

88A

NFPA 88A

Standard for

Parking

Structures

1995 Edition



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

NOTICE

All questions or other communications relating to this document should be sent only to NFPA headquarters, addressed to the attention of the Committee responsible for the document.

For information on the procedures for requesting Technical Committees to issue Formal Interpretations, proposing Tentative Interim Amendments, proposing amendments for Committee consideration, and appeals on matters relating to the content of the document, write to the Secretary, Standards Council, National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.

A statement, written or oral, that is not processed in accordance with Section 16 of the Regulations Governing Committee Projects shall not be considered the official position of NFPA or any of its Committees and shall not be considered to be, nor be relied upon as, a Formal Interpretation.

Users of this document should consult applicable federal, state and local laws and regulations. NFPA does not, by the publication of this document, intend to urge action that is not in compliance with applicable laws, and this document may not be construed as doing so.

Policy Adopted by NFPA Board of Directors on December 3, 1982

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.

Licensing Provision—This document is copyrighted by the National Fire Protection Association (NFPA).

1. Adoption by Reference—Public authorities and others are urged to reference this document in laws, ordinances, regulations, administrative orders, or similar instruments. Any deletions, additions, and changes desired by the adopting authority must be noted separately. Those using this method are requested to notify the NFPA (Attention: Secretary, Standards Council) in writing of such use. The term “adoption by reference” means the citing of title and publishing information only.

2. Adoption by Transcription—A. Public authorities with lawmaking or rule-making powers only, upon written notice to the NFPA (Attention: Secretary, Standards Council), will be granted a royalty-free license to print and republish this document in whole or in part, with changes and additions, if any, noted separately, in laws, ordinances, regulations, administrative orders, or similar instruments having the force of law, provided that: (1) due notice of NFPA’s copyright is contained in each law and in each copy thereof; and (2) that such printing and republication is limited to numbers sufficient to satisfy the jurisdiction’s lawmaking or rule-making process. B. Once this NFPA Code or Standard has been adopted into law, all printings of this document by public authorities with lawmaking or rule-making powers or any other persons desiring to reproduce this document or its contents as adopted by the jurisdiction in whole or in part, in any form, upon written request to NFPA (Attention: Secretary, Standards Council), will be granted a nonexclusive license to print, republish, and vend this document in whole or in part, with changes and additions, if any, noted separately, provided that due notice of NFPA’s copyright is contained in each copy. Such license shall be granted only upon agreement to pay NFPA a royalty. This royalty is required to provide funds for the research and development necessary to continue the work of NFPA and its volunteers in continually updating and revising NFPA standards. Under certain circumstances, public authorities with lawmaking or rule-making powers may apply for and may receive a special royalty where the public interest will be served thereby.

3. Scope of License Grant—The terms and conditions set forth above do not extend to the index to this document.

(For further explanation, see the Policy Concerning the Adoption, Printing, and Publication of NFPA Documents, which is available upon request from the NFPA.)

Statement on NFPA Procedures

This material has been developed under the published procedures of the National Fire Protection Association, which are designed to assure the appointment of technically competent Committees having balanced representation. While these procedures assure the highest degree of care, neither the National Fire Protection Association, its members, nor those participating in its activities accept any liability resulting from compliance or noncompliance with the provisions given herein, for any restrictions imposed on materials or processes, or for the completeness of the text.

NFPA has no power or authority to police or enforce compliance with the contents of this document, and any certification of products stating compliance with requirements of this document is made at the peril of the certifier.

CHARLES S. MORGAN LIBRARY
NATIONAL FIRE PROTECTION ASSOCIATION
1 BATTERY MARCH PARK
QUINCY, MA 02269-9101

Copyright © 1995 NFPA, All Rights Reserved

NFPA 88A

Standard for

Parking Structures

1995 Edition

This edition of NFPA 88A, *Standard for Parking Structures*, was prepared by the Technical Committee on Garages and Parking Structures and acted on by the National Fire Protection Association, Inc., at its Annual Meeting held May 22-25, 1995, in Denver, CO. It was issued by the Standards Council on July 21, 1995, with an effective date of August 11, 1995, and supersedes all previous editions.

This edition of NFPA 88A was approved as an American National Standard on August 11, 1995.

Changes other than editorial are indicated by a vertical rule in the margin of the pages on which they appear. These lines are included as an aid to the user in identifying changes from the previous edition.

Origin and Development of NFPA 88A

Work on fire protection safeguards for garages was initiated by the NFPA in 1927 with the appointment of a committee. After extensive deliberations and the publication of successive drafts, the standard was adopted in 1932. Subsequently, the committee was discharged as it appeared that no further activity was needed in this field. In 1952 the present committee was created. This committee prepared a number of redrafts of the 1932 text, and in 1957 a revised NFPA 88, *Standard for Garages*, was adopted. Revisions were made in 1962, 1968, 1979, and 1985.

