NFPA 501A

Standard for Fire Safety Criteria for Manufactured Home Installations, Sites, and Communities

2000 Edition

NFPA, 1 Batterymarch Park, PO Box 9101, Quincy, MA 02269-9101
An International Codes and Standards Organization

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NFPA 501A

Standard for

Fire Safety Criteria for Manufactured Home Installations, Sites, and Communities

2000 Edition

This edition of NFPA 501A, *Standard for Fire Safety Criteria for Manufactured Home Installations, Sites, and Communities,* was prepared by the Technical Committee on Fire Safety for Manufactured Housing, released by the Technical Correlating Committee on Manufactured Housing, and acted on by the National Fire Protection Association, Inc., at its World Fire Safety Congress and Exposition™ held May 14–17, 2000, in Denver, CO. It was issued by the Standards Council on July 20, 2000, with an effective date of August 18, 2000, and supersedes all previous editions.

This edition of NFPA 501A was approved as an American National Standard on August 18, 2000.

Origin and Development of NFPA 501A

NFPA activity associated with manufactured homes commenced in 1937 when NFPA organized its first Committee on Trailers and Trailer Courts. The first standard covering trailer coach camps appeared in 1939, with revisions in 1940, 1952, 1960, and 1964. A completely new edition was adopted in 1971, and this text was revised in 1972, 1973, 1974, 1975, 1977, and 1982.

The American National Standards Institute (ANSI) approved the 1972 NFPA edition on May 8, 1973; the 1973 NFPA edition on December 28, 1973; the 1974 NFPA edition on January 30, 1975; the 1975 NFPA edition on February 27, 1976; and the 1977 NFPA edition on October 18, 1977.

The 1982 edition of *Standard for Firesafety Criteria for Mobile Home Installations, Sites, and Communities* superseded the 1977 edition and was adopted by NFPA at its Annual Meeting held in San Francisco on May 19, 1982.

The 1982 edition was produced by the newly formed Committee for Firesafety for Mobile Homes (June 10, 1979), which was charged with the responsibility of developing documents for fire safety criteria for single-family mobile homes, including the installation, sites, and communities, and the maintenance of and improvements for existing mobile homes. Therefore, that edition excluded all sections of previous editions not considered within the committee scope. Notably excluded were stabilizing and anchoring systems, requirements for piers and footings, and plumbing, including sewage disposal systems. Requirements for park electrical systems were addressed by reference to NFPA 70, *National Electrical Code®*.

Modifications were also made in sections dealing with fuel supply, air conditioning, and life and fire safety.

Major revisions to the standard were made in the 1987 edition in an attempt to better coordinate the NFPA chapters in a joint publication with NCSBCS, ANSI A225.1/NFPA 501A. Major changes included substituting "manufactured home" for "mobile home" throughout; deleting Chapter 3, "Air Conditioning"; expanding Chapter 2, "Fuel Supply"; and combining three appendixes into two.

The standard was reconfirmed in 1992 with a plan to expand the scope of NFPA 501A to cover fire safety requirements for the design, construction, installation, alteration/rehabilitation, maintenance, use, and occupancy of manufactured homes, manufactured home sites, manufactured home communities, including accessory buildings and structures. This was a major revision of the scope and the entire standard, and the committee targeted a complete revision of 501A for 1994.

The 1997 edition was a reconfirmation of the 1992 edition of NFPA 501A. The proposed expansion of the scope of the 1992 edition, as noted in the previous paragraph, was discussed and acted on by the technical committee. The scope of the NFPA 501A document was not expanded but instead a new document was generated. This document, NFPA 501, *Standard*

on Manufactured Housing, represents the reconstituted 1977 edition of *Standard for Mobile Homes*. This original document was the basis for the federal *Manufactured Home Construction and Safety Standards*.

The earlier editions of NFPA 501A were jointly developed and published by NFPA and NCSBCS as the A225.1/501A document. The 1997 edition of NFPA 501A was published as a separate, stand-alone document in agreement with NCSBCS and contained only the fire safety requirements. The non–fire safety requirements were published by NCSBCS as A225.1 (1994 edition).

