of symbols, words, or other presentations. The user is referred to other standards, such as those prepared by the NFPA Committee on Safety to Life and the ANSI Z535 Committee on Safety Signs and Colors, for such information.

A.4.1.3 Reflective material or self-luminous or photoluminescent materials can be used. Consideration needs to be given to the proper mounting of self-luminous or photoluminescent symbols in well-lighted locations to ensure charging by exposure to ambient light.

A.4.1.3.2.1 See Figure A.4.1.3.2.1.

A.4.1.3.4 Examples of combinations of symbols that can be used include Exit Symbol Arrow, Exit Symbol with International Symbol of Accessibility, and Exit Symbol with Arrow and International Symbol of Accessibility.

A.4.2 Use of the symbols is not restricted to the examples cited.

A.5.1.1 The purpose of this chapter is to present uniform fire-fighting symbols in order to improve communication wherever symbology is employed in order to provide information to fire fighters and other emergency responders.

This chapter provides uniformity in the selection of symbols that are intended to assist fire fighters in locating utilities and fire-fighting equipment.

A.5.1.2 In practice, symbols can be combined with other devices, such as words and lighted panels, to provide optimal visual alerting. This chapter does not specify viewing distance, size, or optimal combinations of symbols, words, and other presentations.

A.5.1.3 Reflective material or self-luminous or photoluminescent materials can be used. Consideration needs to be given to the proper mounting of self-luminous or photoluminescent symbols in well-lighted locations to ensure charging by exposure to ambient light.

A.5.1.3.1 Drawing scale, line thickness, and so forth are the subject of standards on drawing practice.

A.5.2 Use of the symbols is not restricted to the examples cited.

The symbol for fire hydrant (all types) shown in Table 5.2 can be of particular use where vehicles or snowfall frequently obscures hydrant locations.

A.6.1 This chapter on architectural and engineering symbols draws heavily on the symbols already developed by various societies, agencies, and industry.

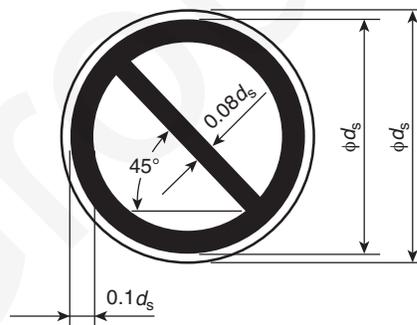
The purpose of this chapter is to provide uniformity in the use of fire safety and related symbols in the preparation of drawings and diagrams.

The symbols in this chapter are intended to be simple, transferable by use of templates, and limited to those referents that are used repetitively in a set of drawings.

The symbols in this chapter are intended for, but not limited to, architectural and engineering drawings, fire detection and suppression drawings, and fire risk and/or loss analysis diagrams.

The effectiveness of the symbols in this chapter can be enhanced by the use of supplementary figures, subscripts, numbers, or letter abbreviations.

Devices infrequently used in a given set of drawings and diagrams are not standardized by this document. They usually are accompanied by narrative description, either on the drawing or in specifications.



The colors of the sign shall be as follows:

| | |
|---------------------------------|-------|
| Background color: | white |
| Circular band and diagonal bar: | red |
| Graphical symbol: | black |
| Border: | white |

The safety color red shall cover at least 35 percent of the total area of the sign.

FIGURE A.4.1.3.2.1 Example of a Prohibition Symbol.

A.6.1.2 Where appropriate, diagrams include, but are not limited to, the following (see Figure A.6.1.2):

- (1) Title block indicating the following:
 - (a) Name of company or organization
 - (b) Person making drawing and date of drawing
 - (c) Name and location of facility involved
- (2) "North" direction arrow properly oriented to the position of buildings shown.
- (3) Scale of diagram, if used, or "not to scale." Scale can be given with a bar measurement if reduction copies are to be made.

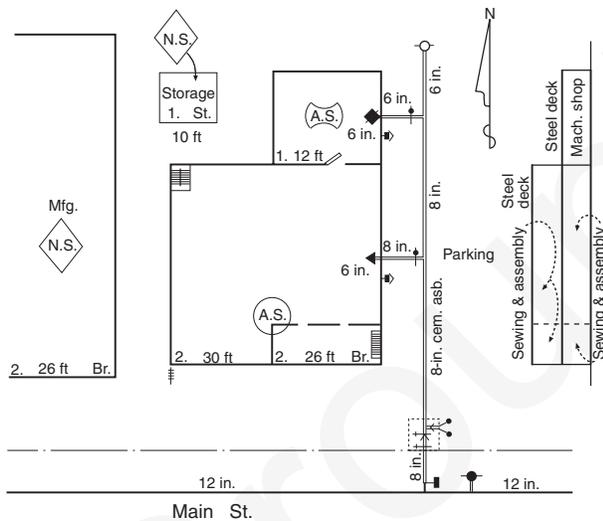
A.6.1.2.1 Drawing scale, line thickness, and so forth, are the subject of standards on drawing practice.

A.6.1.2.4 See Figure A.6.1.2.4(a) and Figure A.6.1.2.4(b) for examples of symbol orientation.

A.6.2.1.2 See Figure A.6.2.1.2 for examples of open-walled structures.

A.6.2.3 See Figure A.6.2.3 for an example of a street.

A.6.2.4 See Figure A.6.2.4 for examples of bodies of water.



For SI units: 1 in. = 25 mm; 1 ft = 0.305 m.

FIGURE A.6.1.2 Example of the Use of Symbols for Risk Analysis Diagram.

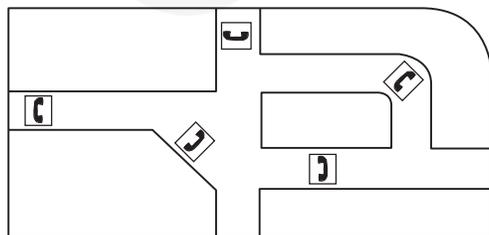


FIGURE A.6.1.2.4(a) Symbol Orientation — Example 1.

A.6.2.5.2 See Figure A.6.2.5.2 for an example of a fence with a gate.

A.6.3.1 See Figure A.6.3.1 for an example of building construction identification. (See NFPA 220.)

A.6.3.2 See Figure A.6.3.2 for an example of height symbols used for a building.

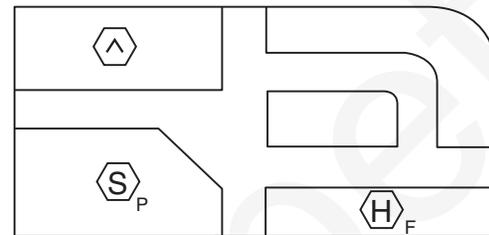


FIGURE A.6.1.2.4(b) Symbol Orientation — Example 2.

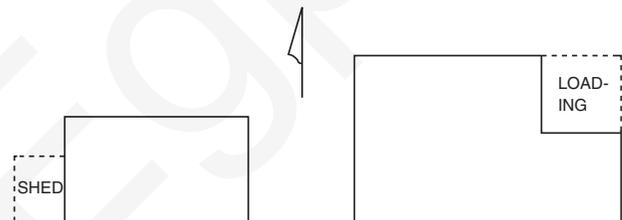


FIGURE A.6.2.1.2 Examples of Open-Walled Structures.



FIGURE A.6.2.3 Example of a Street.



FIGURE A.6.2.4 Examples of Bodies of Water.



FIGURE A.6.2.5.2 Example of a Fence with a Gate.

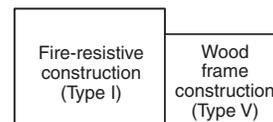


FIGURE A.6.3.1 Example of Building Construction Identification.