Prior to 1973, the subject of this standard was included in NFPA 88, *Standard for Garages*. In order to treat separately the occupancies of repair garages and parking structures, this standard and NFPA 88B, *Standard for Repair Garages*, were published separately in 1973.

In 1991 partial revisions were made. The 1995 edition contains editorial changes.

Technical Committee on Garages and Parking Structures

Michael Crowley, *Chair*
Rolf Jensen & Assn. Inc., TX

Michael D. Cato, Delray Beach Fire Dept., FL
Rep. Fire Marshals Assn. of North America
Richard G. Gewain, Hughes Assoc. Inc., MD
James M. Hunnicutt, Hunnicutt & Assoc., MD
Rep. Institutional & Municipal Parking Congress
Marshall A. Klein, Marshall A. Klein & Assn. Inc., MD
Rep. T/C Automotive/Marine Service Sta.
Howard R. May, Desman Assoc., IL
Rep. Nat'l Parking Assn.
Daniel M. McGee, American Iron and Steel Inst., NJ

Joseph J. Messersmith, Jr., Portland Cement Assn., VA
Thomas E. Murray, American Ins. Services Group Inc., NY
William E. Phillips, AFTECH Ltd Partnership, DC
W. Ted Ritter, Ritter Unlimited Inc., IL
Rep. Smoke Control Assn.
Robert L. Ruyle, Ruyle & Assoc., NE
Domenick A. Serrano, S & S Fire Suppression Systems Inc., NY
Rep. Nat'l Fire Sprinkler Assn.

Alternates

James Golinveaux, Central Sprinkler Corp., PA
(Alt. to D. A. Serrano)
Stephen V. Skalko, Portland Cement Assn., GA
(Alt. to J. J. Messersmith, Jr.)

Dean J. Tills, American Iron and Steel Inst., DC
(Alt. to D. M. McGee)

Steven F. Sawyer, NFPA Staff Liaison

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.

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 construction, control of fire hazards, ventilation, fire protection and maintenance of garages and parking structures.

Contents

Chapter 1 General	88A- 4	4-4 Storage and Handling of Flammable Liquids and Liquefied Petroleum Gases	88A- 6
1-1 Scope	88A- 4	4-5 Housekeeping	88A- 6
1-2 Purpose	88A- 4		
Chapter 2 Definitions	88A- 4	Chapter 5 Protection	88A- 6
2-1 Definitions.	88A- 4	5-1 Automatic Sprinkler Systems	88A- 6
Chapter 3 Construction	88A- 4	5-2 Automatic Sprinkler Systems or Fire Detection and Smoke Removal	88A- 6
3-1 General Requirements	88A- 4	5-3 Maintenance and Supervision of Fire Detection and Fire Extinguishing Systems	88A- 6
3-2 Internal Subdivision	88A- 4	5-4 Portable Fire Extinguishers	88A- 6
3-3 Floors	88A- 5	5-5 Standpipes	88A- 7
3-4 Means of Egress	88A- 5	5-6 Employee Instruction	88A- 7
3-5 Openings in Fire Walls and Fire Partitions.	88A- 5	Chapter 6 Referenced Publications	88A- 7
3-6 Vertical Openings	88A- 5	Appendix A Explanatory Material	88A- 7
3-7 Open Parking Structures	88A- 5	Appendix B Referenced Publications	88A- 8
Chapter 4 Hazards	88A- 5	Index	88A- 8
4-1 Lighting and Power	88A- 5		
4-2 Heating — General	88A- 5		
4-3 Ventilation	88A- 6		

NFPA 88A
Standard for
Parking Structures
1995 Edition

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 6 and Appendix B.

Chapter 1 General

1-1 Scope. This standard shall cover the construction and protection of, as well as the control of hazards in, open, enclosed, basement, and underground parking structures. This standard shall not apply to one- and two-family dwellings.

1-2 Purpose. The purpose of this standard is to provide minimum fire protection standards for parking structures.

Chapter 2 Definitions

2-1 Definitions.

Approved.* Acceptable to the authority having jurisdiction.

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

Basement and Underground Parking Structures. Buildings, structures, or portions thereof, located below grade, used solely for parking purposes. Motor vehicles can be parked by an attendant or by the driver. A basement parking structure has other occupancies above; an underground parking structure has no occupancy other than parking above it.

Enclosed Parking Structures. Buildings, structures, or portions thereof used for the parking of motor vehicles and having exterior enclosure walls that have less than 20 percent of the total wall area open to atmosphere at each level, using at least two sides of the structure. Parking facilities can involve the use of conventional-type elevators, attendant operated; mechanical control push-button-type elevators; or ramps. Motor vehicles can be parked by attendants, the driver, or be mechanically parked by automatic facilities where the attendant or operator might or might not be required to leave the grade or ground floor. Dispensing of motor fuels and motor vehicle servicing are occasionally provided at these parking structures.