Currently, there are discussions with NCSBCS in regard to updating the A225.1 document. The discussions include NFPA assuming the responsibilities of maintaining this document within the Manufactured Home Project as a separate NFPA document.

The 1999 edition was a reconfirmation of the earlier document. In June 1998, NFPA was selected by the U.S. Department of Housing and Urban Development to update the federal standards (24 *CFR* 3280) for manufactured homes. As a result of this selection by HUD, the original technical committee for manufactured homes was expanded into six technical committees and a technical correlating committee. This expansion occurred during the Report on Comments phase of the 1999 edition.

The 2000 edition has only a few minor revisions. One revision, in 4.3.5, pertains to updating the water supplies for fire department operations. The other revisions were editorial in nature.

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Raymond F. Tucker, RADCO, CA, Chair MAN-STR
Michael L. Zieman, RADCO, CA, Chair MAN-MEC

Walter P. Sterling, NFPA Staff Liaison

Committee Scope: This Correlating Committee shall have primary responsibility for documents or portions of documents that provide a safe and healthy environment for the occupant of a manufactured home.

Technical Committee on Administration for Manufactured Housing (MAN-ADM)

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Committee Scope: This Committee shall have primary responsibility for documents or portions of documents on administrative provisions and planning requirements for manufactured homes to assure the adequacy of architectural planning considerations and documentation of compliance for a safe and healthy environment for the occupants of a manufactured home.

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Committee Scope: This Committee shall have primary responsibility for documents or portions of documents on fire safety to the occupants of a manufactured home.

Technical Committee on Mechanical for Manufactured Housing (MAN-MEC)

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Committee Scope: This Committee shall have primary responsibility for documents or portions of documents on condensation control; air infiltration; thermal insulation; certification for heating and comfort cooling; and heating, cooling, and fuel-burning equipment that is installed within, on, or external to a manufactured home.

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Committee Scope: This Committee shall have primary responsibility for documents or portions of documents on materials, products, equipment and workmanship and testing needed to ensure that there is a safe and healthy environment for the occupant of a manufactured home. The Committee shall also have the responsibility associated with the general requirements for designing the structure to fully withstand the adverse effects of transportation shock and vibration on a manufactured home.

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

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

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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.

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.

Information on referenced publications can be found in Chapter 5 and Appendix D.

Chapter 1 Administration

1.1 Scope. This standard shall cover fire safety requirements for the installation of manufactured homes and manufactured home sites, including accessory buildings, structures, and communities.

The provisions of this standard shall not apply to recreational vehicles as defined in NFPA 1192, *Standard on Recreational Vehicles*, or to park trailers as defined in RVIA/ANSI A119.5, *Standards for Park Trailers*.

1.2 Definitions.

1.2.1* Approved. Acceptable to the authority having jurisdiction.

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

1.2.3 Awning. A shade structure supported by posts or columns, or partially supported by a manufactured home, installed, erected, or used on a manufactured home site.

1.2.4 Cabana. A portable, demountable, or permanent room enclosure or other building erected or constructed for human occupancy.

1.2.5 Carport. An awning or shade structure for a vehicle or vehicles that is permitted to be either freestanding or partially supported by a manufactured home.

1.2.6 Community Building. Any nonresidential building used for manufactured home community purposes.

1.2.7 Community Management. The person or entity who owns a development or has charge, care, or control of a community (e.g., park, estate, or subdivision).

1.2.8 Community Street. A private way that affords principal means of access to abutting individual sites, homes, and buildings.

1.2.9 Dwelling Unit. One or more habitable rooms designed to be occupied by one family with facilities for living, sleeping, cooking, eating, and sanitation.

1.2.10 Garage. A structure, located on a manufactured home site, designed for the storage of motor vehicles.

1.2.11 Habitable Room. A room or enclosed floor space arranged for living, eating, food preparation, or sleeping purposes that does not include bathrooms, toilet compartments, laundries, pantries, foyers, hallways, and other accessory floor space.

