NFPA 1141
Standard for Fire Protection in Planned Building Groups

1998 Edition

National Fire Protection Association, 1 Batterymarch Park, PO Box 9101, Quincy, MA 02269-9101
An International Codes and Standards Organization

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NFPA 1141

Standard for

Fire Protection in Planned Building Groups

1998 Edition

This edition of NFPA 1141, *Standard for Fire Protection in Planned Building Groups*, was prepared by the Technical Committee on Forest and Rural Fire Protection and acted on by the National Fire Protection Association, Inc., at its Annual Meeting held May 18–21, 1998, in Cincinnati, OH. It was issued by the Standards Council on July 16, 1998, with an effective date of August 5, 1998, and supersedes all previous editions.

This edition of NFPA 1141 was approved as an American National Standard on August 6, 1998.

Origin and Development of NFPA 1141

Work on this standard was begun in 1972 by the former Technical Committee on Suburban and Rural Fire Prevention and Promotion in response to needs expressed by several members. Several drafts were prepared, and a document was adopted by the Correlating Committee on Suburban and Rural Fire Protection and Prevention (a predecessor to the present committee) for presentation at the 1977 Annual Meeting. Due to technical problems, the standard was withdrawn from the meeting agenda.

Following reorganization of the Committee in 1982, a task group undertook a review and update of the 1977 document, which resulted in the 1985 edition. That edition was revised in 1990.

In this current edition, the Committee resolves several issues in clarity and consistency by bringing this document in concert with NFPA 1 and NFPA *101*®, but because of the specific circumstances as listed in the revised scope and purpose of the current document, the Committee continues to require that some elements remain more restrictive than comparable elements referenced in other NFPA documents.

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

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

Committee Scope: This Committee shall have primary responsibility for documents on fire protection for rural, suburban, forest, grass, brush, and tundra areas. This Committee shall also have primary responsibility for documents on Class A foam and its utilization for all wildland and structural fire fighting. This excludes fixed fire protection systems.

Contents

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Fire Protection in Planned Building Groups

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

Information on referenced publications can be found in Chapter 10 and Appendixes B and C.

Chapter 1 General

1-1 Scope.

1-1.1 This standard applies to planned building groups in suburban and rural areas that the authority having jurisdiction determines would be impacted by one or more of the following during a fire: limited water supply, limited fire department resources, extended fire department response time, delayed alarms, limited access, hazardous vegetation, unusual terrain, or other unusual characteristics.

1-1.2* This standard does not apply to farms or to mobile home or recreational vehicle parks.

1-2* Purpose.

1-2.1 The purpose of this standard is to reduce the impact of a fire in a planned building group in suburban and rural areas where there might be limited water supply, limited fire department resources, extended fire department response time, delayed alarms, limited access, hazardous vegetation, unusual terrain, or other unusual characteristics.

1-2.2 This standard shall not be construed as prohibiting better construction or planning features that will materially improve fire protection.

1-2.3 This standard does not set forth general fire protection features or procedures addressed in other codes or standards. It is anticipated that the authority having jurisdiction shall use recognized fire protection measures to meet local conditions.

1-2.4 When unusual local conditions exist, the authority having jurisdiction shall determine equivalent requirements that provide a level of protection no less than would be afforded by full compliance with this standard.

1-2.5 Where a provision of any other standard, code, law, or regulation recognized by the authority having jurisdiction is in conflict with this standard, the most restrictive provision shall apply.

Chapter 2 Definitions

2-1* Definitions.

Alternative. A system, condition, arrangement, material, or equipment submitted for approval to the authority having jurisdiction and the fire chief as a substitute for a code requirement.

Approved.* Acceptable to the authority having jurisdiction.

Authority Having Jurisdiction.* The organization, office, or individual responsible for approving equipment, an installation, or a procedure.

Automatic Fire Extinguishing System. Any system that is designed and installed to detect a fire and subsequently discharge an extinguishing agent without human activation or direction.

Basement. A story with more than 50 percent of its cubic volume below the average adjacent ground level.

Curb Cut. Reduced curb height to facilitate vehicle passage over or across a curb. Curb cut can be an abrupt reduction or a tapering reduction for the length of the curb on each side of the means of access.

Dry Hydrant. A permanent piping system, normally a drafting source, that provides access to a water source other than a municipal-type water system.