A.6.3.3 See Figure A.6.3.3(a) and Figure A.6.3.3(b) for examples of wall symbols.

See Figure A.6.3.3(a) for examples of parapet symbols used for a building.

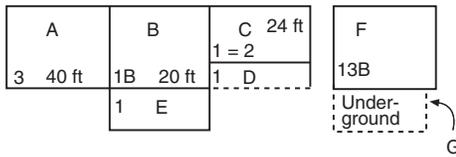
A.6.3.5 See Figure A.6.3.5 for an example of cross-section symbols used for a building.

A.7.1 See A.6.1.

A.7.1.2 See A.6.1.2.

A.7.1.2.1 See A.6.1.2.1.

A.7.1.2.4 See A.6.1.2.4.



- A Three stories, no basement, 40 ft to eaves
- B One story with basement, 20 ft to eaves
- C One-equals-two stories, no basement, 24 ft to eaves
- D One-story open porch or shed
- E One-story addition
- F Thirteen stories with basement
- G Underground structure

FIGURE A.6.3.2 Examples of Building Height Symbols. (Figure includes copyrighted material of Insurance Services Office with its permission. Copyright, Insurance Services Office, 1975.)

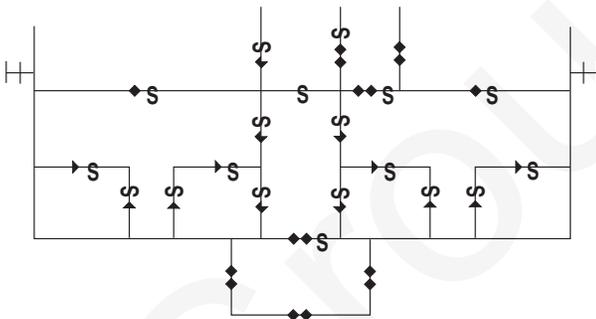


FIGURE A.6.3.3(a) Symbols Used to Note Wall Ratings and Parapets on Life Safety Plans and Risk Analysis Plans and Cross-Sections.

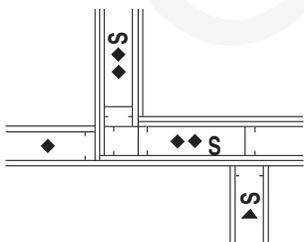


FIGURE A.6.3.3(b) Symbol Used to Note Wall Ratings on Design and Construction Documents.

A.7.2 For private hydrant, one hose outlet; public hydrant, two hose outlets; public hydrant, two hose outlets and pumper connection; wall hydrant, two hose outlets; and private housed hydrant, two hose outlets, all shown in Table 7.2, symbol elements can be utilized in any combination to fit the type of hydrant.

A.7.6 These symbols are intended for use in identifying the type of system installed to protect an area within a building.

A.7.6.2.1 Temperature ratings for sprinklers used throughout occupancies should be designated in the plan legend. When sprinklers with various temperature ratings are installed, the sprinkler ratings should be designated as in Table A.7.6.2.1. For example, a note on the drawing may state “all sprinklers are 155°F unless noted.”

A.7.6.3 See also Table 7.2 for related symbols.

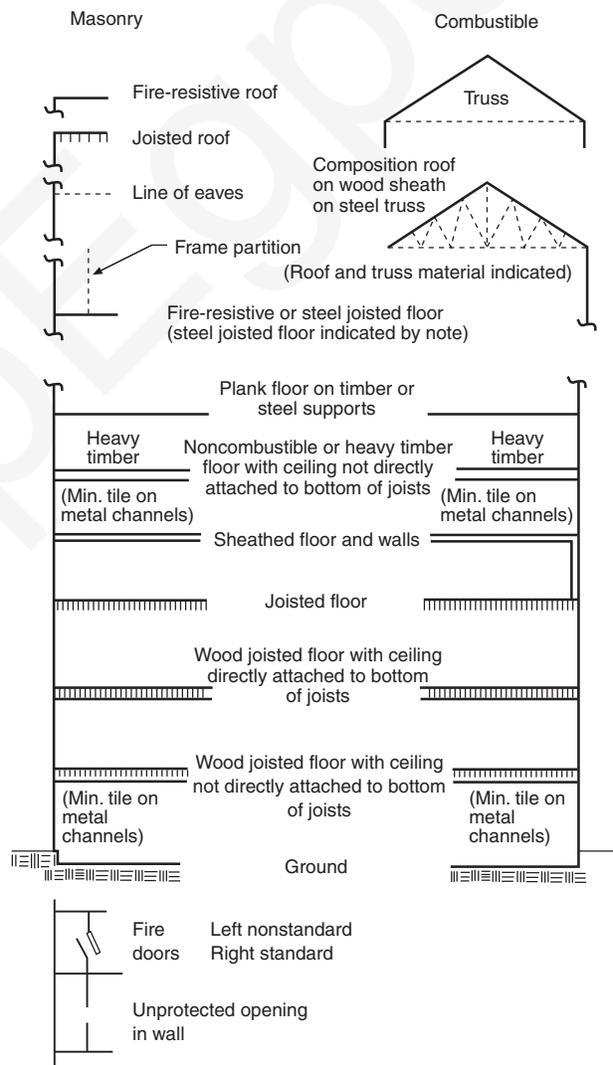


FIGURE A.6.3.5 Examples of Symbols and Notations Used for Fire Risk Analysis Cross Section. (Figure includes copyrighted material of Insurance Services Office with its permission. Copyright, Insurance Services Office, 1975.)

Table A.7.6.2.1 Symbols for Fire Sprinklers

| Symbol | Description |
|---|--------------------------------------|
|  | Upright on sprig @ 200°F temperature |
|  | Pendent on drop @ 286°F temperature |

A.7.9 The electrothermal link (ETL) is a multipurpose dual-response fusible link/release device. These devices are used in various applications, such as smoke/damper control and door closures. The symbol should be shown with its rated thermal point.

A.8.1 See A.6.1.

A.8.1.2 See A.6.1.2.

A.8.1.2.1 See A.6.1.2.1.

A.8.1.2.4 See A.6.1.2.4.

A.8.3 Additional subscript identifiers can be included with a slash after the primary subscript to indicate such things as, for example, WP for weatherproof or EP for explosionproof.

For the manual station symbol shown in Table 8.3, electrical or mechanical actuation can be shown.

See NFPA 2001 for a generic list of clean agents.

The telephones referred to in the fire service or emergency telephone station symbols, shown in Table 8.3, are those for a dedicated system for fire and related emergencies.

Temperature rating of heat detectors, in Table 8.3, can be shown.

Velocity can be shown for the smoke detector for duct symbol shown in Table 8.3.

For the gas detector symbol shown in Table 8.3, the drawing should show the type of gas or gases being monitored. The drawing should indicate the lower explosive limit (LEL) and/or the upper explosive limit (UEL) of gas or gases.

A.9.1.1 The purpose of this chapter is to provide uniformity in the use of fire safety and related symbols in the preparation of pre-incident planning sketches.

The symbols in this chapter are provided to assist fire service or emergency response personnel who are responsible for preparing and using pre-incident planning sketches.

A.9.1.2 Triangle symbols are used for access features, assessment features, ventilation features, and utility shutoffs and can point at a specific location or direction. Diamond symbols identify a specific location by touching a wall. Circle symbols are used for all piping system components, such as valves, since most pipes are round.

Square symbols are used for room designations, as they represent most rooms having four sides.

A.9.2 For Section 9.2 through Section 9.5, other features to complete the pre-incident planning sketch can be used as appropriate.

A.9.6 Figure A.9.6 shows an example of hazardous identification.

A.11.2.2 It is advisable to show the whole building floor plan with all exits, when possible.

A.11.3 See Figure A.11.3.



FIGURE A.9.6 Example of Hazardous Identification.