1.2.12 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.

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

1.2.14* Manufactured Home. A structure that is transportable in one or more sections and that, in the traveling mode, is 8 body-ft (2.4 m) or more in width and 40 body-ft (12.2 m) or more in length or, when erected on site, is 320 ft^2 (29.7 m^2) or more. This structure is built on a permanent chassis and is designed to be used as a dwelling with or without a permanent foundation when connected to the required utilities, which include the plumbing, heating, air-conditioning, and electrical systems contained therein.

1.2.15 Manufactured Home Accessory Building or Structure. A building or structure that is an addition to a manufactured home or that supplements the facilities provided in a manufactured home; it is not a self-contained, separate, habitable building or structure. Examples include awnings, cabanas, garages, ramadas, storage structures, carports, fences, windbreaks, or porches.

1.2.16 Manufactured Home Gas Supply Connector. A listed connector designed for connecting the manufactured home to the gas supply source.

1.2.17 Manufactured Home Site. A parcel of land for the accommodation of one manufactured home, its accessory building or structures, and accessory equipment for the exclusive use of the occupants.

1.2.18 Porch. An outside walking area having a floor that is elevated more than 8 in. (203 mm) above grade.

1.2.19 Ramada. Any freestanding roof or shade structure, installed or erected above a manufactured home or any portion thereof.

1.2.20 Shall. Indicates a mandatory requirement.

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

1.2.22 Standard. A document, the main text of which contains only mandatory provisions using the word "shall" to indicate requirements and which is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions shall be located in an appendix, footnote, or fine-print note and are not to be considered a part of the requirements of a standard.

Chapter 2 Fuel Supply

2.1 Fuel Supply.

2.1.1* General. All fuel gas piping systems serving manufactured homes, accessory buildings, or structures and communities shall be designed and constructed in accordance with any applicable provisions of NFPA 54, *National Fuel Gas Code*, and NFPA 58, *Liquefied Petroleum Gas Code*. NFPA 31, *Standard for the Installation of Oil-Burning Equipment*, shall apply to oil fuel-burning systems and shall conform to the criteria of the authority having jurisdiction.

2.1.2 Gas Supply Connections. Gas supply connections at sites, where provided from an underground gas supply piping system, shall be located and arranged to permit attachment to a manufactured home occupying the site in a worklike manner. For the installation of liquefied petroleum gas (LP-Gas) storage systems, the applicable provisions of NFPA 58, *Liquefied Petroleum Gas Code*, shall be followed.

2.1.3 Location of Gas Supply Connection. The gas supply to the manufactured home shall be located within 4 ft (1.22 m) of the manufactured home stand. *(See also Section 2.3, 2.3.8; Section 2.4, and 2.4.5.)*

Exception: The above requirements shall not apply to gas supply connections for manufactured homes located on all-weather wood, concrete, or concrete block foundation systems or on foundations constructed in accordance with the local building code or, in the absence of a local code, with a recognized model building code.

2.2 Single and Multiple Manufactured Home Site Fuel Supply Systems.

2.2.1 Gas Piping Installations.

2.2.1.1 Gas Supply Connections — Underground Gas Piping. Gas supply connections at sites, where provided from an underground gas supply piping system, shall be located and arranged to permit attachment in a worklike manner to a manufactured home occupying the site. For the installation of LP-Gas storage systems, the provisions of NFPA 58, *Liquefied Petroleum Gas Code*, shall be followed.

2.2.1.2 Underground gas piping system installations shall comply with any applicable building code and 2.2.1.2.1 and 2.2.1.2.2.

2.2.1.2.1 Underground gas piping shall not be installed beneath that portion of a manufactured home site reserved for the location of a manufactured home or manufactured home accessory building or structure unless installed in the open-ended gastight conduit of 2.2.1.2.2.

