

NFPA 1141

Fire Protection

in Planned

Building Groups

1990 Edition



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The Board of Directors reaffirms that the National Fire Protection Association recognizes that the toxicity of the products of combustion is an important factor in the loss of life from fire. NFPA has dealt with that subject in its technical committee documents for many years.

There is a concern that the growing use of synthetic materials may produce more or additional toxic products of combustion in a fire environment. The Board has, therefore, asked all NFPA technical committees to review the documents for which they are responsible to be sure that the documents respond to this current concern. To assist the committees in meeting this request, the Board has appointed an advisory committee to provide specific guidance to the technical committees on questions relating to assessing the hazards of the products of combustion.

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NFPA 1141
Standard for
Fire Protection in Planned Building Groups
1990 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 21-24, 1990 in San Antonio, TX. It was issued by the Standards Council on July 20, 1990, with an effective date of August 17, 1990, and supersedes all previous editions.

The 1990 edition of this document has been approved by the American National Standards Institute.

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 (predecessor to 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 Due to technical problems, the standard was withdrawn from the meeting agenda.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. The current Committee has revised the 1985 edition resulting in the 1990 edition.

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

Information on referenced publications can be found in Chapter 4 and Appendix B.

Chapter 1 Purpose and Scope

1-1 Purpose. The purpose of this standard is to consolidate into one document the necessary requirements for the prevention or minimizing of loss of lives and property that may result from fire in buildings that are a part of planned building groups.

1-2 Scope.

1-2.1 This standard is intended to apply to all developments meeting the definition of planned building groups and may be used as guidance in other situations where a number of buildings are constructed in an area with limited access, water supply, or other distinguishing features that may be referred to in this standard. This standard is not intended to apply to mobile home or recreation vehicle parks, which are provided for in NFPA 501A, *Standard for Firesafety Criteria for Manufactured Home Installations, Sites, and Communities*, and NFPA 501D, *Standard for Firesafety Criteria for Recreational Vehicle Parks and Campgrounds*, respectively, nor to farm properties.

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

1-2.3 The provisions of this standard are intended to encourage the use of innovative alternatives that are deemed through inspection, tests, or other substantive means as meeting the intent of this standard by the authority having jurisdiction. These alternatives require monitoring by the authority having jurisdiction to ensure the integrity of the provisions of this standard.

1-2.4 This standard shall not be construed as altering any existing code, law, or regulation that may require fire protection features not covered or alluded to in this standard, nor shall it waive any requirements of any code, law, or regulation. When any conflict exists between this standard and any other applicable code, law, regulation, or order, the provisions of the applicable code, law, regulation, or order shall prevail.

1-2.5 This standard is not intended to set forth general fire prevention features or procedures that may be covered in other codes or standards, nor shall it prohibit the common-sense use of fire prevention measures. (See Appendix B.)

Chapter 2 Definitions

2-1 Definitions. 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.

Alternative. A system, condition, arrangement, material, or equipment submitted to the fire marshal as a substitute for a code requirement.

Approved. Acceptable to the "authority having jurisdiction."

NOTE: 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 or 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 concerned with product evaluations which is in a position to determine compliance with appropriate standards for the current production of listed items.

Authority Having Jurisdiction. The "authority having jurisdiction" is the organization, office or individual responsible for "approving" equipment, an installation or a procedure.

NOTE: 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, 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 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."

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 grade.

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

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.

Farm Properties. Those properties that are used primarily for agricultural purposes.

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

Fire Door. A tested, listed, or approved door and door assembly constructed and installed for the purpose of preventing the spread of fire through openings in walls, partitions, or other horizontal or vertical construction. (See *NFPA 80, Standard for Fire Doors and Windows, for classification and types of fire doors.*)

Fire Hazard. Any situation, process, material, or condition that, on the basis of applicable data, may cause a fire or 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 piped water supply system having one or more outlets and that is used to supply hose and fire department pumpers with water.

Fire Lane. The road or other passageway developed to allow the passage of fire apparatus.

Fire Marshal. The individual designated as the administrative head of the agency, bureau, or division responsible for the administration and enforcement of the fire protection laws of the jurisdiction. For purposes of utilizing this standard, this term shall also apply to any person designated as a representative of the fire marshal.