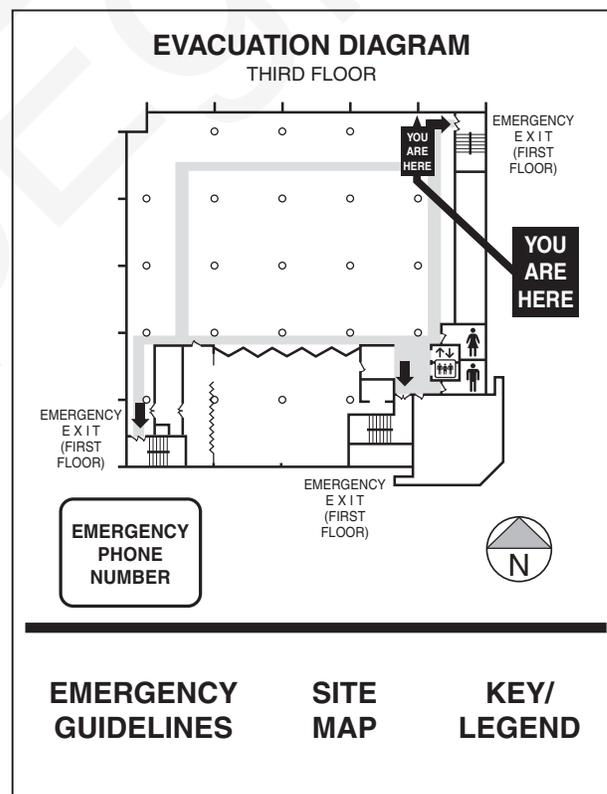


FIGURE A.11.3 Example of Proper Orientation.

Annex B Additional Explanatory Information on Chapters 1 Through 6

This annex is not a part of the requirements of this NFPA document but is included for informational purposes only.

B.1 Reserved.

B.2 Reserved.

B.3 Additional Explanatory Information on Chapter 4.

B.3.1 Symbol Testing. Two or more versions of a symbol were developed for the referents listed in Chapter 4. The effectiveness of each of these symbols was evaluated by testing its meaningfulness (i.e., understandability) with groups of different participants. On the basis of these results, a symbol was selected for each referent. In some cases, the symbols were refined graphically to incorporate modifications suggested by the test results. Symbol development and refinement included the efforts of research psychologists, graphic designers, safety engineers, and fire professionals.

The life safety symbols were tested in the course of several different research projects during a 7-year period. These results are referenced in a series of publications by the National Bureau of Standards.

Although a variety of testing procedures were used to assess understandability, the basic method consisted of asking people either to write down short definitions or to pick the correct definition from a set of carefully selected choices. In several studies, data on symbol preference and rated effectiveness also were obtained.

For these testing efforts, one set of participants consisted of 222 industrial personnel and 78 students; another set consisted of 271 miners and mine personnel; and another set consisted of 94 paid volunteers. No major differences between participant groups were observed for the symbols selected for Chapter 4.

In addition to the studies of understandability, a detailed assessment was made of exit symbol visibility. This study used a laboratory optical viewing system to present a set of exit symbols included in a much larger set (108) of safety and information symbols. Three viewing conditions that simulated smoke were used (luminance of 0.085, 0.060, and 0.032 candela/m²). Forty-two participants were familiarized with a randomly selected set of exit symbols to identify the separate effects of understandability and visibility. The symbol given in Chapter 4 was the symbol that was most frequently identified correctly under all three viewing conditions. In addition, the identification data were virtually the same whether participants had been familiarized with the symbol or not — suggesting that the symbol has high initial understandability. (This suggestion is reinforced by the high percentages of correct identification found in those studies that evaluated understandability.)

The results of the visibility testing program are important because an exit symbol must be both well understood and visible when under degraded viewing conditions such as smoke.

The goal of the overall testing program was to identify versions or elements of symbols for the selected referents that appeared to be most effective in communicating the intended message. It is recognized that further education and/or supplemental word messages can be useful in optimizing the effectiveness of these symbols with the general public. Nevertheless, the

symbols selected have demonstrated good initial understandability. Symbols for the referents generally showed good understandability (better than 85 percent correct identification). Symbols that presented some understandability problems included “No Exit” and “Fire Alarm Call Point.” The examples shown herein, however, represent the imagery that was best understood. It is hoped that use of these images will strengthen public recognition.

It also should be noted that the symbol for handicapped accessibility was not tested in this program. It is, however, in an existing ICC/ANSI standard, A117.1, *Specifications for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People*, and has achieved wide use and good recognition.

B.4 Additional Explanatory Information on Chapter 5.

B.4.1 Symbol Testing. At least two versions of a symbol were developed for each of the following referents:

- (1) Fire department automatic sprinkler connection — siamese
- (2) Fire department standpipe connection
- (3) Fire department combined automatic sprinkler/standpipe connection
- (4) Fire hydrant (all types)
- (5) Automatic sprinkler control valve
- (6) Electric panel or electric shutoff

The following referents are discussed in this section:

- (1) Gas shutoff valve
- (2) Fire-fighting hose or standpipe outlet
- (3) Fire extinguisher
- (4) Directional arrow
- (5) Diagonal directional arrow

Subsequently, the effectiveness of the symbols was evaluated by testing their meaningfulness to groups of fire professionals; the procedures are outlined in this section. On the basis of the test results, a symbol was selected for each referent. This set of symbols was further refined graphically, incorporating modifications suggested by the test results. Symbol development and refinement through a Subcommittee on Visual Alerting Symbols included the efforts of fire professionals, graphic artists and designers, research psychologists, and safety engineers.

Symbols for gas shutoff valve, fire-fighting hose or standpipe outlet, fire extinguisher, directional arrow, and diagonal directional arrow were adapted from International Organization for Standardization (ISO) publications. The fire extinguisher symbol was included in the test procedure. Although the standpipe outlet symbol was not tested in isolation, it was incorporated as an element in two of the tested symbols (fire department standpipe connection and fire department combined automatic sprinkler/standpipe connection).

Participants in the test program included fire professionals attending a national convention or local (Maryland) training classes and totaled 86 participants. The test procedure involved two phases. In the first phase, the participants were shown one symbol at a time, in slide form, and were asked to write down a short definition of what they thought each symbol meant. In the second phase, two symbolic versions of each referent were shown together, and their intended meaning was provided; the participants indicated which version (if either) of each pair they felt better conveyed the meaning. They also were asked to

give the reason for their preference and were free to offer any suggestions for improvement.

The goal of the testing program was to identify versions or elements of symbols for the selected referents that were most effective in visually alerting fire fighters. It is recognized that education might be required to optimize the effectiveness of the symbols for fire fighters. Nevertheless, it is important to select symbols that initially are meaningful. Symbols for seven of the nine referents tested showed good recognizability (85 to 100 percent) and no serious confusion with other possible meanings. However, for two referents — wall hydrant and gas control valve — recognition was poor, and confusion was common for both symbolic versions of each message. Therefore, no symbol for these two referents is presented in this standard. Graphic improvements and alternative conceptions are being sought. (A symbol for a gas shutoff valve was accepted for the 1991 edition of NFPA 170.)

B.4.2 The NFPA Committee on Fire Safety Symbols was able to identify a set of shapes for symbols to be used to direct responding fire fighters.

B.5 Additional Explanatory Information on Chapter 6.

B.5.1 Symbol Selection Procedure. See Figure B.5.1 for an example of the procedures involved in selecting fire safety symbols.

B.5.2 Discussion of Basic Symbols.

B.5.2.1 Symbol Testing. Inevitably, when a new standard is introduced to a field in which standardized symbols are not established and everyone is acting independently, controversy looms over the effort as to which (whose) alleged “standard” should be used. Such controversy can be met only with a national logic for meeting the standardization task. Such logic was used in developing former NFPA 172 now incorporated into Chapter 6.