2.2.1.2.2 The open-ended gastight conduit shall conform to the following:

(1) The conduit shall be not less than Schedule 40 pipe that is approved for underground installation beneath buildings.
(2) The interior diameter of the conduit shall be not less than 0.5 in. (12.7 mm) larger than the outside diameter of the gas piping.
(3) The conduit shall extend to a point not less than 4 in. (102 mm) beyond the outside wall of the manufactured home, accessory building or structure, and the outer ends shall not be sealed.
(4) Where the conduit terminates within a manufactured home, accessory building, or structure, it shall be readily accessible and the space between the conduit and the gas piping shall be sealed to prevent leakage of gas into the building.

2.2.2 Manufactured Home Site Gas Shutoff Valve. Each manufactured home site shall have a listed gas shutoff valve installed upstream of the manufactured home site gas outlet. The gas shutoff valve shall be located on the outlet riser at a height of not less than 6 in. (152 mm) above grade. A gas shutoff valve shall not be located under any manufactured home. The outlet shall be equipped with a cap or plug to prevent discharge of gas whenever the manufactured home site outlet is not connected to a manufactured home.

Exception: All gas shutoff valves for manufactured homes located on foundations constructed in accordance with the local building code or, in the absence of a local code, with a recognized model building code.

2.2.3 Gas Meters.

2.2.3.1 Support of Meters. Where installed, gas meters shall be adequately supported by a post or bracket placed on a firm footing or other means providing equivalent support and shall not depend on the gas outlet riser for support.

2.2.3.2* Location of Meters. Each gas meter shall be installed in an accessible location and shall be provided with unions or other fittings so that the motor is removed easily and replaced in an upright position. Meters shall not be installed in unventilated or inaccessible locations or closer than 3 ft (0.91 m) to sources of ignition.

2.2.4 Meter Shutoff Valve or Cock. All gas meter installations shall be provided with shutoff valves or cocks located adjacent to and on the inlet side of the meters. In the case of a single meter installation utilizing an LP-Gas container, the container service valve shall be permitted to be used in lieu of the shutoff valve or cock. All gas meter installations shall be provided with test tees located adjacent to and on the outlet side of the meters.

2.3 Multiple Manufactured Home Site Fuel Distribution and Supply Systems.

See also Section 2.1, 2.3.11, Section 2.4, and 2.4.5.

2.3.1* Manufactured Home Community Natural Gas Distribution Systems. All underground metallic fuel piping systems shall comply with the cathodic protection requirements of 49 *CFR* 191 and 192.

2.3.2 Manufactured Home Community LP-Gas Supply Systems. Where ten or more customers are served by one LP-Gas supply system, the installation of the gas supply system shall be in accordance with 49 *CFR* 192, "Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards." Other liquefied petroleum gas supply systems and the storage and handling of LP-Gas shall be in accordance with NFPA 58, *Liquefied Petroleum Gas Code. (See also 2.3.8.)*

2.3.3 Installation of Cathodic Protection Systems. Where required by the federal standard cited in 2.3.1, cathodic protection shall be installed for corrosion control of buried or submerged metallic gas piping. *(See also 2.3.6.1 and 2.3.6.2.)*

2.3.4 Required Gas Supply. The minimum hourly volume of gas required at each manufactured home site outlet or any section of the manufactured home community gas piping system shall be calculated as shown in Table 2.3.4.

Table 2.3.4 Demand Factors for Use in Calculating Gas Piping Systems in Manufactured Home Communities

No. of Manufactured Home Sites	Btu/hr per Manufactured Home Site
1	125,000
2	117,000
3	104,000
4	96,000
5	92,000
6	87,000
7	83,000
8	81,000
9	79,000
10	77,000
11–20	66,000
21–30	62,000
31–40	58,000
41–60	55,000
Over 60	50,000

Note: In extreme climate areas, additional capacities shall be considered.

2.3.5 Gas Pipe Sizing and Pressure.

2.3.5.1 The size of each section of a gas piping system shall be determined in accordance with NFPA 54, *National Fuel Gas Code*, or by other standard engineering methods acceptable to the authority having jurisdiction.