Dwelling. A single unit providing complete and independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation.

Existing Condition. Any situation, circumstance, or physical makeup of any structure, premise, or process that was ongoing or in effect prior to the adoption of this standard.

Farms. Those properties that are used primarily for agricultural purposes.

Fire Department. The governmental or other organization that is responsible for providing fire protection services to an area.

Fire Flow. The flow rate of a water supply, measured at 20 psi (137.9 kPa) residual pressure, that is available for fire fighting.

Fire Hazard. Any situation, process, material, or condition that, on the basis of applicable data, can cause a fire or an explosion or provide a ready fuel supply to augment the spread or intensity of the fire or explosion and that poses a threat to life or the property of others.

Fire Hydrant. A valved connection on a water supply system having one or more outlets and that is used to supply hose and fire department pumpers with water.

Fire Lane. A means of access or other passageway designated and identified to provide access for emergency apparatus where parking is not allowed.

Fire Protection. All measures taken to reduce the burden of fire on the quality of life. Fire protection includes measures such as fire prevention, fire suppression, built-in fire protection systems, and planning and building codes.

Fire Protection System. Any fire alarm device or system or fire extinguishing device or system, or their combination, that is designed and installed for detecting, controlling, or extinguishing a fire or otherwise alerting occupants, or the fire department, or both, that a fire has occurred.

Floor Area, Gross. The area of a building under the roof, multiplied by the number of floors, including the basement.

Ground Elevation, Adjacent. The reference plane representing the average elevation of the finished ground level measured at a distance of 10 ft (3 m) from all exterior walls of the building.

Height. As applied to a building, the vertical distance from the adjacent ground elevation to the average elevation of the roof of the highest story.

Jurisdiction. Any governmental unit or political division or subdivision including but not limited to township, village, borough, parish, city, county, state, commonwealth, province, freehold, district, or territory over which the governmental unit exercises power and authority.

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.

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 identified standards or has been tested and found suitable for a specified purpose.

Means of Access. The method by which entry or approach is made by emergency apparatus to, for example, roadways, fire lanes, and parking lots.

Municipal-Type Water Systems. A system having water pipes servicing hydrants and designed to furnish, over and above domestic consumption, a minimum of 250 gpm (950 L/min) at 20 psi (137.9 kPa) residual pressure for a 2-hour duration.

Planned Building Groups. Multiple structures constructed on a parcel of land, excluding farmland, under the ownership, control, or development by an individual, a corporation, a partnership, or a firm.

Private Street. Any accessway normally intended for vehicular use not dedicated as a public street.

Public Street. A thoroughfare that has been dedicated for vehicular use by the public.

Roadway. Any public or private street, including bridges.

Shall. Indicates a mandatory requirement.

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

Standpipe.* A pipe and attendant hose valves and hose (if provided) used for conveying water to various parts of a building for fire-fighting purposes.

Story. That portion of a building between the upper surface of the floor and the upper surface of the next floor or roof above.

Structure. That which is built or constructed, an edifice or building of any kind, or any piece of work artificially built up or composed of parts joined together in some definite manner.

Chapter 3 Plans

3-1* Plans. As a minimum, the authority having jurisdiction shall require anyone proposing to develop a planned building group to submit preliminary, working, and as-built plans.

3-1.1* Preliminary Plans. All preliminary plans, when submitted, shall contain a site plan showing proposed water supply, roadway access, fire department access, and other items pertinent to the specific project. The authority having jurisdiction shall make recommendations to the submitter based on the preliminary plans to assist in developing the working plans, which shall then be submitted to the authority having jurisdiction for approval.

3-1.2 Working Plans. Working plans, drawn to scale and signed by a licensed architect or engineer, shall be accurate and shall illustrate the final design of items required by this standard.

3-1.3 As-Built Plans. Drawings showing items listed in 3-1.1, building floor plans, and fire protection systems, as built, shall be submitted to the fire department having jurisdiction upon completion of the project.

Chapter 4 Means of Access

4-1* General.

4-1.1 Means of access for fire department apparatus shall consist of roadways, fire lanes, parking lot lanes, or a combination thereof, and shall be provided to all structures.

4-1.2 Access to the property of the planned building group shall be provided by a minimum of two distinctly separate routes of ingress and egress, each located as remotely from the other as possible.

4-2 Roadways.