B.5.2.2 This symbology effort ultimately employed the following steps:

- (1) Identify problem. Is a standard for fire protection symbols needed?
- (2) Identify referents. What devices should be symbolized? Consider applicability to fire protection and frequency of use.
- (3) Identify symbols’ availability. What symbols exist, and how widely are they used for fire protection and other disciplines?
- (4) Develop a system of symbol selection. Can a system be identified so that referents and symbols can be rationally selected or developed? (*See B.5.1.*)
- (5) Can a scheme of basic shapes be utilized in developing symbol sets for categories of referents?
- (6) Adhere to the scheme. Make exceptions only where an overwhelming level of usage makes changes unreasonable.
- (7) Avoid conflicts. Are there other practices and/or standards with which the proposed standard might be in conflict?

B.5.2.3 To accomplish step B.5.2.2(5), two factors had to be considered. First, there is very little agreement on symbols throughout North America. For the most part, various industry segments disagree on symbols and even on basic shapes. Second, the ISO Committee on Fire Protection Symbols for Use on Drawings completed most of its work on this subject before 1980 and proposed a set of basic symbol shapes.

B.5.2.4 With the two foregoing considerations, the NFPA Committee on Fire Safety Symbols was able to develop a set of basic shapes for symbols to be used on fire protection drawings. The basic shapes shown in Table B.5.2.4 were selected by uniting the ISO-proposed basic shapes and, where existent, the North American common practice. Thus, the collection of shapes (menu) represents a compromise with the sole major objective of developing a symbols standard aimed at a common language to improve future communication among users of fire protection drawings worldwide.

B.5.2.5 The collection of basic shapes in Table B.5.2.4 is broken down into a major classification of symbol elements and a supplementary set of symbol elements that can be used singly or in combination with other symbol elements. These basic symbol shapes and relative sizes are not exclusive of all the shapes and sizes that were used in developing former NFPA 172 (now incorporated into Chapter 6). They are a guide that was used in developing the family scheme.

It is recognized that the former NFPA 172 did not include all the fire safety symbols that can be required on architectural and engineering drawings. Table B.5.2.4 can therefore be used as a basis for future development of Chapter 6 or for the design of specialized symbols by the draftsman.

Symbol elements have definite meanings and therefore should always be represented at the same relative size when used in different symbols.

B.5.2.6 The NFPA Committee on Fire Safety Symbols was able to identify a set of shapes for symbols to be used on fire protection drawings and diagrams (*see Table B.5.2.4*). The shapes were selected through a reconciliation of the symbols presented in the former NFPA 172 (now incorporated into Chapter 6), the general shapes being drafted by the ISO, and, where existent, the common practice in North America. Thus, the family of shapes represents a compromise, with the major objective of developing a common language to improve future communication among users of fire protection diagrams worldwide.

B.5.3 Use of Color Coding.

B.5.3.1 General. The use of color coding to indicate various types of building construction is recommended and can be justified. Where used, color coding should be in conformity with this annex to maximize communication. Where color coding is not used, it is necessary to rely on printed detail.

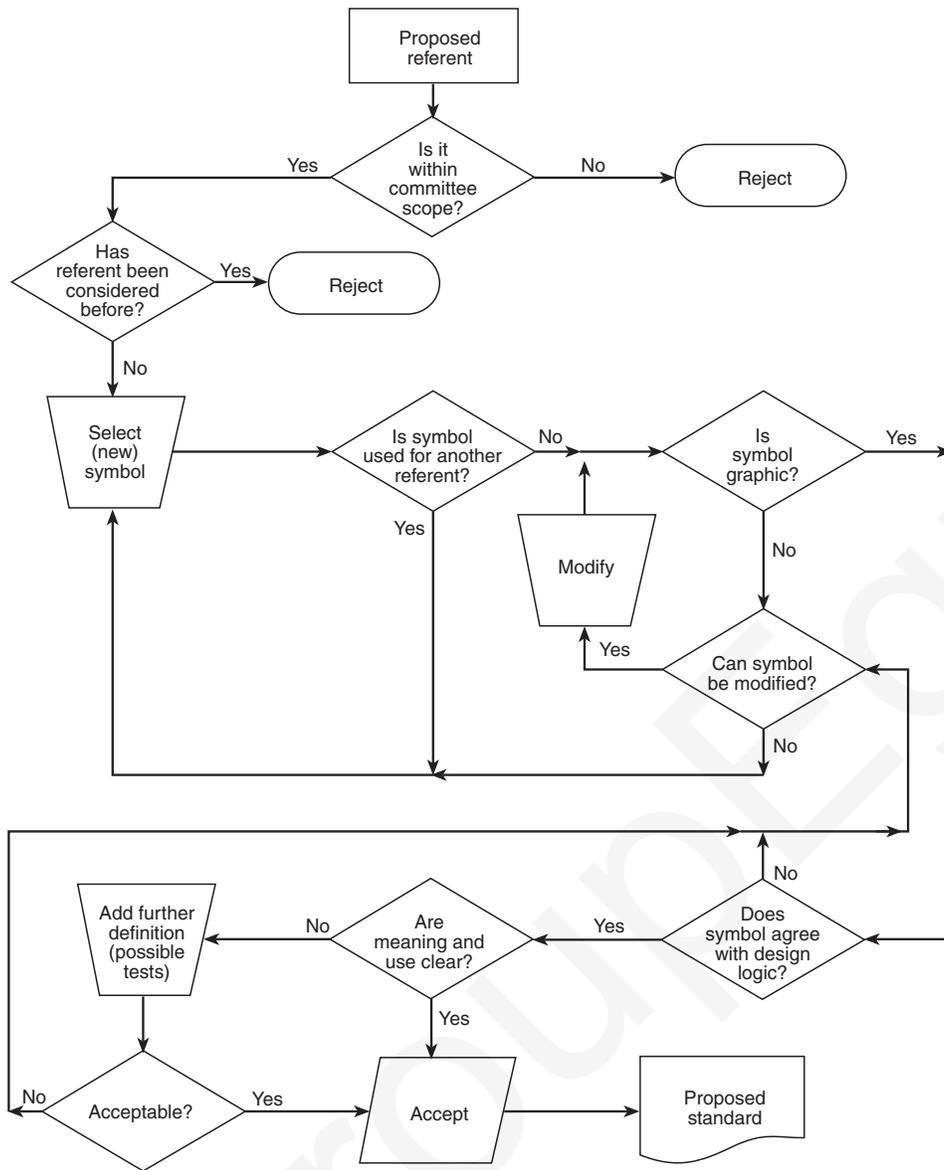


FIGURE B.5.1 Symbol Selection Procedure.