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 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.

Open Parking Structures. Buildings, structures, or portions thereof, used for parking motor vehicles and having not less than 20 percent of the total wall area open to atmosphere at each level, utilizing at least two sides of the structure. These structures can be of the ramp type in which the motor vehicles are parked by attendants or the driver; or they can have the mechanical parking facilities as described in the definition for enclosed parking structures. Dispensing of motor fuels and motor vehicle servicing are occasionally provided.

Storage Garages. Buildings, structures, or portions thereof, used solely for dead storage of motor vehicles.

Chapter 3 Construction

3-1 General Requirements.

3-1.1 Parking structures shall be built using one of the types of construction defined in NFPA 220, *Standard on Types of Building Construction*, except as otherwise amended in this standard.

3-1.2 Enclosed, open, and basement and underground parking structures shall not be located within, or attached to, a building used for any other purpose unless separated by walls, partitions, floors, or floor-ceiling assemblies having a fire resistance rating of not less than two (2) hr. (See Section 3-5.)

Exception: No fire rated separation is required when an open parking structure connects to an adjacent structure via an open-air balcony or bridge.

3-1.3* Those portions of an open parking structure located within or immediately below a building used for another purpose shall have the principal supporting members and bearing walls in all levels of the parking structure protected to provide a fire-resistive rating equivalent to that required for the other occupancy.

3-1.4* Parking structures shall be limited in height and area, depending upon the type of construction and private fire protection provided. (See Chapter 5, Sections 5-1 and 5-2, for provisions where automatic sprinkler protection is required.)

3-2 Internal Subdivision.

3-2.1 Offices or other similar spaces of greater than 1,500 ft² (139.4 m²) in area shall be separated from parking areas by walls, partitions, floors, or floor-ceiling assemblies having a fire resistance rating of not less than two (2) hr.

3-2.2 Offices, 1,500 ft² (139.4 m²) in area or less, except for cashiers booths, shall be separated from parking areas by walls, partitions, floor, or floor-ceiling assemblies having a fire resistance rating of not less than one (1) hr.

3-2.3 Employees' locker rooms, sanitary facilities, and storage rooms shall be separated from parking areas by walls, partitions, floor or floor-ceiling assemblies having a fire resistance rating of not less than one (1) hr.

3-3 Floors.

3-3.1 When of combustible construction, floors shall be surfaced with approved liquidtight noncombustible material; where concrete is used for floor surface it shall be finished to facilitate cleaning. Floors shall be graded and equipped with floor drains so as to minimize the possibility of water or fuel standing on the floor. Nothing in the foregoing shall be construed to eliminate the use of asphalt at grade.

3-3.2 In areas of parking structures where motor fuels are dispensed, each floor drain shall be properly trapped and shall discharge through an oil separator to the sewer or to an outside vented sump.

3-4 Means of Egress. Means of egress in parking structures with respect to their required number, location, and construction shall conform with the provisions set forth in NFPA 101®, *Life Safety Code*®.

3-5 Openings in Fire Walls and Fire Partitions.

3-5.1 Doorways and other openings in fire walls and fire partitions shall be protected with approved fire doors installed in accordance with NFPA 80, *Standard for Fire Doors and Fire Windows*.

3-5.2 Each opening in a fire wall shall be protected with an automatic-closing or self-closing fire door or doors approved for Class A locations. No opening in a fire wall shall exceed 120 ft² (11.1 m²) in area, with no dimension greater than 12 ft (3.7 m). The aggregate width of all openings at any level shall not exceed 25 percent of the length of the wall.

3-5.3 Where ducts must pass through fire walls or fire partitions, the openings shall be protected with approved fire doors or fire dampers installed in accordance with the requirements of NFPA 90A, *Standard for the Installation of Air Conditioning and Ventilating Systems*, or NFPA 91, *Standard for Exhaust Systems for Air Conveying of Materials*.

3-6 Vertical Openings. Vertical openings through floors in buildings four stories or more in height shall be enclosed with walls or partitions having a fire resistance rating of not less than two (2) hr. For buildings less than four stories, such walls or partitions shall have a fire resistance rating of not less than one (1) hr.

Exception No. 1: Ramps in open parking structures shall not be required to be enclosed.

Exception No. 2: Ramps in enclosed parking structures, storage garages, and basement and underground parking structures shall not be required to be enclosed when the following safeguards are provided:

(a) *An approved, automatic fire extinguishing system fully protecting the parking structure, or*

(b) *An approved, automatic, supervised fire detection system installed throughout the parking structure using detectors sensing products of combustion other than heat, and*

(c) *A mechanical ventilation system in accordance with 4-3.2.*

3-7 Open Parking Structures.

3-7.1 Open parking structures shall be of Type I or Type II construction as defined in NFPA 220, *Standard on Types of Building Construction*.