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 floor area within the inside perimeter of the outer walls of the building under consideration with no deduction for hallways, stairs, closets, thickness of interior walls, columns, or other features. Where the term area is used elsewhere in this code, it shall be understood to be gross area unless otherwise specified.

Grade. The reference plane representing the average elevation of finished ground level adjoining the building at all exterior walls.

Height. As applied to a building, height means the vertical distance from grade 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 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 or materials included in a list published by an organization acceptable to the "authority having jurisdiction" and concerned with product evaluation, that maintains periodic inspection of production of listed equipment or materials and whose listing states either that the equipment or material meets appropriate standards or has been tested and found suitable for use in a specified manner.

NOTE: The means for identifying listed equipment may vary for each organization concerned with product evaluation, some of which 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.

Means of Access. The method or arrangement by which entry or approach is made to a building area by fire department apparatus.

Municipal-Type Water Systems. A system having water pipes servicing hydrants and designed to furnish, over and above domestic consumption, a minimum flow of 250 gpm at 20 psi residual pressure for a two hour duration.

Planned Building Groups. Multiple structures constructed on a parcel of land that is under the ownership, control, or development by one individual, corporation, partnership, or firm, excluding farms, manufactured home installations, sites, and communities and recreational vehicle parks and campgrounds.

Private Building. Any building or that portion of a building that is normally not frequented by nor open to the public.

Private Drive. The same as Private Street.

Private Dwelling. The same as Dwelling.

Private Road. The same as Private Street.

Private Street. Any access way normally intended for vehicular use in the movement between points within a planned building group area or between the planned building group area and a street.

Roadway. Any street, private street, or fire lane.

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. (See *NFPA 14, Standard for the Installation of Standpipe and Hose Systems.*)

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

Street. A public thoroughfare (street, avenue, or boulevard) that has been dedicated for vehicular use by the public and can be used for access by fire department vehicles.

Structure. Any building, monument, or other object that is constructed with the ground as its foundation or normal resting place.

Supervised Automatic Fire Extinguishing System. Any automatic fire extinguishing system that is constantly monitored so as to determine its operating condition at all times.

System. Several items of equipment, assembled, grouped, or otherwise interconnected, for the accomplishment of a specific purpose or function.

Wildfire. An unplanned and unwanted fire requiring suppression action; an uncontrolled fire, usually spreading through vegetative fuels but often threatening structures.

Chapter 3 General Requirements

3-1* Means of Access for Fire Department Apparatus.

3-1.1 Means of access for fire department apparatus shall consist of fire lanes, private streets, streets, parking lot lanes, or a combination thereof.

3-1.2 Means of access for fire department apparatus shall be provided to all structures in planned building groups in accordance with Section 3-1 and the applicable provisions of Sections 3-2 through 3-9.

3-1.3* Means of access for fire department apparatus shall be constructed of a hard, all-weather surface adequately designed to support the heaviest piece of fire apparatus likely to be operated on the fire lane, private street, street, or parking lot lane.

3-1.4 Every dead-end roadway more than 300 ft (91 m) in length shall be provided at the closed end with a turnaround acceptable to the fire department.

3-1.5* Turns in roadways shall maintain the minimum road width.

3-1.5.1 Turns in publicly owned or privately owned major feed roadways shall be constructed with a minimum radius of 100 ft (30.5 m) to the centerline.

3-1.5.2 Turns in other privately owned means of access shall be constructed with a minimum radius of 25 ft (7.5 m) at the inside curb line and a radius of 50 ft (15 m) at the outside curb line.

3-1.6* Roadways shall be not less than 24 ft (7 m) wide provided no parking is allowed, not less than 30 ft (9 m) wide if parallel parking is allowed on one side, and not less than 36 ft (10.5 m) wide if parallel parking is allowed on both sides.

3-1.7 Parking in any means of access shall not be permitted within 20 ft (6 m) of a fire hydrant, sprinkler, or standpipe connection or in any other manner that will obstruct or interfere with the fire department's use of the hydrant or connection.

3-1.8 "No Parking" signs or other designation indicating that parking is prohibited shall be provided at all normal and emergency access points to structures and within 20 ft (6 m) of each fire hydrant, sprinkler, or standpipe connection.