Table B.5.2.4 Basic Symbol Shapes and Relative Sizes

| General Referent | Shape | Relative Size* | Comments |
|---|---|--|--|
| Major Elements | | | |
| Automatically actuating systems |  | 4 mm ($\frac{5}{32}$ in.) diameter | Detection, extinguishment |
| Manually actuating systems |  | 4 mm ($\frac{5}{32}$ in.) square | Manual alarm system |
| Control panel |  | 4 mm × 8 mm ($\frac{5}{32}$ in. × $\frac{5}{16}$ in.) | Supplementary element used to describe the panel |
| Portable fire extinguisher |  | 5 mm ($\frac{3}{16}$ in.) sides | Supplementary element used to further describe the extinguisher |
| Fire-fighting equipment |  | 6 mm ($\frac{1}{4}$ in.) sides | Supplementary element used to describe a specific device |
| Supplementary Elements | | | |
| Water system components |  | 2 mm ($\frac{3}{32}$ in.) diameter | General shape, a circle; shading of element indicates wet device |
| Foam agent |  | 5 mm ($\frac{3}{16}$ in.) diameter | |
| Dry chemical agent |  | 2 mm ($\frac{3}{32}$ in.) square | |
| Gaseous agent |  | 3 mm ($\frac{1}{8}$ in.) sides | |
| Nozzle |  | | Used on pipe or other symbol |
| Pressure notation |  | | Used with another symbol shape, such as a detector or a tank |
| Switch (electrical) or contact |  | 2 mm ($\frac{5}{64}$ in.) diameter | |
| Valve |  | 4 mm ($\frac{5}{32}$ in.) high | |
| Check valve |  | 6 mm ($\frac{1}{4}$ in.) high (with arrow) | |
| Tamper detector |  | 4 mm ($\frac{5}{32}$ in.) diameter | |
| Heat detector |  | 1 mm ($\frac{3}{64}$ in.) diameter | |
| Flow detector |  | 4 mm ($\frac{5}{32}$ in.) high | |
| 1-hour fire rating |  | 5 mm ($\frac{3}{16}$ in.) square | Used to indicate fire rating of walls in hours |
| Automatic detection and supervisory use devices |  | 5 mm ($\frac{3}{16}$ in.) sides | Detection, supervisory |

*Relative is emphasized because it is not the intent here to specify actual dimensions. For comparisons, this column lists the suggested sizes of the symbols presented here.

B.5.3.2 Table B.5.3.2 presents a recommended system for color coding.

Table B.5.3.2 Color Coding of Construction Types

| Construction Type* | Color |
|--|--------------------------------------|
| Fire resistive (Type I) | Light brown |
| Noncombustible/limited combustible (Type II) | Gray (brown border if masonry walls) |
| Heavy timber and ordinary (Type III and IV) | Pink |
| Wood frame (Type V) | Yellow |

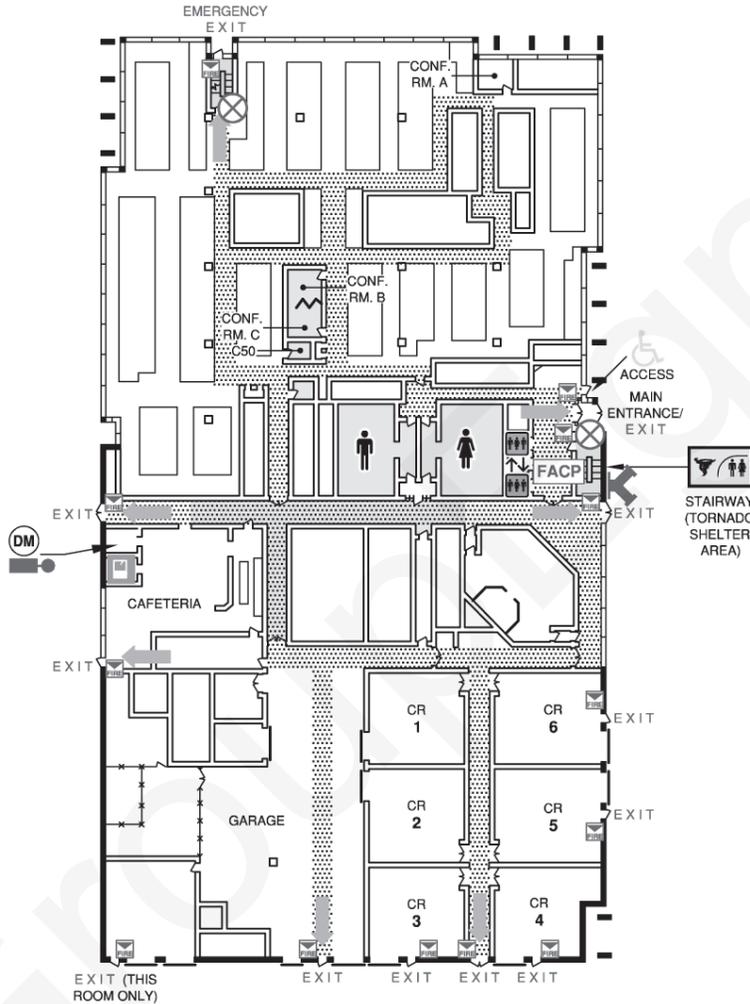
*See NFPA 220.

Annex C Emergency Responder Map

This annex is not a part of the requirements of this NFPA document but is intended for informational purposes only.

C.1 Emergency Responder Plan. The plan shown in Figure C.1(a) and Figure C.1(b) provides emergency responders an example of maps showing the interior and exterior locations of the building using the symbols from Table 5.2 and information from Chapter 9. See Figure C.1(a) and Figure C.1(b).

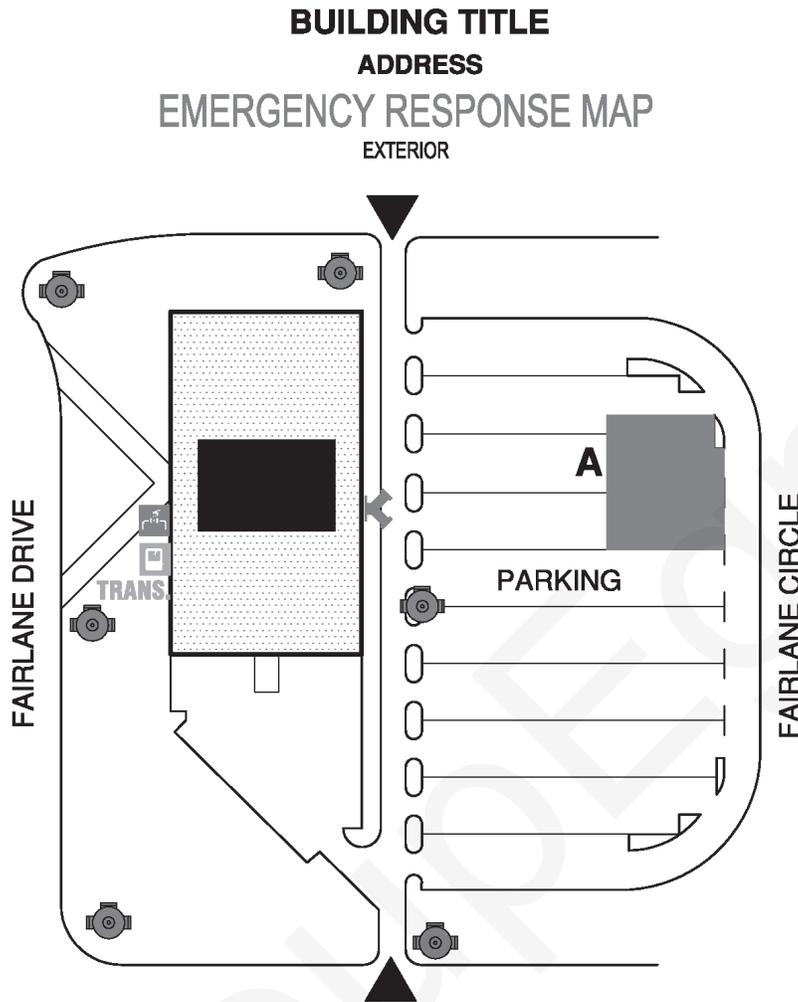
BUILDING TITLE
ADDRESS
EMERGENCY RESPONSE MAP
 FIRST FLOOR - INTERIOR



| | | | | | |
|---|----------------------------|--|---------------------------------|--|--------------------------|
| BUILDING NOTES: | | | | | |
| Fire Department standpipes are located in each stairway | | | | | |
| | | | | | |
| LEGEND | | | | | |
| | Fire Pump | | Fire Hydrant | | Main Gas Service Shutoff |
| | Fire Dept. Connection | | Main Electrical Service Shutoff | | Fire Suppression |
| | Fire Alarm Control Unit | | Riser Valve | | Special Fire Protection |
| | Non-Sprinklered | | Domestic Water shutoff | | Elevator |
| | Fire Dept. Standpipe Valve | | Fire Dept. Access | | Stairway |
| | | | | | Tornado Shelter Area |
| | | | | | Evacuation Assembly Area |