4-2.1 Roadways shall be constructed of a hard, all-weather surface designed to support adequately the heaviest piece of fire apparatus likely to be operated on the roadway.

4-2.2 Every dead-end roadway more than 300 ft (92 m) in length shall be provided at the closed end with a turnaround having not less than a 120-ft (37-m) outside diameter of traveled way.

4-2.3* Roadways shall have a minimum clearance of 12 ft (3.7 m) for each lane of travel, excluding shoulders and parking. Provisions shall be made for factors that could impinge on the minimum width, for example, drainage, snow removal, parking, and utilities.

4-2.4 Grades shall be not more than 10 percent.

Exception: Steeper grades shall be permitted by the authority having jurisdiction where mitigation measures can be agreed upon jointly by the fire and road engineering departments.

4-2.5 Grades shall be not less than 0.5 percent in order to prevent pooling of water in a traveled way.

4-2.6* Landscaping or other obstructions placed around structures shall be maintained in a manner that does not impair or impede accessibility for fire department operations.

4-2.7 Any secondary road intersecting with another road shall be sloped 1 to 3 percent down and away from the intersection for a distance of 100 ft (30 m) from the intersection.

4-2.8* At least 13 ft 6 in. (4.4 m) nominal vertical clearance shall be provided and maintained over the full width of all means of access.

4-2.9 Turns in roadways shall maintain the minimum road width.

4-2.10* Turns in publicly owned or privately owned major feed roadways shall be constructed with a minimum radius of 100 ft (30 m) to the centerline.

4-3 Parking Lots.

4-3.1 The minimum lengths of parking lot stalls as measured from the end of the stall and the minimum aisle widths shall be as shown in Table 4-3.1.

Table 4-3.1 Parking Lot Stall Dimensions

Minimum Stall Lengths	Minimum Aisle Width (one-way traffic flow)	Minimum Aisle Width (two-way traffic flow)
27.5 ft (8.2 m) for 45 degree parking	16 ft (4.9 m)	24 ft (7.4 m)
23.7 ft (6.6 m) for 60 degree parking	16 ft (4.9 m)	24 ft (7.4 m)
20.9 ft (6.2 m) for 75 degree parking	23 ft (7.0 m)	24 ft (7.4 m)
18.5 ft (5.6 m) for 90 degree parking	26 ft (8.0 m)	26 ft (8.0 m)

4-3.2 Parking lot lanes adjacent to any building shall provide a travel lane with 16 ft (4.9 m) clear width if traffic flow is one-way and 24 ft (7.4 m) clear width if traffic flow is two-way.

4-3.3 The minimum turning radius for parking lot lanes necessary for fire department apparatus access shall be determined by the authority having jurisdiction.

4-4* Fire Lanes.

4-4.1 Fire lanes shall be provided as required by the fire department having jurisdiction and in keeping with the requirements of this section.

4-4.2 Fire lanes providing one-way travel shall be a minimum of 16 ft (4.9 m) in width. Fire lanes with two-way travel shall be a minimum of 24 ft (7.4 m) in width.

4-4.3 Turns in fire lanes shall be constructed with a minimum radius of 25 ft (7.6 m) at the inside curb line and a minimum radius of 50 ft (15.2 m) at the outside curb line.

4-4.4 Fire lanes connecting to roadways shall be provided with curb cuts extending at least 2 ft (0.61 m) beyond each edge of the fire lane.

4-4.5 The designation, design, and maintenance of fire lanes on private property shall be approved by the authority having jurisdiction.

4-4.6 The clear opening provided through gates shall be 2 ft (0.61 m) wider than the traveled way.

4-4.7 All gates shall be located a minimum of 30 ft (9.2 m) from the public right-of-way and shall not open outward.

4-4.8 Fire department personnel shall have ready access to locking mechanisms on any gate restricting access to a fire lane.

4-4.9* Appropriate no parking signs shall be posted in accordance with the instructions of the fire department having jurisdiction, and a method of enforcing such provisions shall be provided.

4-4.10 At least 13 ft 6 in. (4.1 m) nominal vertical clearance shall be provided and maintained over the full width of a fire lane.

Chapter 5 Location of Structures

5-1 Means of Access.

5-1.1 At least one approved means of access shall be provided to each structure or other nonstructural fire hazard within the planned building group. For structures or other nonstructural fire hazards exceeding two stories or 30 ft (9.2 m) in height above average adjacent ground level, not less than two approved separate means of access shall be provided.