3-7.2 Heights and floor areas of open parking structures of Type I, Type II (222), or Type II (111) construction shall be permitted to be unlimited.

Exception: Open parking structures of Type II (000) construction used only for the parking of passenger automobiles shall be permitted to be of unlimited area where (a) not more than 75 ft (22.9 m) in height, and (b) the horizontal distance on any parking level to an exterior wall opening on a street, alley, courtyard, or other similar permanent open space shall not exceed 200 ft (61 m).

3-7.3 Interior wall lines and column lines shall be at least 20 percent open with openings distributed to provide ventilation. The required open side areas of each story or parking level shall not be enclosed or restricted by any material that would limit free movement of air.

3-7.4 Openings in exterior walls shall not be required to be distributed over 40 percent of the building perimeter where the required openings are uniformly distributed over two opposing sides of the building.

Chapter 4 Hazards

4-1 Lighting and Power.

4-1.1 Electric wiring for light, power, heat, and signal or control circuits, and electrically operated tools, portable appliances, and devices shall be in accordance with the provisions of NFPA 70, *National Electrical Code*®, Article 511 of NFPA 70, *National Electrical Code*, shall apply to any wiring and equipment within hazardous areas.

4-1.2 NFPA 30A, *Automotive and Marine Service Station Code*, shall be used to delineate and classify areas for the purpose of installation of electrical equipment where flammable liquids are stored or handled.

4-1.3 In open parking structures, electrical equipment, wiring, and appliances need not comply with Article 511 of NFPA 70, *National Electrical Code*, except where flammable liquids are stored, handled, or dispensed.

4-2 Heating — General.

4-2.1 No heater employing an open flame or glowing element shall be installed in enclosed parking areas, or sections communicating therewith, except as hereinafter specifically provided.

4-2.2 All heating equipment in enclosed parking areas shall be of an approved type with all flames associated therewith being located 18 in. (457.2 mm) above the floor or protected by a partition not less than 18 in. (457.2 mm) high. Improvised furnaces, salamanders, or space heaters shall not be permitted.

4-2.3 Heating equipment shall be installed to conform with the following standards of the National Fire Protection Association: NFPA 90A, *Standard for the Installation of Air Conditioning and Ventilating Systems*; NFPA 31, *Standard for the Installation of Oil-Burning Equipment*; NFPA 54,

National Fuel Gas Code; NFPA 211, Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances; and NFPA 82, Standard on Incinerators and Waste and Linen Handling Systems and Equipment, as applicable, except as hereinafter specifically provided.

4-3 Ventilation.

4-3.1 Wherever mechanical ventilating systems are employed in parking structures, they shall be installed in accordance with NFPA 90A, *Standard for the Installation of Air Conditioning and Ventilating Systems*. When blower and exhaust systems are installed for vapor removal, the systems shall be installed in accordance with NFPA 91, *Standard for Exhaust Systems for Air Conveying of Materials*.

4-3.2* All enclosed, basement, and underground parking structures shall be ventilated by a mechanical system capable of providing a minimum of six air changes per hour during hours of normal operation.

4-4 Storage and Handling of Flammable Liquids and Liquefied Petroleum Gases.

4-4.1 The storage and handling of flammable liquids shall be in accordance with NFPA 30, *Flammable and Combustible Liquids Code*, except as amended by this standard. The storage and handling of liquefied petroleum gas shall be in compliance with NFPA 58, *Standard for the Storage and Handling of Liquefied Petroleum Gases*.

4-4.2 Dispensing Equipment. The design and installation of equipment used for the dispensing of flammable liquids shall be in accordance with the requirements for service stations as set forth in NFPA 30A, *Automotive and Marine Service Station Code*, except as amended by this standard.

4-5 Housekeeping.

4-5.1 An authorized employee, an officer of the firm, or the owner shall make daily inspections of the parking facility and shall be responsible for the prompt removal or repair of any hazardous condition, including proper maintenance of equipment and safety devices and the immediate removal of accumulations of combustible materials.

4-5.2 Clear aisle space shall be maintained to permit ready access to, and the use of, fire-fighting equipment.

4-5.3 Metal lockers shall be provided for employees' clothes.

4-5.4 Approved metal receptacles with self-closing covers shall be provided for the storage or disposal of oil-soaked waste or cloths.

4-5.5 Combustible rubbish shall be placed in covered metal receptacles until removed to a safe place for disposal. Contents of such container shall be removed daily.

4-5.6 Floors shall be kept clean and free of oil and grease. Only approved water solutions or detergents, floor sweeping compounds, and grease absorbents shall be used for cleaning floors.

Chapter 5 Protection

5-1 Automatic Sprinkler Systems. Approved automatic sprinkler equipment installed in accordance with NFPA 13,

Standard for the Installation of Sprinkler Systems, shall be provided in parking structures under the following conditions:

(a) Basement and underground parking structures, the ceilings of which are less than 2 ft (1.7 m) above grade.