FIGURE C.1(a) Emergency Response Map First Floor, Interior.



| | | | | | |
|---|----------------------------|---------------------------------|-------------------------|--------------------------|--|
| BUILDING NOTES: | | | | | |
| Fire Department standpipes are located in each stairway | | | | | |
| LEGEND | | | | | |
| Fire Pump | Fire Hydrant | Main Gas Service Shutoff | Fire Suppression Pull | | |
| Fire Alarm Control Panel | Fire Dept. Connection | Main Electrical Service Shutoff | Special Fire Protection | | |
| Non-Sprinklered | Riser Valve | Domestic Water shutoff | Elevator | | |
| | Fire Dept. Standpipe Valve | Fire Dept. Access | Stairway | Evacuation Assembly Area | |



FIGURE C.1(b) Emergency Response Map Exterior.

Annex D Fire Fighter Safety Building Marking System

This annex, which is extracted from NFPA 1, Annex E, is not a part of the requirements of this NFPA document unless specifically adopted by the AHJ.

D.1 Fire Fighter Safety Building Marking System (FFSBMS). [1:E.1]

D.1.1 General. [1:E.1.1]

D.1.1.1 The fire fighter safety building marking system provides basic building information for fire fighters responding to the building or structure.

[1:E.1.1.1]

D.1.1.2 Where required by the AHJ, buildings and structures shall have the fire fighter safety building marking system sign installed.

[1:E.1.1.2]

D.1.2 Sign. [1:E.1.2]

D.1.2.1 The approved fire fighter safety building marking system sign shall be placed in a position to be plainly legible and visible from the street or road fronting the property or as approved by the fire department.

[1:E.1.2.1]

D.1.2.2 The fire fighter safety building marking system sign shall consist of the following:

- (1) White reflective background with black letters
- (2) Durable material
- (3) Arabic numerals or alphabet letters
- (4) Permanently affixed to the building or structure in an approved manner

[1:E.1.2.2]

D.1.2.3 The fire fighter safety building marking system shall be a Maltese cross as shown in Figure D.1.2.3.

[1:E.1.2.3]



FIGURE D.1.2.3 Sample Sign for Fire Fighter Safety Building Marking System. [1:Figure E.1.2.3]

D.1.2.4 The minimum size of the fire fighter safety building marking system sign and lettering shown in Figure D.1.2.4 shall be in accordance with the following or as approved by the fire department:

- (1) A shall be 5 in. × 5 in.
- (2) B shall be 1¼ in.
- (3) C shall be 2½ in.
- (4) Letters shall be 1 in. height with a stroke of ¼ in.

[1:E.1.2.4]

D.1.3 Ratings. [1:E.1.3]

D.1.3.1 Ratings shall be determined by the construction type, hazards of contents, automatic fire sprinkler systems and stand-pipe systems, occupancy/life safety, and special hazards in accordance with this section.

[1:E.1.3.1]

D.1.3.1.1 Where multiple ratings occur within a classification category, a determination shall be made by the AHJ of the rating that shall be based on the greatest potential risk for the specific category. (See Note 1 in D.2.1.)

[1:E.1.3.1.1]

D.1.3.2 Construction Type. The construction type shall be designated by assigning the appropriate lettering to the top of the Maltese cross as follows:

- (1) FR — Fire-resistive construction
- (2) NC — Noncombustible construction
- (3) ORD — Ordinary construction
- (4) HT — Heavy timber construction
- (5) C — Combustible construction

[1:E.1.3.2]

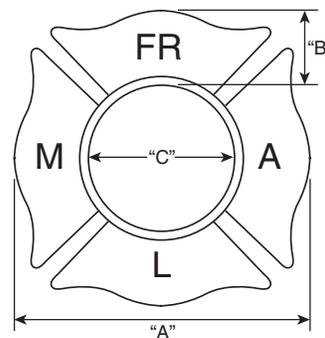


FIGURE D.1.2.4 Dimensions for Fire Fighter Safety Building Marking System Signs. [1:Figure E.1.2.4]

D.1.3.3 Hazards of Contents. The hazards of contents shall be rated by determining its hazard and assigning the appropriate rating to the left of the Maltese cross as follows (*see Note 2 in D.2.2*):

L — Low hazard. Low hazard contents shall be classified as those of such low combustibility that no self-propagating fire therein can occur.

M — Moderate hazard. Moderate hazard contents shall be classified as those that are likely to burn with moderate rapidity or to give off a considerable volume of smoke.

H — High hazard. High hazard contents (*see Note 3 in D.2.3*) shall be classified as those that are likely to burn with extreme rapidity or from which explosions are likely.

[1:E.1.3.3]

D.1.3.4 Automatic Fire Sprinkler and Standpipe System. The automatic fire sprinkler system and standpipe system shall be rated by determining its level of protection and assigning the appropriate rating to the right of the Maltese cross. If multiple systems are provided, all systems shall be included in the Maltese cross as follows:

- (1) A — Automatic fire sprinkler system installed throughout
- (2) P — Partial automatic fire sprinkler system or other suppression system installed
- (3) S — Standpipe system installed
- (4) N — None

[1:E.1.3.4]

D.1.3.5 Occupancy/Life Safety Issues. The occupancy/life safety type shall be rated by determining the level of difficulty in evacuating occupants from the building and the occupancy type by assigning the appropriate rating to the bottom of the Maltese cross as follows:

- (1) L — Business, industrial, mercantile, residential, and storage occupancies
- (2) M — Ambulatory health care, assembly, educational, and day care occupancies
- (3) H — Detention and correction facilities, health care, and board and care occupancies

[1:E.1.3.5]

D.1.3.6 Special Designations. The special hazards can be assigned to the center of the Maltese cross (*see Note 4 in D.2.4*).

[1:E.1.3.6]

D.2 Notes. The following notes are explanatory and are not part of the mandatory text for Annex D.

[1:E.2]

D.2.1 Note 1. An example of the greatest potential risk for construction type where an FR and an NC are present, the ranking on the FFSBMS sign would be NC.

[1:E.2.1]

D.2.2 Note 2. Hazard of contents are described as follows:

Low hazard recognizes storage of noncombustible materials as low hazard. In other occupancies it is assumed that, even where the actual contents hazard is normally low, there is sufficient likelihood that some combustible materials or hazardous operations will be introduced in connection with building repair or maintenance, or some psychological factor might

create conditions conducive to panic, so that the egress facilities cannot safely be reduced below those specified for ordinary hazard contents. Moderate hazard classification represents the conditions found in most buildings and is the basis for the general requirements of this *Code*.

The fear of poisonous fumes or explosions is necessarily a relative matter to be determined on a judgment basis. All smoke contains some toxic fire gases but, under conditions of moderate hazard, there should be no unduly dangerous exposure during the period necessary to escape from the fire area, assuming there are proper exits.

[1:E.2.2]

D.2.3 Note 3. High hazard contents include occupancies where flammable liquids are handled or used or are stored under conditions involving possible release of flammable vapors; where grain dust, wood flour or plastic dust, aluminum or magnesium dust, or other explosive dusts are produced; where hazardous chemicals or explosives are manufactured, stored, or handled; where cotton or other combustible fibers are processed or handled under conditions producing flammable flyings; and other situations of similar hazard.