5-1.2 Structures exceeding 1000 ft^2 (102.5 m^2) gross floor area shall be required to be within 50 ft (15.4 m) of an approved means of access.

Exception No. 1: Structures shall be within 200 ft (60 m) of an approved means of access where the structure is less than 30 ft (9.2 m) in height and protected by an automatic sprinkler system installed in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems; NFPA 13D, Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes; or NFPA 13R, Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height.

Exception No. 2: Where any combination of private fire protection systems, including but not limited to fire-resistive roofs, fire separation walls, space separation, and automatic fire-extinguishing systems, is provided and approved by the authority having jurisdiction as an acceptable alternative, waivers to the provisions of 5-1.2 shall be permitted.

5-1.3* Structures exceeding two stories or 30 ft (9.2 m) in height above average adjacent ground level shall have at least 25 percent of one side not more than 30 ft (9.2 m) from an approved means of access. At least 25 percent of one other side shall be not more than 50 ft (15.4 m) from an approved means of access. Both of these sides shall have a means of entry into the structure adjacent to the means of access.

5-2 Structure Separation. If two structures are part of the same planned building group and either of them exceeds two stories or 30 ft (9.2 m) in height above average adjacent ground level, they shall be separated from each other by at least 50 ft (15.4 m) and shall be at least 25 ft (7.6 m) from a property line. All other structures shall be separated by at least 20 ft (6.1 m) from another structure and shall be at least 10 ft (3.0 m) from a property line.

Chapter 6 Fire Protection

6-1 Automatic Fire Protection.

6-1.1 Automatic fire extinguishing systems shall be required as set forth in the applicable NFPA code or standard for the intended occupancy of the structures or as otherwise required by the authority having jurisdiction. All such systems shall be installed in accordance with the applicable NFPA standard or code for the type of fire extinguishing system installed. *(See Appendix B.)*

6-1.2 Any residential building containing more than two residential living units shall have an automatic sprinkler system installed in accordance with NFPA 13, *Standard for the Installation of Sprinkler Systems*, or NFPA 13R, *Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height,* whichever is appropriate.

6-1.3* If mounted on the building they serve, fire department connections for sprinkler systems shall be located not less than 100 ft (30.8 m) nor more than 200 ft (61.6 m) from a fire hydrant. If such connections are located at least 100 ft (30.8 m) from the building they serve, they shall be located not more than 50 ft (15.4 m) from a fire hydrant. The location of the fire department connection shall be determined by the authority having jurisdiction.

6-2 Manual Fire Protection.

6-2.1* All structures four or more stories or over 50 ft (15.4 m) in height above adjacent ground elevation with intermediate stories or balconies shall be equipped with a standpipe system in accordance with the provisions of NFPA 14, *Standard for the Installation of Standpipe and Hose Systems.* If mounted on the side of the building they serve, fire department connections for standpipe systems shall be located not less than 100 ft (30.8 m) nor more than 200 ft (61.6 m) from a fire hydrant. If such connections are located at least 100 ft (30.8 m) from the building they serve, they shall be located not more than 50 ft (15.4 m) from a fire hydrant. The location of the fire department standpipe connection shall be determined by the authority having jurisdiction.

Exception: This section shall not apply to industrial process structures where the life or property of others is not imperiled by fire or explosion.

6-2.2* Portable fire extinguishers shall be installed in accordance with NFPA 10, *Standard for Portable Fire Extinguishers.* In addition, in buildings containing more than two dwelling units, a portable fire extinguisher, accessible from an exit and having a minimum rating of 2-A:10-B:C, shall be provided in each dwelling unit.

6-3 Automatic Fire Warning Systems.

6-3.1 For residential structures containing fewer than six living units, an approved single-station smoke detector(s) or an approved automatic detection system shall be installed in each dwelling unit in accordance with the applicable provisions of NFPA 72, *National Fire Alarm Code®.*

6-3.2 For all other structures exceeding 1000 ft^2 (102.5 m^2) gross floor area, an approved fire warning or alarm system shall be installed in accordance with the applicable NFPA code or standard for the intended occupancy of the structure. Such systems shall retransmit an alarm. Alarms or warning systems shall be tested and maintained in accordance with the applicable NFPA code or standard or as required by the authority having jurisdiction.