(b) Storage garages or enclosed parking structures of Type III or Type IV construction over 50 ft (15.2 m) in height.

5-2 Automatic Sprinkler Systems or Fire Detection and Smoke Removal. Storage garages and enclosed parking structures located within or immediately below a building used for another purpose shall be provided with the following safeguards:

(a) An approved, automatic sprinkler system fully protecting the parking area, or

(b) An approved, automatic, supervised fire detection system installed throughout the parking areas using detectors sensing products of combustion other than heat, and

(c) A mechanical ventilation system in accordance with 4-3.2.

5-3 Maintenance and Supervision of Fire Detection and Fire Extinguishing Systems.

5-3.1 Where an automatic fire alarm or automatic fire extinguishing system is installed as a requirement of this standard, the system shall be adequately supervised to ensure reliable operation as follows:

(a) The extinguishing or alarm system shall be electrically connected, either directly or through a central station facility or by another approved method, to the fire department legally committed to serve the area where the building is located. System actuation shall initiate the alarm sequence.

(b) Where a system might become inoperable due to closing of valves, interruption of power, or other reasons, adequate supervision shall be provided to sound at least a local trouble alarm when the system is disabled.

(c) Where building fire alarm facilities are provided, actuation of the fire detection or fire extinguishing system shall cause the building alarm to sound.

(d) Signaling system details, with respect to design, shall conform to the requirements set forth in the various NFPA standards as follows: NFPA 72, *National Fire Alarm Code*; and NFPA 1221, *Standard for the Installation, Maintenance, and Use of Public Fire Service Communication Systems*.

5-3.2 Every automatic fire alarm or fire extinguishing system required by this standard shall be continuously maintained in reliable operating condition at all times.

5-3.2.1 Automatic fire sprinkler systems and standpipe systems shall be inspected, tested, and maintained in accordance with NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*.

5-3.2.2 Automatic fire alarm systems shall be designed, installed, inspected, tested, and maintained in accordance with NFPA 72, *National Fire Alarm Code*.

5-4 Portable Fire Extinguishers. Approved extinguishers, installed and maintained in accordance with NFPA 10, *Standard for Portable Fire Extinguishers*, shall be provided in all parking structures.

Exception: Where approved by the authority having jurisdiction, alternative first aid fire equipment shall be permitted to be used.

5-5 Standpipes. Structures exceeding a height of 50 ft (15.2 m), or having parking levels below grade, shall be provided with one or more standpipes conforming to the provisions of NFPA 14, *Standard for the Installation of Standpipe and Hose Systems*.

Exception: Class I standpipe systems for open parking structures shall be permitted to be of the manual-dry type.

5-6* Employee Instruction. Employees of all parking structures shall be instructed with respect to the importance of transmitting fire alarms promptly and shall be trained in the use of available private fire-fighting facilities.

Chapter 6 Referenced Publications

6-1 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.

6-1.1 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.

NFPA 10, *Standard for Portable Fire Extinguishers*, 1994 edition.

NFPA 13, *Standard for the Installation of Sprinkler Systems*, 1994 edition.

NFPA 14, *Standard for the Installation of Standpipe and Hose Systems*, 1993 edition.

NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*, 1995 edition.

NFPA 30, *Flammable and Combustible Liquids Code*, 1993 edition.

NFPA 30A, *Automotive and Marine Service Station Code*, 1993 edition.

NFPA 31, *Standard for the Installation of Oil-Burning Equipment*, 1992 edition.

NFPA 54, *National Fuel Gas Code*, 1992 edition.

NFPA 58, *Standard for the Storage and Handling of Liquefied Petroleum Gases*, 1995 edition.

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

NFPA 72, *National Fire Alarm Code*, 1993 edition.

NFPA 80, *Standard for Fire Doors and Fire Windows*, 1995 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*, 1993 edition.

NFPA 91, *Standard for Exhaust Systems for Air Conveying of Materials*, 1995 edition.

NFPA 101, *Life Safety Code*, 1994 edition.

NFPA 211, *Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances*, 1992 edition.

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

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

Appendix A Explanatory Material

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

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

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.

Listed. 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.

A-3-1.3 See NFPA 220, *Standard on Types of Building Construction*.

A-3-1.4 Building codes generally contain provisions limiting the heights and areas of parking structures of various types of construction. Excessive heights and large undivided floor areas are undesirable inasmuch as moderate areas are essential to the effective use of hose streams where reliance is placed on manual fire-fighting tactics.

A-4-3.2 This ventilation requirement is also intended to address vehicles that use compressed natural gas (CNG). A CNG leak should pose no greater risk than leaks of conventional motor fuels.