3-1.9 Where no recognized water supply distribution system exists, appropriate access shall be provided for water supplies in accordance with the provisions of NFPA 1231, *Standard on Water Supplies for Suburban and Rural Fire Fighting*.

3-2 Fire Lanes.

3-2.1* Fire lanes shall be provided as required by the fire department having jurisdiction and in keeping with the following requirements.

3-2.2 Fire lanes shall be at least 20 ft (6 m) in width with the road edge closest to the structure at least 10 ft (3 m) from the structure.

3-2.3* "No Parking — Tow-Away Zone" 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.

3-2.4 Fire lanes connecting to public streets, roadways, or private streets shall be provided with curb cuts extending at least 2 ft (0.6 m) beyond each edge of the fire lane.

3-2.5 The designation and maintenance of fire lanes on private property shall be accomplished as specified by the fire department having jurisdiction.

3-3* Parking Lot Lanes. Parking lot lanes shall have a minimum of 25 ft (7.5 m) clear width between rows of parked vehicles for vehicular access and movement.

3-4 Grades.

3-4.1 Grades shall be no more than 10 percent.

Exception: The authority having jurisdiction may allow steeper grades where mitigation measures can be agreed upon jointly by the fire chief and the road engineer.

3-4.2 Any secondary road intersecting with another road shall be sloped one to three percent down and away from the intersection for a distance of 100 ft (30.5 m) from the intersection.

3-4.3 Grades shall be no less than 0.5 percent in order to prevent pooling of water in the traveled way.

3-5 Location of Structures.

3-5.1 Structures exceeding 1000 sq ft (93 sq m) gross floor area shall not be set back more than 50 ft (15 m) from an approved fire lane or street.

Exception No. 1: All perimeter walls of a structure and all exterior doors into the structure constructed as a part of a planned building group are permitted to be within 200 ft (61 m) of an approved fire lane or street when the structure is protected by an automatic sprinkler system 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 Mobile Homes, or NFPA 13R, Standard for the Installation of Sprinkler Systems in Residential Occupancies up to Four Stories in Height, and is less than 30 ft (9 m) in height.

Exception No. 2: When any combination of private fire protection facilities, including but not limited to fire-resistive roofs, fire separation walls, space separation, and automatic fire extinguishing systems, is provided and approved by the fire marshal as an acceptable alternative, 3-5.1 shall not apply.

3-5.2 All structures exceeding three stories in height and 3,000 sq ft (279 sq m) in ground floor area and containing nonrated openings in exterior walls facing other structures shall be separated from other structures by at least 50 ft (15 m) of clear space between structures, and 25 ft (8 m) from a common property line. (See 1-2.4.)

3-5.3* At least two means of access for fire apparatus shall be provided for each structure exceeding 30 ft (9 m) or three stories in height, not less than one of which shall be a fire lane or street.

3-5.4* At least 14 ft (4 m) of nominal clearance shall be provided over the full width of streets, private streets, fire lanes, and other means of vehicular access.

3-5.5* Landscaping or other obstructions shall not be placed around structures in a manner so as to impair or impede accessibility for fire fighting and rescue operations.

3-5.6* The location of structures and access to each structure shall be approved by the fire marshal before permits for construction are issued.

3-6 Fire Protection.

3-6.1 All structures more than three stories in height or over 50 ft (15 m) in height above grade and containing 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 (see 1-2.4). Fire department standpipe connections shall be located within 50 ft (15 m) of a fire hydrant.

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

3-6.2 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 may be 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.)

3-6.2.1 Any residential building containing more than four living units shall have an automatic extinguishing system installed according to 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 Mobile Homes, or NFPA 13R, Standard for the Installation of Sprinkler Systems in Residential Occupancies up to Four Stories in Height, whichever is appropriate.

3-6.2.2 Fire department connections for sprinkler systems shall be located within 50 ft (15 m) of a fire hydrant

3-6.3* A portable fire extinguisher having a minimum rating of 2-A, 10-BC shall be provided in each dwelling unit. (See Appendix B.)

3-6.4 An approved single station smoke detector(s) or an approved automatic detection system shall be installed in each dwelling unit in accordance with NFPA 74, Standard for the Installation, Maintenance, and Use of Household Fire Warning Equipment. The automatic detection system shall include at least one smoke detector in each dwelling unit. (See Appendix B.)