Chapter 7 Water Supply

7-1 General.

7-1.1 Water supply systems not publicly owned and installed shall meet the minimum requirements of NFPA 24, *Standard for the Installation of Private Fire Service Mains and Their Appurtenances,* where no recognized water supply distribution exists.

7-1.2 Private fire service mains and hydrants shall be installed to meet the requirements of NFPA 24, *Standard for the Installation of Private Fire Service Mains and Their Appurtenances.*

7-1.3 Where other fire-fighting water supply systems are established by the authority having jurisdiction, they shall not be less than the requirements of NFPA 1231, *Standard on Water Supplies for Suburban and Rural Fire Fighting.*

7-1.4 Fire hydrants shall be marked in a uniform manner, as designated by the authority having jurisdiction.

7-1.5 Fire hydrants located in parking areas shall be protected by barriers that will prevent physical damage from vehicles without obstructing hydrant operation.

7-1.6 Fire hydrants shall be located within 3 ft (0.9 m) of the curb line of the means of access unless the authority having jurisdiction determines another location is more acceptable for fire department use.

7-1.7* Threads on fire hydrant outlets shall be American National Fire Hose Connection Screw Threads and shall be equipped with thread adapters where local fire department thread is different.

7-1.8* Water sources shall be located such that the highest required fire flow, but in no case less than 250 gpm (950 L/min), can be established and maintained within a time period approved by the authority having jurisdiction.

7-2 During Construction Phase.

7-2.1 When the infrastructure is being installed, and prior to the location and construction of buildings or portions thereof, the water supply for fire protection, either temporary or permanent and acceptable to the authority having jurisdiction, shall be made available prior to delivery of combustible materials.

7-2.2 When the infrastructure is being installed, and prior to the location and construction of buildings or portions thereof, fire hydrants shall be installed at a spacing not to exceed 660 ft (200 m) of vehicle travel distance. Where buildings are proposed, the authority having jurisdiction shall require additional hydrants and closer spacing where building size, use, construction, and lack of built-in fire protection mandate.

7-2.3 Prior to the construction of buildings or portions thereof, all site plans shall be reviewed. At this time the authority having jurisdiction shall review the fire flow required and designate spacing of hydrants according to the following schedule:

(a) There shall be at least one hydrant within 300 ft (92 m) of any building at a location acceptable to the authority having jurisdiction.

(b) No portion of the exterior walls of the building shall be more than 200 ft (61.6 m) from a hydrant, where vehicular access is provided.
(c) Additional hydrants shall be provided to meet the remaining fire flow, if necessary.
(d) In areas of one- and two-family dwellings, hydrants shall be located a maximum of 660 ft (200 m) vehicle travel distance apart.

Exception: Where conditions are such that items (a) through (d) are impractical to achieve, the authority having jurisdiction shall consider reasonable substitutions meeting the intent of this section, provided adequate fire protection is maintained.

7-3 Areas with Municipal-Type Water Systems.

7-3.1 For a required fire flow exceeding 1500 gpm (5700 L/min), the water supply system shall be capable of delivering that fire flow for at least 2 hours at 20 psi (137.9 kPa). For all other required fire flows, the water supply system shall be capable of delivering the required fire flow for at least 1 hour at 20 psi (137.9 kPa).

7-3.2 Fire hydrants shall be supplied by not less than a 6-in. (15-cm) diameter main installed on a looped system or by not less than an 8-in. (20-cm) diameter main if the system is not looped or the fire hydrant is installed on a dead-end main exceeding 300 ft (92 m) in length.

7-3.3 Dead-end mains shall not exceed 600 ft (184 m) in length for main sizes under 10 in. (25 cm) in diameter.

7-4 Acceptance. The contractor or installer of water supply systems in planned building groups shall demonstrate by actual test that the capacity of the water supply system will meet fire protection design requirements. Such tests shall be certified by the fire department and other authorities having jurisdiction.

Chapter 8 Structural Requirements

8-1* Building Code. Construction of each structure shall comply with the building code requirements of the jurisdiction.

8-2 Planned Building Groups Adjacent to Wildland Fuels.

8-2.1 Vents. Vents shall be screened with a corrosion-resistant, noncombustible wire mesh not more than $^1/_4$ in. (0.64 cm) nominal in size.