A-5-6 Parking structures that are not within the protection area of an organized public fire department should have a fire brigade that is organized, equipped, and drilled in accordance with NFPA 600, *Standard on Industrial Fire Brigades*.

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. These references are listed separately to facilitate updating to the latest edition by the user.

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

NFPA 600, *Standard on Industrial Fire Brigades*, 1992 edition.

Index

© 1995 National Fire Protection Association, All Rights Reserved.

The copyright in this index is separate and distinct from the copyright in the document which 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 the National Fire Protection Association, Inc.

- A-**
 - Alarm systems *see* Fire detection systems
 - Approved (definition) 2-1, A-2-1
 - Authority having jurisdiction (definition) 2-1, A-2-1
 - Automatic sprinkler systems *see* Sprinkler systems, automatic
 - Automatic-closing doors 3-5.2
- B-**
 - Basement and underground parking structures
 - Construction 3-1.2
 - Definition 2-1
 - Sprinkler systems 5-1(a)
 - Ventilation 4-3.2, A-4-3.2
- C-**
 - Compressed natural gas (CNG) A-4-3.2
 - Construction Chap. 3, A-3-1.3 to A-3-1.4
- D-**
 - Definitions Chap. 2, A-2-1
 - Dispensing equipment, flammable liquid 4-4.2
 - Drains 3-3.2
 - Ducts 3-5.3
- E-**
 - Electrical equipment and wiring 4-1
 - Employees, fire instruction for 5-6, A-5-6
 - Enclosed parking structures
 - Construction 3-1.2
 - Definition 2-1
 - Fire protection systems 5-1(b), 5-2
 - Ventilation 4-3.2, 5-2(c), A-4-3.2
 - Exterior walls, openings in 3-7.4
- F-**
 - Fire brigades A-5-6
 - Fire detection systems 3-6(b), 5-2, 5-3
 - Fire doors 3-5.1 to 3-5.2
 - Fire extinguishers, portable 5-4
 - Fire protection Chap. 5, A-5-6
 - Fire walls and partitions, openings in 3-5
 - Flammable liquids, storage and handling of 4-4
 - Floors 3-3, 4-5.6
- H-**
 - Hazards Chap. 4, A-4-3.2
 - Heating 4-2
 - Height and area of structures 3-1.4, 3-7.2, A-3-1.4
 - Housekeeping 4-5
- I-**
 - Internal subdivisions 3-2
- L-**
 - Labeled (definition) 2-1
 - Lighting 4-1
 - Listed (definition) 2-1, A-2-1
 - Lockers, employee 3-2.3, 4-5.3
 - LP-Gas, storage and handling of 4-4
- M-**
 - Maintenance, fire detection and extinguishing systems 5-3
 - Means of egress 3-4
- O-**
 - Offices 3-2.1 to 3-2.1
 - Oil-soaked waste and cloths 4-5.4
 - Open parking structures
 - Construction 3-1.2 to 3-1.3, 3-7, A-3-1.3
 - Definition 2-1
 - Electrical equipment, wiring, and appliances 4-1.3
 - Openings
 - Fire walls and partitions 3-5
 - Open parking structures, walls of 3-7.3 to 3-7.4
 - Vertical 3-6
- P-**
 - Parking structures *see* specific type such as
Open parking structures
 - Power 4-1
 - Purpose of standard 1-2
- R-**
 - Ramps 3-6
 - Referenced publications Chap. 6, App. B
 - Rubbish 4-5.5
- S-**
 - Sanitary facilities 3-2.3
 - Scope of standard 1-1
 - Self-closing doors 3-5.2
 - Smoke removal systems 5-2
 - Sprinkler systems, automatic 3-6(a), 5-1 to 5-3
 - Standpipes 5-3.2.1, 5-5
 - Storage garages
 - Definition 2-1
 - Fire protection 5-2
 - Storage rooms 3-2.3
 - Subdivisions, internal 3-2
 - Supervision, fire detection and extinguishing systems 5-3
- U-**
 - Underground parking structures *see* Basement and
underground parking structures
- V-**
 - Ventilation systems 3-6(c), 4-3, 5-2(c), A-4-3.2
 - Vertical openings 3-6

The NFPA Codes and Standards Development Process

Since 1896, one of the primary purposes of the NFPA has been to develop and update the standards covering all areas of fire safety.

Calls for Proposals

The code adoption process takes place twice each year and begins with a call for proposals from the public to amend existing codes and standards or to develop the content of new fire safety documents.

Report on Proposals

Upon receipt of public proposals, the technical committee members meet to review, consider, and act on the proposals. The public proposals – together with the committee action on each proposal and committee-generated proposals – are published in the NFPA's Report on Proposals (ROP). The ROP is then subject to public review and comment.

Report on Comments

These public comments are considered and acted upon by the appropriate technical committees. All public comments – together with the committee action on each comment – are published as the Committee's supplementary report in the NFPA's Report on Comments (ROC).