3-6.5 For other than dwelling units, a fire warning or alarm system shall be provided in accordance with the applicable NFPA code or standard for the intended occupancy of the structure. Such systems shall be installed in accordance with the applicable NFPA code or standard for the type of system installed and shall be designed to alert occupants under emergency conditions and to retransmit to ensure notification of the fire department. Alarms or warning systems shall be tested and maintained in accordance with the applicable NFPA code or standard or as may be required by the authority having jurisdiction. (See Appendix B.)

3-7 Water Supply. (See Appendix B.)

3-7.1 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, or NFPA 1231, Standard on Water Supplies for Suburban and Rural Fire Fighting, where no recognized water supply distribution exists.

3-7.2 Fire hydrants shall be provided in a ratio of at least one fire hydrant for every 160,000 sq ft (8370 sq m) of ground area or portion thereof involved in the development subject to the fire flow requirements established by the authority having jurisdiction.

Exception: This requirement shall not apply to land planned or left for other than structural development.

3-7.2.1 The fire flow requirements shall be not less than that established by the fire department having jurisdiction. In cases where a water supply system consisting of mains and hydrants does not exist, the provisions of NFPA 1231, Standard on Water Supplies for Suburban and Rural Fire Fighting, shall apply.

3-7.2.2 Water supplies shall be capable of supplying the required fire flow for at least one hour for fire flows of 1500 gpm (6750 L/min) at 20 psi (1.38 bars) or less or for two hours for fire flow greater than 1500 gpm (6750 L/min) at 20 psi (1.38 bars).

Exception: In those situations where the provisions of NFPA 1231, Standard on Water Supplies for Suburban and Rural Fire Fighting, are utilized, 3-7.2.2 shall not apply.

3-7.2.3* 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. Fire flow performance tests shall be witnessed by the fire department and other authorities having jurisdiction who desire to do so.

3-7.3 Where a municipal-type water supply is provided, distances between installed fire hydrants shall not exceed 300 ft (91 m) unless fire department operations or technology would otherwise dictate increased spacing. For buildings exceeding 20,000 sq ft (1860 sq m) in ground floor area, a fire hydrant shall be installed within 300 ft (91 m) of any portion of the exterior of the building. Actual location of fire hydrants shall be as required by the fire department prior to installation.

3-7.3.1 Where a municipal-type water system is not provided and the provisions of NFPA 1231 are utilized, the maximum distance from any point of a structure to a pumper connection shall be determined by the fire department.

3-7.4 Fire hydrants shall be marked in a uniform manner.

NOTE: NFPA 291, *Recommended Practice for Fire Flow Testing and Marking of Hydrants*, provides information on the uniform marking of hydrants.

3-7.5 Fire hydrants located in parking areas shall be protected by barriers that will prevent physical damage from vehicles.

3-7.6 Fire hydrants shall be located within 3 ft (0.9 m) of the curb line of fire lanes, streets, or private streets when installed along such access ways.

3-7.7* Fire hydrants shall be properly installed.

3-7.8 Threads on fire hydrant outlets shall be American National Fire Hose Connection Screw Threads and shall be equipped with thread adapters when the local fire department thread is different. (See NFPA 1963, *Standard for Screw Threads and Gaskets for Fire Hose Connections*.)

3-7.9 Fire hydrants shall be supplied by not less than a 6-in. (15-cm) diameter main installed on a looped system or 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 (91 m) in length.

3-7.10 Dead-end mains shall not exceed 600 ft (182.5 m) in length for main sizes under 10 in. (25 cm) in diameter.

3-8 Construction of Structures.

3-8.1* Construction of each structure shall be equal to the requirements of the building code of the jurisdiction.

3-8.2 Common walls between tenants or dwelling units shall have a fire resistance rating of not less than 1 hour.

3-8.3 Roof coverings shall be Class C or better when tested in accordance with NFPA 256, *Standard Methods of Fire Tests of Roof Coverings*.

3-9 Fire Protection during Construction. (See Appendix B.)

3-9.1 Protection shall be not less than that required by the fire department having jurisdiction.

3-9.2 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. (See 3-1.3.)