8-2.2 Overhanging Projections. Porches, decks, patios, balconies, and similar undersides of overhangs shall be constructed of heavy timber, as defined by local building codes, 1-hour fire-resistive material, or noncombustible construction.

8-2.3 Overhanging Buildings. The underside of overhanging buildings shall be constructed with material of heavy timber, as defined by local building codes, 1-hour fire-resistive material, or noncombustible construction.

8-2.4 Exterior Vertical Walls. Exterior vertical wall coverings shall be constructed of at least $^1/_2$-in. (1.3-cm) nominal sheathing or equivalent material.

8-3 Common Walls. Common walls between dwelling or commercial units shall be constructed to provide a fire resistance rating of not less than 1 hour.

8-4 Vehicle Storage. Vehicle storage areas shall be separated from living areas by walls and ceilings constructed to provide a fire resistance rating of not less than 1 hour.

8-5 Roof Coverings.

8-5.1* Only listed fire-retardant roof covering assemblies shall be used.

8-5.2 Roof coverings shall be a Class C listed or better fire-retardant roofing assembly.

Chapter 9 Fire Protection During Construction

9-1* General Requirements.

9-1.1 Protection shall not be less than that required by the fire department having jurisdiction.

9-1.2 Fire department vehicular access to all structures under construction shall be provided at all times. In areas where ground surfaces are soft or likely to become soft, hard all-weather surface access roads shall be provided.

9-1.3 Trash and debris shall be removed from the construction site as often as necessary to maintain the site in a fire-safe manner.

9-1.4 Flammable or combustible liquids shall be stored, handled, or used on the construction site in accordance with the applicable provisions of NFPA 30, *Flammable and Combustible Liquids Code;* NFPA 58, *Liquefied Petroleum Gases Code;* and NFPA 395, *Standard for the Storage of Flammable and Combustible Liquids at Farms and Isolated Sites.*

9-1.5 At least one portable fire extinguisher having a rating of at least 4-A:30-B:C shall be within a travel distance of 75 ft (23 m) or less to any point of a structure under construction. Personnel normally on the construction site shall be instructed in the use of the fire extinguishers provided.

Chapter 10 Referenced Publications

10-1 The following documents or portions thereof are referenced within this standard as mandatory requirements and shall be considered part of the requirements of this standard. The edition indicated for each referenced mandatory document is the current edition as of the date of the NFPA issuance of this standard. Some of these mandatory documents might also be referenced in this standard for specific informational purposes and, therefore, are also listed in Appendices B and C.

10-1.1 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.

NFPA 10, *Standard for Portable Fire Extinguishers,* 1998 edition.

NFPA 13, *Standard for the Installation of Sprinkler Systems,* 1996 edition.

NFPA 13D, *Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes,* 1996 edition.

NFPA 13R, *Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height,* 1996 edition.

NFPA 14, *Standard for the Installation of Standpipe and Hose Systems,* 1996 edition.

NFPA 24, *Standard for the Installation of Private Fire Service Mains and Their Appurtenances,* 1995 edition.

NFPA 30, *Flammable and Combustible Liquids Code,* 1996 edition.

NFPA 58, *Liquefied Petroleum Gases Code*, 1998 edition.

NFPA 72, *National Fire Alarm Code®*, 1996 edition.

NFPA 395, *Standard for the Storage of Flammable and Combustible Liquids at Farms and Isolated Sites,* 1993 edition.

NFPA 1231, *Standard on Water Supplies for Suburban and Rural Fire Fighting,* 1993 edition.

Appendix A Explanatory Material

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

A-1-1.2 For requirements on mobile home parks, see NFPA 501A, *Standard for Fire Safety Criteria for Manufactured Home Installations, Sites, and Communities.* For requirements on recreational vehicle parks, see NFPA 501D, *Standard for Recreational Vehicle Parks and Campgrounds.*

A-1-2 The requirements of this standard can be used for developments having distinguishing features similar to planned building groups including but not limited to subdivisions, recreation camps, and farms.

A-2-1 Words defined in this standard are intended for use only with the sections of this standard. Definitions set forth in any document referenced by this standard shall be the acceptable definitions for use of that document only. Words not specifically defined in this standard or other referenced documents shall be interpreted as being the ordinary usage of the word as set forth in *Webster's Third New International Dictionary of the English Language,* Unabridged, as published by the G & C Merriam Company, Springfield, Massachusetts, in 1966.