[1:E.2.3]

D.2.4 Note 4. The center of the fire fighter safety building marking system sign has been left empty to permit the local jurisdiction space to provide for additional information that they may wish to add. The NFPA 704 marking system can be incorporated into the center of the fire fighter safety building marking system sign if all the applicable provisions of NFPA 704 are met including lettering size and so forth.

[1:E.2.4]

Annex E Informational References

E.1 Referenced Publications. The documents or portions thereof listed in this annex are referenced within the informational sections of this standard and are not part of the requirements of this document unless also listed in Chapter 2 for other reasons.

E.1.1 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.

NFPA 220, *Standard on Types of Building Construction*, 2015 edition.

NFPA 704, *Standard System for the Identification of the Hazards of Materials for Emergency Response*, 2017 edition.

NFPA 2001, *Standard on Clean Agent Fire Extinguishing Systems*, 2015 edition.

E.1.2 Other Publications.

E.1.2.1 ANSI Publications. American National Standards Institute, Inc., 25 West 43rd Street, 4th Floor, New York, NY 10036.

ICC/ANSI A117.1, *Accessible and Usable Buildings and Facilities*, 2009.

E.2 Informational References. The following documents or portions thereof are listed here as informational resources only. They are not a part of the requirements of this document.

E.2.1 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.

Fire Protection Handbook, 20th edition, 2008.

Fire and Life Safety Inspection Manual, 2012.

National Fire Codes[®], 2017.

E.2.2 Other Publications.

E.2.2.1 ANSI Publications. American National Standards Institute, Inc., 25 West 43rd Street, 4th Floor, New York, NY 10036.

ANSI/NEMA Z535.1, *American National Standard for Safety Colors*, 2011.

ANSI/NEMA Z535.3, *American National Standard Criteria for Safety Symbols*, 2011.

ANSI/NEMA Z535.4, *American National Standard for Product Safety Signs and Labels*, 2011.

E.2.2.2 ISO Publications. International Organization for Standardization, ISO Central Secretariat, BIBC II, 8, Chemin de Blandonnet, CP 401, 1214 Vernier, Geneva, Switzerland.

ISO 3864, *Safety Colors and Safety Signs*, 1984.

ISO 6309, *Fire Protection — Safety Signs*, 1987.

ISO 6790, *Equipment for Fire Protection and Fire Fighting Graphical Symbols for Fire Protection Plans — Specification*, 1986.

ISO 7010, *Graphical Symbols – Safety Colours And Safety Signs – Registered Safety Signs*, 2011.

E.3 References for Extracts in Informational Sections.

NFPA 1, *Fire Code*, 2015 edition.

Index

Copyright © 2017 National Fire Protection Association. All Rights Reserved.

The copyright in this index is separate and distinct from the copyright in the document that it indexes. The licensing provisions set forth for the document are not applicable to this index. This index may not be reproduced in whole or in part by any means without the express written permission of NFPA.

-A-

Additional Explanatory Information on Chapters 1 Through 6, Annex B

- Additional Explanatory Information on Chapter 4, B.3
 - Symbol Testing, B.3.1
- Additional Explanatory Information on Chapter 5, B.4
 - Symbol Testing, B.4.1
- Additional Explanatory Information on Chapter 6, B.5
 - Discussion of Basic Symbols, B.5.2
 - Symbol Testing, B.5.2.1
 - Symbol Selection Procedure, B.5.1
 - Use of Color Coding, B.5.3
 - General, B.5.3.1

Administration, Chap. 1

- Equivalency, 1.4
- Purpose, 1.2
- Retroactivity, 1.3
- Scope, 1.1
- Units, 1.5

Approved

- Definition, 3.2.1

Authority Having Jurisdiction (AHJ)

- Definition, 3.2.2, A.3.2.2

-D-

Definitions, Chap. 3

-E-

Emergency Evacuation Diagrams and Plans, Chap. 11

- Composition, 11.2
- Construction, 11.5
 - Materials, 11.5.1
- Information Shown, 11.4
- Introduction, 11.1
- Orientation, 11.3, A.11.3

Emergency Responder Map, Annex C

- Emergency Responder Plan, C.1

Explanatory Material, Annex A

-F-

Fire Fighter Safety Building Marking System, Annex D

- Fire Fighter Safety Building Marking System (FFSBMS).
 - [1:E.1], D.1
 - General. [1:E.1.1], D.1.1
 - Ratings. [1:E.1.3], D.1.3
 - Automatic Fire Sprinkler and Standpipe System, D.1.3.4
 - Construction Type, D.1.3.2
 - Hazards of Contents, D.1.3.3
 - Occupancy/Life Safety Issues, D.1.3.5
 - Special Designations, D.1.3.6

Sign. [1:E.1.2], D.1.2

Notes, D.2

Note 1, D.2.1

Note 2, D.2.2

Note 3, D.2.3

Note 4, D.2.4

-I-

Informational References, Annex E

-L-

Labeled

Definition, 3.2.3

Listed

Definition, 3.2.4, A.3.2.4

-P-

Photoluminescent

Definition, 3.3.1

Pre-Incident Planning

Definition, 3.3.2

-R-

Referenced Publications, Chap. 2

Referent

Definition, 3.3.3, A.3.3.3

-S-

Self-Luminous (Emergency Symbols)