3-9.3 The fire protection water supply system, including fire hydrants, shall be installed and in service prior to placing combustible building materials for structures or combustible pretested fabricated building assemblies on the project site or utilizing them in the construction of building structures. If phased construction is planned, coordinated installation of the fire protection water system is permitted. (See 3-7.2.3.)

3-9.4 Trash and debris shall be removed from the construction site as often as necessary to maintain a firesafe construction site.

3-9.5 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, *Standard for the Storage and Handling of Liquefied Petroleum Gases*; and NFPA 395, *Standard for the Storage of Flammable and Combustible Liquids on Farms and Isolated Construction Projects*.

3-9.6 At least one portable fire extinguisher having a rating of at least 4-A, 30-BC shall be within a travel distance of 75 ft (22.5 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. (See Appendix B.)

3-9.7* A method of security shall be provided on the construction site during the hours when construction workers are not present on the site.

3-10 Plans.

3-10.1 All plans for planned building groups shall be submitted to the authority having jurisdiction for approval before the issuance of the construction permit. If a planned building group is exposed to wildfire, as part of the plan development and submittal a wildfire protection assessment, a fire behavior potential evaluation, and a fuel management planning analysis shall be submitted to the authority having jurisdiction. This approval procedure shall include the fire department having jurisdiction.

3-10.2 In addition to the requirements of 3-10.1, a small-scale drawing of the site's surrounding area showing streets, access points, water supply sources, and other items of fire

suppression interest shall be submitted to the local fire department before the start of any construction. (See 1-2.4.)

3-10.3 Drawings showing building floor plans, fire protection systems, and items of fire suppression interest shall be submitted to the fire department having jurisdiction, as requested, upon completion of the project.

Chapter 4 Referenced Publications

4-1 The following documents or portions thereof are referenced within this standard and shall be considered part of the requirements of this document. The edition indicated for each reference is the current edition as of the date of the NFPA issuance of this document.

4-1.1 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.

NFPA 14-1990, *Standard for the Installation of Standpipe and Hose Systems*

NFPA 24-1987, *Standard for the Installation of Private Fire Service Mains and Their Appurtenances*

NFPA 30-1990, *Flammable and Combustible Liquids Code*

NFPA 58-1989, *Standard for the Storage and Handling of Liquefied Petroleum Gases*

NFPA 74-1989, *Standard for the Installation, Maintenance, and Use of Household Fire Warning Equipment*

NFPA 256-1987, *Standard Methods of Fire Tests of Roof Coverings*

NFPA 395-1988, *Standard for the Storage of Flammable and Combustible Liquids on Farms and Isolated Construction Projects*

NFPA 501A-1987, *Standard for Firesafety Criteria for Manufactured Home Installations, Sites, and Communities*

NFPA 501D-1990, *Standard for Firesafety Criteria for Recreational Vehicle Parks and Campgrounds*

NFPA 1231-1989, *Standard on Water Supplies for Suburban and Rural Fire Fighting*

NFPA 1963-1985, *Standard for Screw Threads and Gaskets for Fire Hose Connections*

Appendix A

This Appendix is not a part of the requirements of this NFPA document, but is included for information purposes only.

A-3-1 This section is intended to apply to roads constructed within the confines of private property whether they be dedicated or not.

A-3-1.3 A fire lane may be subsurface construction of a hard material adequately designed to support the heaviest piece of fire apparatus likely to be driven upon 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-3-1.5 Turns in roads of this width must be designed and constructed as indicated or fire apparatus will have to ride up on the curb. Sharper turns may prohibit or seriously detain apparatus response.

A-3-1.6 Road width should be sufficient for travel, passing other vehicles, and operating from apparatus in the vicinity of the fire scene.

A-3-2.1 Barriers may be provided at the entrance to fire lanes or private streets, provided they are installed according to the requirements of the fire department having jurisdiction. Break-away locks may be used.

A-3-2.3 The local law enforcement officers must be given written legal authority to enforce parking regulations, or property management must be prepared to enforce these regulations with their own personnel, including the towing of vehicles as may be necessary.