A-2-1 Approved. The National Fire Protection Association does not approve, inspect, or certify any installations, procedures, equipment, or materials; nor does it approve or evaluate testing laboratories. In determining the acceptability of installations, procedures, equipment, or materials, the authority having jurisdiction may base acceptance on compliance with NFPA or other appropriate standards. In the absence of such standards, said authority may require evidence of proper installation, procedure, or use. The authority having jurisdiction may also refer to the listings or labeling practices of an organization that is concerned with product evaluations and is thus in a position to determine compliance with appropriate standards for the current production of listed items.

A-2-1 Authority Having Jurisdiction. The phrase "authority having jurisdiction" 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-2-1 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-2-1 Standpipe. See NFPA 14, *Standard for the Installation of Standpipe and Hose Systems.*

A-3-1 Additional plans, such as fuel hazard abatement, might be required to address hazards specific to the area or project.

A-3-1.1 Reviewing plans and finding cooperative solutions to problems during the planning stage tend to eliminate many major difficulties, misunderstandings, and economic waste.

A-4-1 This section applies to roads constructed within the confines of private property whether they be dedicated or not.

A-4-2.3 Road widths should be sufficient for travel and the passage of other vehicles and should allow for safety when fire personnel are operating from parked vehicles in the vicinity of the fire scene.

A-4-2.6 These obstructions include those obscuring or interfering with fire department connections to sprinkler or standpipe systems or both.

A-4-2.8 Vertical clearances of less than 14 ft 6 in. (4.5 m) can prohibit or severely slow the response of certain types or makes of fire apparatus.

A-4-2.10 Turns in roads of this width should be designed and constructed as indicated, or fire apparatus might have to ride up on the curb. Turns with a radius less than mandated here can prohibit or seriously impede apparatus response.

A-4-4 A fire lane can be a subsurface construction of hard material that is adequately designed to support the heaviest piece of fire apparatus likely to be driven on it and then covered with no more than 3 in. (7.6 cm) of soil, sod, or both. When a subsurface fire lane is constructed, it should be identified in a manner acceptable to the fire department.

A-4-4.9 The local law enforcement officers should be given written legal authority to enforce parking regulations, or property management should be prepared to enforce these regulations with their own personnel, including the towing of vehicles as necessary.

A-5-1.3 For tall buildings, it might be necessary to position apparatus on two or more sides of the building for effective fire-fighting and rescue operations. Ground ladders can be used effectively on short buildings. Tall buildings normally require the use of aerial ladders. Preferably, access should be provided at the front and rear of the structure.

A-6-1.3 The authority having jurisdiction should consider the hydrant-to-building proximity in determining the location of the fire department connection pursuant to enforcement of this section. Hydrants should not be located closer than 50 ft (15.4 m) to the building being protected by the sprinkler system. This can be accomplished by locating the fire department connection away from the building.

A-6-2.1 The authority having jurisdiction should consider the hydrant-to-building proximity in determining the location of the fire department connection pursuant to enforcement of this section. Hydrants should not be located closer than 50 ft (15.4 m) to the building being protected by a standpipe system. This can be accomplished by locating the fire department connection away from the building.

A-6-2.2 This requirement can be met by providing one multipurpose dry chemical fire extinguisher or one Class A and one Class B:C fire extinguisher. The reasoning behind the requirement to locate these extinguishers in the dwelling unit is to prevent theft.

A-7-1.7 See NFPA 1963, *Standard for Fire Hose Connections.*

A-7-1.8 The department should strive to establish 250 gpm (950 L/min) within 5 minutes of arrival of the first piece of apparatus and attempt to establish and maintain the required fire flow within 15 minutes of arrival. *(See NFPA 1231, Standard on Water Supplies for Suburban and Rural Fire Fighting.)*

A-8-1 In areas not governed by building codes, NFPA codes or standards as they apply for the intended occupancy of the structure should be considered the minimum requirements.

A-8-5.1 Fire-retardant roof covering assemblies are A, B, or C Class. *(See NFPA 203, Guide on Roof Coverings and Roof Deck Constructions, for definitions.)* The specific class should be consistent with the fire threat as determined by the authority having jurisdiction.