The committee's report and supplementary report are then presented for adoption and open debate at either of NFPA's semi-annual meetings held throughout the United States and Canada.

Association Action

The Association meeting may, subject to review and issuance by the NFPA Standards Council, (a) adopt a report as published, (b) adopt a report as amended, contingent upon subsequent approval by the committee, (c) return a report to committee for further study, and (d) return a portion of a report to committee.

Standards Council Action

The Standards Council will make a judgement on whether or not to issue an NFPA document based upon the entire record before the Council, including the vote taken at the Association meeting on the technical committee's report.

Voting Procedures

Voting at an NFPA Annual or Fall Meeting is restricted to members of record for 180 days prior to the opening of the first general session of the meeting, except that individuals who join the Association at an Annual or Fall Meeting are entitled to vote at the next Fall or Annual Meeting.

"Members" are defined by Article 3.2 of the Bylaws as individuals, firms, corporations, trade or professional associations, institutes, fire departments, fire brigades, and other public or private agencies desiring to advance the purposes of the Association. Each member shall have one vote in the affairs of the Association. Under Article 4.5 of the Bylaws, the vote of such a member shall be cast by that member individually or by an employee designated in writing by the member of record who has registered for the meeting. Such a designated person shall not be eligible to represent more than one voting privilege on each issue, nor cast more than one vote on each issue.

Any member who wishes to designate an employee to cast that member's vote at an Association meeting in place of that member must provide that employee with written authorization to represent the member at the meeting. The authorization must be on company letterhead signed by the member of record, with the membership number indicated, and the authorization must be recorded with the President of NFPA or his designee before the start of the opening general session of the Meeting. That employee, irrespective of his or her own personal membership status, shall be privileged to cast only one vote on each issue before the Association.

Sequence of Events Leading to Publication of an NFPA Committee Document

Call for proposals to amend existing document or for recommendations on new document.



Committee meets to act on proposals, to develop its own proposals, and to prepare its report.



Committee votes on proposals by letter ballot. If two-thirds approve, report goes forward.
Lacking two-thirds approval, report returns to committee.



Report is published for public review and comment. (Report on Proposals - ROP)



Committee meets to act on each public comment received.



Committee votes on comments by letter ballot. If two-thirds approve, supplementary report goes forward. Lacking two-thirds approval, supplementary report returns to committee.



Supplementary report is published for public review. (Report on Comments - ROC).



NFPA membership meets (Annual or Fall Meeting) and acts on committee report (ROP and ROC).



Committee votes on any amendments to report approved at NFPA Annual or Fall Meeting.



Complaints to Standards Council on Association action must be filed
within 20 days of the NFPA Annual or Fall Meeting.



Standards Council decides, based on all evidence, whether or not to issue standard
or to take other action, including hearing any complaints.



Appeals to Board of Directors on Standards Council action must be filed
within 20 days of Council action.

FORM FOR PROPOSALS ON NFPA TECHNICAL COMMITTEE DOCUMENTS

Mail to: Secretary, Standards Council

National Fire Protection Association, 1 Batterymarch Park, Quincy, Massachusetts 02269-9101

Fax No. 617-770-3500

Note: All proposals must be received by 5:00 p.m. EST/EDST on the published proposal-closing date.

If you need further information on the standards-making process, please contact the Standards Administration Department at 617-984-7249.

Date 9/18/93 Name John B. Smith Tel. No. 617-555-1212

Company _____

Street Address 9 Seattle St., Seattle, WA 02255

Please Indicate Organization Represented (if any) Fire Marshals Assn. of North America

1. a) NFPA Document Title National Fire Alarm Code NFPA No. & Year NFPA 72, 1993 ed.

b) Section/Paragraph 1-5.8.1 (Exception No.1)

2. Proposal recommends: (Check one) ☐ new text
☐ revised text
☒ deleted text

FOR OFFICE USE ONLY

Log # _____

Date Rec'd _____

3. Proposal (include proposed new or revised wording, or identification of wording to be deleted):

Delete exception.

4. **Statement of Problem and Substantiation for Proposal:** (Note: State the problem that will be resolved by your recommendation; give the specific reason for your proposal including copies of tests, research papers, fire experience, etc. If more than 200 words, it may be abstracted for publication.)

A properly installed and maintained system should be free of ground faults. The occurrence of one or more ground faults should be required to cause a "trouble" signal because it indicates a condition that could contribute to future malfunction of the system. Ground fault protection has been widely available on these systems for years and its cost is negligible. Requiring it on all systems will promote better installations, maintenance and reliability.

5. ☒ **This Proposal is original material.** (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought, or research and, to the best of his/her knowledge, is not copied from another source.)

☐ **This Proposal is not original material; its source (if known) is as follows:** _____

Note 1: Type or print legibly in black ink.

Note 2: 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.