2.3.5.2 Where all connected appliances are operated at their rated capacity, the supply pressure shall be not less than 4 oz/in.^{2} [7 in. water column (1743 Pa)]. The gas supply pressure shall not exceed 8 oz/in.^{2} [14 in. water column (3486 Pa)].

2.3.6 Gas Piping Materials.

2.3.6.1 Metal. Metal gas pipe shall be standard weight wrought iron or steel (galvanized or black), yellow brass containing not more than 75 percent copper, or internally tinned or treated copper of iron pipe size. Galvanizing shall not be considered protection against corrosion.

Seamless copper or steel tubing shall be permitted to be used with gases not corrosive to such material. Steel tubing shall comply with ASTM A 539, *Standard Specification for Electric-Resistance-Welded Coiled Steel Tubing for Gas and Fuel Oil Lines*, or ASTM A 254, *Standard Specification for Copper Brazed Steel Tubing*. Copper tubing shall comply with ASTM B 88, *Specification for Seamless Copper Water Tubing* (Type K or Type L), or ASTM B 280, *Specification for Seamless Copper Tubing for Air Conditioning and Refrigeration Field Service*. Copper tubing (unless tin-lined) shall not be used if the gas contains more than an average of 0.3 grains of hydrogen sulfide per 100 standard ft^3 of gas.

2.3.6.2 Protection Coatings for Metal Gas Piping. All buried or submerged metallic gas piping shall be protected from corrosion by approved coatings or wrapping materials. All gas pipe protective coatings shall be approved types, shall be machine applied, and shall conform to recognized standards. Field wrapping shall provide equivalent protection and is restricted to those short sections and fittings that are necessarily stripped for threading or welding. Risers shall be coated or wrapped to a point at least 6 in. (152 mm) above ground.

2.3.6.3 Plastic. Plastic piping shall only be used underground and shall meet the requirements of ASTM D 2513, *Thermoplastic Gas Pressure Pipe, Tubing, and Fittings*, or ASTM D 2517, *Reinforced Epoxy Resin Gas Pressure Pipe and Fittings*, as well as the design pressure and design limitations of 49 *CFR* 192.123, and shall otherwise conform to the installation requirements thereof.

2.3.7 Gas Piping Installations.

2.3.7.1 Minimum Burial Below Ground Level and Clearances. All gas piping installed below ground level shall have a minimum earth cover of 18 in. (451 mm) and shall be installed with at least 12 in. (305 mm) of clearance in any direction from any other underground utility system.

2.3.7.2 Metallic Gas Piping.

2.3.7.2.1 All metallic gas piping systems shall be installed in accordance with approved plans and specifications, including provisions for cathodic protection. Each cathodic protection system shall be designed and installed to conform to the provisions of 49 *CFR* 192.

2.3.7.2.2 Where the cathodic protection system is designed to protect only the gas piping system, the gas piping system shall be electrically isolated from all other underground metallic systems or installations. Where only the gas piping system is cathodically protected against corrosion, a dielectric fitting shall be used in the manufactured home gas connection to insulate the manufactured home from the underground gas piping system.

2.3.7.2.3 Where a cathodic protection system is designed to provide all underground metallic systems and installations with protection against corrosion, all such systems and installations shall be electrically bonded together and protected as a whole.

2.3.7.3 Plastic Gas Piping. Plastic gas piping shall only be used underground and shall be installed with an electrically conductive wire for locating the pipe. The wire used to locate the plastic pipe shall be copper, not smaller in size than No. 18 AWG, with insulation approved for direct burial. Every portion of a plastic gas piping system consisting of metallic pipe shall be cathodically protected against corrosion.

2.3.7.4 Gas Piping System Shutoff Valve. A readily accessible and identifiable shutoff valve controlling the flow of gas to the entire manufactured home community gas piping system shall be installed near the point of connection to the service piping or to the supply connection of an LP-Gas container.