A-9-1 For additional fire protection considerations during construction, refer to NFPA 241, *Standard for Safeguarding Construction, Alteration, and Demolition Operations.*

Appendix B Referenced Publications

B-1 The following documents or portions thereof are referenced within this standard for informational purposes only and are thus not considered part of the requirements of this standard unless also listed in Chapter 10. The edition indicated here for each reference is the current edition as of the date of the NFPA issuance of this standard.

B-1.1 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.

NFPA 14, *Standard for the Installation of Standpipe and Hose Systems,* 1996 edition.

NFPA 203, *Guide on Roof Coverings and Roof Deck Constructions,* 1995 edition.

NFPA 241, *Standard for Safeguarding Construction, Alteration, and Demolition Operations,* 1996 edition.

NFPA 501A, *Standard for Fire Safety Criteria for Manufactured Home Installation, Sites, and Communities,* 1997 edition.

NFPA 501D, *Standard for Recreational Vehicle Parks and Campgrounds,* 1996 edition.

NFPA 1231, *Standard on Water Supplies for Suburban and Rural Fire Fighting,* 1993 edition.

NFPA 1963, *Standard for Fire Hose Connections,* 1998 edition.

Appendix C Bibliographical and Information Sources

C-1 The following documents or portions thereof are referenced within this standard for informational purposes only and are thus not considered part of the requirements of this standard unless also listed in Chapter 10. The edition indicated here for each reference is the current edition as of the date of the NFPA issuance of this standard.

C-1.1 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.

NFPA 1, *Fire Prevention Code*, 1997 edition.

NFPA 20, *Standard for the Installation of Centrifugal Fire Pumps*, 1996 edition.

NFPA 22, *Standard for Water Tanks for Private Fire Protection*, 1996 edition.

NFPA 31, *Standard for the Installation of Oil-Burning Equipment*, 1997 edition.

NFPA 70, *National Electrical Code®*, 1996 edition.

NFPA 80A, *Recommended Practice for Protection of Buildings from Exterior Fire Exposures*, 1996 edition.

NFPA 82, *Standard on Incinerators and Waste and Linen Handling Systems and Equipment*, 1994 edition.

NFPA 90A, *Standard for the Installation of Air Conditioning and Ventilating Systems*, 1996 edition.

NFPA 90B, *Standard for the Installation of Warm Air Heating and Air Conditioning Systems*, 1996 edition.

NFPA *101®*, *Life Safety Code®*, 1997 edition.

NFPA 211, *Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances*, 1996 edition.

NFPA 220, *Standard on Types of Building Construction*, 1995 edition.

NFPA 299, *Standard for Protection of Life and Property from Wildfire*, 1997 edition.

NFPA 600, *Standard on Industrial Fire Brigades*, 1996 edition.

NFPA 601, *Standard for Security Services in Fire Loss Prevention*, 1996 edition.

NFPA 780, *Standard for the Installation of Lightning Protection Systems,* 1997 edition.

NFPA 1221, *Standard for the Installation, Maintenance, and Use of Public Fire Service Communication Systems*, 1994 edition.

NFPA *Inspection Manual,* 7th edition, NFPA, MYM-1M-94.

Fire Protection Handbook, 18th edition, NFPA, MY-FPH1791.

Brannigan, Francis L., *Building Construction for the Fire Service,* Montgomery College, Rockville, MD, NFPA MY-BCFS-3.

Kimball, Warren Y., *Fire Attack I,* Jamestown, RI, 1966.

Kimball, Warren Y., *Fire Attack II,* Jamestown, RI, 1966.

C-1.2 Other Publications and Information Sources.

American Institute of Architects Research Corp., 1735 New York Ave., Washington, DC 20006.

American Insurance Service Group, 85 John St., New York, NY 10038.

American Water Works Association, 6666 W. Quincy Ave., Denver, CO 80235.

Building Officials and Code Administrators International, 4051 W. Flossmoor Rd., Country Club Hills, IL 60478-5795.

Fire Marshals Association of North America, c/o NFPA, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.

Fire Suppression Rating Schedule, Insurance Services Office, World Trade Center, New York, NY 10048-1199.

International Conference of Building Officials, 5360 S. Workman Mill Rd., Whittier, CA 90601.

Managing Fire Services, International City/County Managers' Association, 777 N. Capitol St., Washington, DC 20002.

Southern Building Code International Congress, 900 Montclair Rd., South Birmingham, AL 35213.