I hereby grant NFPA the non-exclusive, royalty-free rights, including non-exclusive, royalty-free rights in copyright, in this proposal and I understand that I acquire no rights in any publication of NFPA in which this proposal in this or another similar or analogous form is used.

John B. Smith
Signature (Required)

PLEASE USE SEPARATE FORM FOR EACH PROPOSAL

FORM FOR PROPOSALS ON NFPA TECHNICAL COMMITTEE DOCUMENTS

Mail to: Secretary, Standards Council

National Fire Protection Association, 1 Batterymarch Park, Quincy, Massachusetts 02269-9101

Fax No. 617-770-3500

Note: All proposals must be received by 5:00 p.m. EST/EDST on the published proposal-closing date.

If you need further information on the standards-making process, please contact the
Standards Administration Department at 617-984-7249.

Date _____ Name _____ Tel. No. _____

Company _____

Street Address _____

Please Indicate Organization Represented (if any) _____

1. a) NFPA Document Title _____ NFPA No. & Year _____

b) Section/Paragraph _____

2. Proposal Recommends: (Check one) ☐ new text
☐ revised text
☐ deleted text

FOR OFFICE USE ONLY

Log # _____

Date Rec'd _____

3. Proposal (include proposed new or revised wording, or identification of wording to be deleted):

4. **Statement of Problem and Substantiation for Proposal:** (Note: State the problem that will be resolved by your recommendation; give the specific reason for your proposal including copies of tests, research papers, fire experience, etc. If more than 200 words, it may be abstracted for publication.)

5. ☐ **This Proposal is original material.** (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought, or research and, to the best of his/her knowledge, is not copied from another source.)

☐ **This Proposal is not original material; its source (if known) is as follows:** _____

Note 1: Type or print legibly in black ink.

Note 2: 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.

I hereby grant NFPA the non-exclusive, royalty-free rights, including non-exclusive, royalty-free rights in copyright, in this proposal and I understand that I acquire no rights in any publication of NFPA in which this proposal in this or another similar or analogous form is used.

Signature (Required)

PLEASE USE SEPARATE FORM FOR EACH PROPOSAL

Cut here

*Join over 63,000
professionals
like yourself.
Belong to NFPA!*

You can have impact on issues that affect the fire safety industry—How?

When you belong to NFPA you'll receive special membership benefits that help you make informed decisions and make your voice a stronger one in the fire safety community. Your benefits include:

1. **Voting privileges** on proposed changes to existing codes and standards, and on new codes and standards.
2. The *NFPA Journal*, *Fire News* newsletter, and *NFPA Journal Reference Directory & Buyers' Guide*—your source for fire statistics, reports, investigations, manufacturers, and codes and standards references.
3. **10% discount** on all products and services.
4. **Special invitations** to Annual, Fall, and Regional Meetings—where you can compare notes with your colleagues and take a position on issues that affect you. All these benefits—plus the pride and confidence that comes with membership in an internationally acclaimed organization can be yours for annual dues of \$95.00. Join today!

☐ **YES! Send me an application to join my colleagues at NFPA today!**

Name _____ Date _____
Address _____ Signature _____
City, State, Zip _____
Code PA1

*You can't beat
this value on
NFPA codes and
standards...*

Stay up-to-date on fire codes with this super, money-saving service!

In the dynamic world of fire protection, you need to keep up with current fire code requirements, recent changes, and new developments. The *National Fire Codes® Subscription Service* makes that an easier job! This complete service delivers every NFPA code and standard directly to you—over 280 essential codes in all! As a subscriber, you automatically receive new and revised documents from NFPA's Annual and Fall Meetings—as soon as they are published. Plus, additional mailings keep you informed of changes as they happen, so you are always working with the latest requirements.

☐ **YES! Start my subscription today! (Item No. 2H-NFCSS) \$650.00 (NFPA Members \$585.00*)**

Total amount enclosed \$ _____ NFPA Member No. _____
Name _____ ☐ I enclose a check (payable to NFPA).
Address _____ ☐ Please bill me.
City, State, Zip _____

For easy ordering, call toll-free
1-800-344-3555!
Monday–Friday, 8:30 AM–8:00 PM, ET

* Prices subject to change.

*Thank you
for your
purchases!*

NFPA listens to our customers. Please let us know what you think.

What types of products would you like to see more of?

- | | |
|--|--|
| ☐ seminars | ☐ training packages |
| ☐ code handbooks | ☐ informational brochures |
| ☐ general reference books | ☐ electronic media |
| ☐ videos | ☐ other _____ |

In what subject area(s) would you like to see more products?

- | | |
|---|--|
| ☐ electrical | ☐ life safety |
| ☐ Fire Prevention Week | ☐ fire service |
| ☐ public education | ☐ hazardous materials |
| ☐ other _____ | |

How can NFPA better serve your needs?