2.3.8* Liquefied Petroleum Gas Equipment. LP-Gas equipment shall be installed in accordance with the applicable provisions of NFPA 58, *Liquefied Petroleum Gas Code*.

2.3.9 Oil Supply. The following three methods of supplying oil to an individual manufactured home site shall be permitted:

(1) Supply from an outside underground tank *(see 2.4.6)*
(2) Supply from a centralized oil distribution system designed and installed in accordance with accepted engineering practices and in compliance with NFPA 31, *Standard for the Installation of Oil-Burning Equipment*
(3) Supply from an outside aboveground tank *(see 2.4.6)*

2.3.10* Minimum Oil Supply Tank Size. Oil supply tanks shall have a minimum capacity equal to 20 percent of the average annual oil consumption.

2.3.11 Oil Supply Connections — General. Oil supply connections at manufactured home stands, where provided from a centralized oil distribution system, shall be located and arranged to permit attachment in a worklike manner to a manufactured home utilizing the stand. The installation of such facilities shall meet the provisions of NFPA 31, *Standard for the Installation of Oil-Burning Equipment*, and particularly Section 3.8 thereof.

2.4 Fuel Supply Systems Installation.

2.4.1* Flexible Gas Connector. Each gas supply connector shall be listed for outside manufactured home use, shall be not more than 6 ft (1.83 m) in length, and shall have a capacity rating adequate to supply the connected load.

Exception: All gas supply connections for manufactured homes located on an all-weather wood, concrete, or concrete block foundation system or on a foundation constructed in accordance with the local building code or, in the absence of a local code, with a recognized model building code.

2.4.2 Use of Approved Pipe and Fittings of Extension. Where it is necessary to extend the manufactured home inlet to permit connection of the 6-ft (1.83-m) listed connector to the site gas outlet, the extension shall be of approved materials of the same size as the manufactured home inlet and shall be adequately supported at no more than 4-ft (1.22-m) intervals to the manufactured home.

2.4.3* Mechanical Protection. All gas outlet risers, regulators, meters, valves, or other exposed equipment shall be protected against accidental damage.

2.4.4 Special Rules on Atmospherically Controlled Regulators. Atmospherically controlled regulators shall be installed in such a manner that moisture cannot enter the regulator vent and accumulate above the diaphragm. Where the regulator vent is obstructed due to snow and icing conditions, shields, hoods, or other suitable devices shall be provided to guard against closing of the vent opening.

2.4.5 Fuel Gas Piping Test. The manufactured home fuel gas piping system shall be tested only with air before it is connected to the gas supply. The manufactured home gas piping system shall be subjected to a pressure test with all appliance shutoff valves in their closed positions.

2.4.5.1 The fuel gas piping test shall consist of air pressure at not less than 10 in. water column or more than 14 in. water column [6 oz/in.^{2} to 8 oz/in.^{2} (2490 Pa to 3486 Pa)]. The system shall be isolated from the air pressure source and shall maintain this pressure for not less than 10 minutes without perceptible leakage. Upon satisfactory completion of the test, the appliance valves shall be opened and the gas appliance connectors shall be tested with soapy water or bubble solution while under the pressure remaining in the piping system. Solutions used for testing for leakage shall not contain corrosive chemicals. Pressure shall be measured with either a manometer, slope gauge, or gauge that is calibrated in either water in. or psi with increments of either $^1/_{10}$ in. (2.5 mm) or $^1/_{10}$ psi (0.6 kPa gauge), as applicable. Upon satisfactory completion of the test, the manufactured home gas supply connector shall be installed and the connections shall be tested with soapy water or bubble solution.

WARNING

Do not overpressurize the fuel gas piping system. Damage to valves, regulators, and appliances can occur due to pressurization beyond the maximums specified.

2.4.5.2 Gas appliance vents shall be visually inspected to ensure that they have not been dislodged in transit and are connected securely to the appliance.