A-3-3 Current design criteria for parking lots allow variable lane widths depending on individual parking space width and angle of the space with respect to the sides of the lot. The Institute of Transportation Engineers Transportation and Traffic Engineering Handbook, using this type of criteria, suggests lane widths varying from 11 to 28 ft (3.4 to 8.5 m). These dimensions are based upon access to the parking space only and do not consider space requirements for normal operations of emergency vehicles.

A-3-5.3 For taller buildings it may be necessary that provision be made to position apparatus on two or more sides of the building for effective fire fighting and rescue operations. Ground ladders can be effectively used on the shorter buildings. Taller buildings normally require the use of aerial ladders. Preferably, access should be provided in the front and rear of the structure.

A-3-5.4 Clearances of less than 14 ft (4 m) may prohibit or severely slow the response of certain types or makes of fire apparatus.

A-3-5.5 This would include obstructions obscuring or interfering with fire department connections to sprinkler and/or standpipe systems.

A-3-5.6 Plan review and cooperative solutions to problems in the planning stage tend to eliminate many major difficulties, economic waste, and misunderstandings. For example, an identification system for all buildings and roadways can aid in fire department response.

A-3-6.3 This requirement may be met by providing one multipurpose dry chemical fire extinguisher or one Class A and one Class BC fire extinguisher. The recommendation for providing these extinguishers in the dwelling unit is basically for security.

A-3-7.2.3 It is recommended that the fire department consider the required fire flow as established by the insurance rating authority for the area.

A-3-7.7 American Water Works Association, 6666 W. Quincy Avenue, Denver, CO 80235

A-3-8.1 In areas not governed by a building code, NFPA codes or standards as they apply for the intended occupancy of the structure should be considered the minimum requirements.

A-3-9.7 The method of security is to be as agreed upon by the contractor and local officials and should be commensurate with the item(s) or area needing security. It may involve a fence with padlocked gate, hiring guards, or providing a patrol security system.

Appendix B Referenced Publications

B-1 The following documents or portions thereof are referenced within this standard for informational purposes only and thus should not be considered part of the requirements of this document. The edition indicated for each reference is the current edition as of the date of the NFPA issuance of this document.

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

NFPA 13-1989, *Standard for the Installation of Sprinkler Systems*

NFPA 13D-1989, *Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Mobile Homes*

NFPA 13R-1989, *Standard for the Installation of Sprinkler Systems in Residential Occupancies up to Four Stories in Height*

NFPA 80-1990, *Standard for Fire Doors and Windows*

NFPA 291-1988, *Recommended Practice for Fire Flow Testing and Marking of Hydrants*

Appendix C Bibliographical and Information Sources

C-1 The following documents or portions thereof are referenced within this standard for informational purposes only and thus should not be considered part of the requirements of this document. The edition indicated for each reference is the current edition as of the date of the NFPA issuance of this document.

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

NFPA 1-1987, *Fire Prevention Code*

NFPA 10-1990, *Standard for Portable Fire Extinguishers*

NFPA 13A-1987, *Recommended Practice for the Inspection, Testing and Maintenance of Sprinkler Systems*

NFPA 20-1990, *Standard for the Installation of Centrifugal Fire Pumps*

NFPA 22-1987, *Standard for Water Tanks for Private Fire Protection*

NFPA 31-1987, *Standard for the Installation of Oil Burning Equipment*

NFPA 54-1988, *National Fuel Gas Code*

NFPA 70-1990, *National Electrical Code®*

NFPA 71-1989, *Standard for the Installation, Maintenance, and Use of Signaling Systems for Central Station Service*

NFPA 72-1990, *Standard for the Installation, Maintenance and Use of Protective Signaling Systems*

NFPA 72E-1990, *Standard on Automatic Fire Detectors*

NFPA 78-1989, *Lightning Protection Code*

NFPA 80A-1987, *Recommended Practice for Protection of Buildings from Exterior Fire Exposures*

NFPA 82-1990, *Standard on Incinerators, Waste and Linen Handling Systems and Equipment*

NFPA 90A-1989, *Standard for the Installation of Air Conditioning and Ventilating Systems*

NFPA 90B-1989, *Standard for the Installation of Warm Air Heating and Air Conditioning Systems*

NFPA 101®-1988, *Life Safety Code®*

NFPA 203M-1987, *Manual on Roof Coverings and Roof Deck Constructions*

NFPA 211-1988, *Standard for Chimneys, Fireplaces, Vents, and Solid Fuel Burning Appliances*