Definition, 3.3.4

Shall

Definition, 3.2.5

Should

Definition, 3.2.6

Standard

Definition, 3.2.7

Supplementary Indicators

Definition, 3.3.5, A.3.3.5

Symbol

Definition, 3.3.6, A.3.3.6

Symbology for Emergency Management Mapping, Chap. 10

Damage Operational Symbols, 10.1

Incidents Symbology, 10.3

Infrastructures Symbology, 10.5

Natural Events Symbology, 10.4

Operations Symbology, 10.2

Symbols for General Use, Chap. 4

Class of Fire Symbols, 4.3

Introduction, 4.1

Purpose, 4.1.2

- Symbol Presentation, 4.1.3, A.4.1.3
- Symbol Color, 4.1.3.3
- Symbols for General Use, 4.2, A.4.2
- Symbols for Use by the Fire Service, Chap. 5**
- Fire Apparatus Safety Symbols, 5.3
- Introduction, 5.1
- Symbol Presentation, 5.1.3, A.5.1.3
- Symbol Background, 5.1.3.2
- Symbol Color, 5.1.3.3
- Symbol Orientation, 5.1.3.4
- Symbol Shapes, 5.1.3.1, A.5.1.3.1
- Symbols for Use by the Fire Service, 5.2, A.5.2
- Symbols for Use in Architectural and Engineering Drawings and Insurance Diagrams, Chap. 6**
- Introduction, 6.1, A.6.1
- Symbol Presentation, 6.1.2, A.6.1.2
- Screened Lines, 6.1.2.2
- Symbol Orientation, 6.1.2.4, A.6.1.2.4
- Symbol Scale, 6.1.2.3
- Symbol Shapes, 6.1.2.1, A.6.1.2.1
- Symbols for Building Construction, 6.3
- Height, 6.3.2, A.6.3.2
- Miscellaneous Features, 6.3.6
- Special Symbols for Cross-Sections, 6.3.5, A.6.3.5
- Symbols for Floor Openings, Wall Openings, Roof Openings, and Their Protection, 6.3.4
- Symbols for Walls and Parapets, 6.3.3, A.6.3.3
- Types of Building Construction, 6.3.1, A.6.3.1
- Symbols for Site Features, 6.2
- Bodies of Water, 6.2.4, A.6.2.4
- Buildings, 6.2.1
- Fences, 6.2.5
- Fire Department Access, 6.2.7
- Other Site Features, 6.2.8
- Property Lines, 6.2.6
- Railroad Tracks, 6.2.2
- Streets, 6.2.3, A.6.2.3
- Symbols for Use in Electronic Fire and Smoke Detection and Notification System Drawings and Insurance Diagrams, Chap. 8**
- Introduction, 8.1, A.8.1
- Symbol Presentation, 8.1.2, A.8.1.2
- Screened Lines, 8.1.2.2
- Symbol Orientation, 8.1.2.4, A.8.1.2.4
- Symbol Scale, 8.1.2.3
- Symbol Shapes, 8.1.2.1, A.8.1.2.1
- Notification Appliances, 8.4
- Emergency Communications Notification Appliances, 8.4.3
- Notification Appliances, 8.4.2
- Related Equipment, 8.5
- Symbols for Control Panels, 8.2
- Symbols for Fire Alarms, Detection, and Related Equipment — Signal Initiating Devices and Activation Switches, 8.3, A.8.3
- Symbols for Smoke/Pressurization Control, 8.6
- Symbols for Use in Pre-Incident Planning Sketches, Chap. 9**
- Access Features, Assessment Features, Ventilation Features, and Utility Shutoffs, 9.2, A.9.2
- Detection/Extinguishing Equipment, 9.3
- Equipment Rooms, 9.5
- Identification of Hazardous Materials, 9.6, A.9.6
- Introduction, 9.1
- Symbol Shapes, 9.1.2, A.9.1.2
- Water Flow Control Valves and Water Sources, 9.4
- Symbols for Use in Water Supply, Extinguishing, and Sprinkler System Drawings and Insurance Diagrams, Chap. 7**
- Indicating Appliances, 7.5
- Introduction, 7.1, A.7.1
- Symbol Presentation, 7.1.2, A.7.1.2
- Screened Lines, 7.1.2.2
- Symbol Orientation, 7.1.2.4, A.7.1.2.4
- Symbol Scale, 7.1.2.3
- Symbol Shapes, 7.1.2.1, A.7.1.2.1
- Miscellaneous Symbols, 7.9, A.7.9
- Symbols for Fire Extinguishing Systems, 7.6, A.7.6
- Symbols for Fire Sprinklers, 7.6.2
- Symbols for Piping, Valves, Control Devices, and Hangers, 7.6.3, A.7.6.3
- Various Types of Fire Extinguishing Systems, 7.6.1
- Dry Chemical Systems, 7.6.1.2
- Supplementary Symbols, 7.6.1.4
- Systems Utilizing a Gaseous Medium, 7.6.1.3
- Water-Based Systems, 7.6.1.1
- Symbols for Fire-Fighting Equipment, 7.8
- Symbols for Portable Fire Extinguishers, 7.7
- Symbols Related to Means of Egress, 7.4
- Water Supply and Distribution Symbols, 7.2, A.7.2



ویدیو - انیمیشن های اطفاء، اعلام حریق، تهویه و تخلیه دود (رایگان)

برای مشاهده هر یک از ویدیوهای زیر کافیست بر روی عنوان آن آموزش کلیک نمایید تا به صفحه ویدیو و آموزش آن عنوان هدایت شوید.

انیمیشن ویدیو

• اطفاء حریق آبی

- [سیستم اطفاء لوله خشک اسپرینکلر](#)
- [سیستم اطفاء لوله تر اسپرینکلر](#)
- [سیستم اطفاء پیش عملگر](#)
- [سیستم اطفاء واترمیست](#)
- [سیستم اطفاء سیلابی](#)

• [سیستم اطفاء فوم](#)

• [تجهیزات اطفاء حریق - تجهیزات هشدار دهنده](#)

• [تجهیزات اطفاء حریق - اسپرینکلر](#)

• [سیستم اطفاء آشپزخانه صنعتی](#)

• [سیستم اطفاء آبروسل](#)

• [سیستم اطفاء دستی](#)

• [سیستم اطفاء گازی](#)

○ [سیستم اطفاء FM200 , NOVEC, Inert Gas \(IG\)](#)

○ [سیستم اطفاء CO₂](#)

• [سیستم تهویه و تخلیه دود](#)

• [سیستم اعلام حریق](#)

○ [آدرس پذیر](#)

○ [متعارف](#)



آموزش استاندارد

- [آموزش استاندارد NFPA 13](#)
- [آموزش استاندارد NFPA 14](#)
- [آموزش استاندارد NFPA 20](#)

آموزش نرم افزار

- [اتواسپرینک](#)
- [پایروسیم](#)
- [پت فایندر](#)

دانلود استاندارد

- [ترجمه استاندارد NFPA 30,14,13,10](#)
- [تمامی استانداردهای NFPA & FM](#)
- [ترجمه استاندارد NFPA 1037](#)

محصولات

- [اتواسپرینک ۲۰۱۳ و ۲۰۱۹ به زبان فارسی برای اولین بار در ایران](#)
- [آلارم کد ۲۰۱۹ به زبان فارسی برای اولین بار در ایران](#)
- [اطفا حریق آبی](#)
- [پایپنت \(ماژول اسپرینکلر\)](#)
- [کانتم](#)
- [اعلان حریق](#)

دوره‌های حضوری

- آموزش اتواسپرینک
- آموزش آلارم کد
- آموزش پایروسیم
- آموزش کانتم + اگزاست
- آموزش اطفا آبی + پمپ + بازدید از کارگاه
- آموزش اطفا گازی
- آموزش اطفا فوم
- آموزش مبحث سوم مقررات ملی
- آموزش اعلام حریق F&G
- آموزش اعلام حریق آدرس پذیر
- آموزش اعلام حریق متعارف
- دوره آمادگی آزمون آتش نشانی (برق، مکانیک، عمران، معماری)





دوره های آموزشی

ارائه تخفیف جهت خرید نرم افزارها

ارائه کد تخفیف جهت شرکت در دوره های آموزشی



EDUFIRE.IR

طراحی تهویه
و تخلیه دود همراه با
آموزش نرم افزار
Contam

کد آموزشی ۱۰۴

۱۶ ساعت

میانی و شناخت پمپ
بوسترپمپ های آبرسانی
و آتش نشانی به همراه
بازدید از خط تولید

کد آموزشی ۱۰۳

۱۶ ساعت

طراحی اعلام حریق
Addressable
Conventional

کد آموزشی ۱۰۲

۱۶ ساعت

طراحی اطفاء حریق
آبی با نرم افزار
AutoSPRINKY۰۱۹

کد آموزشی ۱۰۱

۱۶ ساعت

طراحی اطفاء حریق
گازی
FM200 & NOVEC
CO₂

کد آموزشی ۱۰۸

۱۶ ساعت

طراحی اطفاء حریق
و آشنایی با ضوابط
سازمان آتش نشانی

کد آموزشی ۱۰۷

۱۶ ساعت

طراحی اطفاء حریق
فوم

کد آموزشی ۱۰۶

۱۶ ساعت

طراحی سیستم اعلان
آدرس پذیر همراه با
آموزش نرم افزار
AlarmCAD

کد آموزشی ۱۰۵

۱۶ ساعت

طراحی استخر، سونا
و جکوزی

کد آموزشی ۱۱۲

۱۶ ساعت

آمادگی آزمون
آتش نشانی
مکانیک - برق
عمران - معماری

کد آموزشی ۱۱۱

۱۶ ساعت

طراحی با نرم افزار
Pyrosim

کد آموزشی ۱۱۰

۱۶ ساعت

آموزش مبحث سوم
مقررات ملی ساختمان

کد آموزشی ۱۰۹

۳۲ ساعت



آموزشگاه ادوفایر
EDUFIRE

All **NFPA & FM** STANDARDS

 **EDUFIRE_NFPA**

 **EDUFIRE.IR**

 **Latest Version**

FREE

  
EDUFIRE.IR