NFPA 220-1985, *Standard on Types of Building Construction*

NFPA 224-1985, *Standard for Homes and Camps in Forest Areas*

NFPA 241-1989, *Standard for Safeguarding Construction, Alteration, and Demolition Operations*

NFPA 600-1986, *Recommendations for Organization, Training, and Equipment for Private Fire Brigades*

NFPA 601-1986, *Standard for Guard Service in Fire Loss Prevention*

NFPA 602-1986, *Standard for Guard Operations in Fire Loss Prevention*

NFPA 1221-1988, *Standard for the Installation, Maintenance and Use of Public Fire Service Communication Systems*

Brannigan, Francis L., *Building Construction for the Fire Service*, Montgomery College, Rockville, Maryland, NFPA FSP-33A, 1982, p. 34

Kimball, Warren Y., *Jamestown, Rhode Island, Fire Attack 1*, FSP-1, 1966, p. 280

Kimball, Warren Y., *Jamestown, Rhode Island, Fire Attack 2*, FSP-2, 1968, p. 234

NFPA Inspection Manual, Sixth Edition, National Fire Protection Association, SPP-11-1982

Fire Protection Handbook, Sixteenth Edition, National Fire Protection Association, FPH1581

Small Community Fire Departments: Organization and Operation, National Fire Protection Association, 1982

C-1.2 Other Publications.

Fire Suppression Rating Schedule, Insurance Services Office, Commercial Risk Services, 160 Water Street, New York, NY 10038

Water Distribution Operator Training Handbook, American Water Works Association, 6666 W. Quincy Avenue, Denver, CO 80235, M-8, 1976, p. 165

Water Supply Operation's Training Course Volume III, Introduction to Water Distribution, American Water Works Association, 666 W. Quincy Avenue, Denver, CO 30235, 1986

Managing Fire Services, International City Managers' Association, 1140 Connecticut Avenue, NW, Washington, DC 20036, 1979

C-1.3 Information Sources.

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

American Institute of Architects, 1735 New York Avenue NW, Washington, DC 20006

International Conference of Building Officials, 5360 South Workman Mill Road, Whittier, CA 90601

Building Officials and Code Administrators, 4051 West Florssmor Country Club Hills, IL 60477

American Insurance Association, 85 John Street, New York, NY 10038

Southern Building Code Congress, 900 Mont Clair Road, South Birmingham, AL 35213

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

ISO, Commercial Risk Services, Inc., Two Sylvan Way, Parsippany, NJ 07054

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

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SUBMITTING PROPOSALS ON NFPA TECHNICAL COMMITTEE DOCUMENTS

**Contact NFPA Standards Administration for final date for receipt of proposals
on a specific document.**

INSTRUCTIONS

**Please use the forms which follow for submitting proposed amendments.
Use a separate form for each proposal.**

1. For each document on which you are proposing amendment indicate:
 - (a) The number and title of the document
 - (b) The specific section or paragraph.
2. Check the box indicating whether or not this proposal recommends new text, revised text, or to delete text.
3. In the space identified as "Proposal" include the wording you propose as new or revised text, or indicate if you wish to delete text.
4. In the space titled "Statement of Problem and Substantiation for Proposal" state the problem which will be resolved by your recommendation and give the specific reason for your proposal including copies of tests, research papers, fire experience, etc. If a statement is more than 200 words in length, the technical committee is authorized to abstract it for the Technical Committee Report.
5. Check the box indicating whether or not this proposal is original material, and if it is not, indicate source.
6. If supplementary material (photographs, diagrams, reports, etc.) is included, you may be required to submit sufficient copies for all members and alternates of the technical committee.
7. Type or print legibly in black ink.

NOTE: The NFPA Regulations Governing Committee Projects in Paragraph 10-10 state: Each proposal shall be submitted to the Council Secretary and shall include:

- (a) identification of the submitter and his affiliation (Committee, organization, company) where appropriate, and
- (b) identification of the document, paragraph of the document to which the proposal is directed, and
- (c) a statement of the problem and substantiation for the proposal, and
- (d) proposed text of proposal, including the wording to be added, revised (and how revised), or deleted.