2.4.6 Oil Tanks. No more than one 660-gal (2500-L) tank or two tanks with aggregate capacity of 660 gal (2500 L) or less shall be connected to one oil-burning appliance. Two supply tanks, where used, shall be cross-connected and provided with a single fill and single vent, as described in NFPA 31, *Standard for the Installation of Oil-Burning Equipment*, and shall be on a common slab and rigidly secured, one to the other. Tanks having a capacity of 660 gal (2500 L) or less shall be securely supported by rigid, noncombustible supports to prevent settling, sliding, or lifting.

2.4.6.1* Oil supply tanks shall be installed in accordance with the applicable provisions of NFPA 31, *Standard for the Installation of Oil-Burning Equipment*.

2.4.6.2 A tank with a capacity no larger than 60-gal (230-L) shall be permitted to be a DOT-5 shipping container (drum), and so marked, or a tank meeting the provisions of UL 80, *Steel Inside Tank for Oil Burner Fuel*. Tanks other than DOT-5 shipping containers having a capacity of not more than 660 gal (2500 L) shall meet the provisions of UL 80. Pressure tanks shall be built in accordance with Section VIII, Pressure Vessels, ASME *Boiler and Pressure Vessel Code*.

2.4.6.3 Tanks, as described in 2.4.6 and 2.4.6.2, that are adjacent to buildings shall be located not less than 10 ft (3.05 m) from a property line that is permitted to be built upon.

2.4.6.4 Tanks with a capacity no larger than 660 gal (2500 L) shall be equipped with an open vent no smaller than 1.5-in. (38-mm) iron pipe size; tanks with a 500-gal (1900-L) or less capacity shall have a vent of 1.25-in. (32-mm) iron pipe size.

2.4.6.5* Tanks shall be provided with a means of determining the liquid level.

2.4.6.6 The fill opening shall be a size and in a location that permits ready filling without spillage.

2.5 Manufactured Home Accessory Building Fuel Supply Systems. Fuel gas supply systems installed in a manufactured home accessory building or structure shall comply with the applicable provisions of NFPA 54, *National Fuel Gas Code*, and NFPA 58, *Liquefied Petroleum Gas Code*. Fuel oil supply systems

shall comply with the applicable provisions of NFPA 31, *Standard for the Installation of Oil-Burning Equipment.*

2.6 Community Building Fuel Supply Systems in Manufactured Home Communities.

2.6.1 Fuel Gas Piping and Equipment Installations. Fuel gas piping and equipment installed within a permanent building in a manufactured home community shall comply with nationally recognized appliance and fuel gas piping codes and standards adopted by the authority having jurisdiction. Where the state or other political subdivision does not assume jurisdiction, such fuel gas piping and equipment installations shall be designed and installed in accordance with the appropriate provisions of NFPA 54, *National Fuel Gas Code*, or NFPA 58, *Liquefied Petroleum Gas Code.*

2.6.2 Oil Supply Systems in Manufactured Home Communities. Oil-burning equipment and installation within a manufactured home community shall be designed and constructed in accordance with the applicable codes and standards adopted by the authority having jurisdiction. Where the state or other political subdivision does not assume jurisdiction, such installation shall be designed and constructed in accordance with the applicable provisions of NFPA 31, *Standard for the Installation of Oil-Burning Equipment.*

2.6.3 Oil-Burning Equipment and Installation. Oil-burning equipment and installation within a building constructed in a manufactured home community in accordance with the local building code or a nationally recognized building code shall comply with nationally recognized codes and standards adopted by the authority having jurisdiction. Where the state or other political subdivision does not assume jurisdiction, such oil-burning equipment and installation shall be designed and installed in accordance with the appropriate provisions of NFPA 31, *Standard for the Installation of Oil-Burning Equipment.*

Chapter 3 Electrical Systems

3.1 Manufactured Home Site and Community Electrical Equipment and Installations. Sites and communities provided with electrical service shall have all electrical equipment and installations designed, constructed, and maintained in accordance with the applicable provisions of NFPA 70, *National Electrical Code®*.

Chapter 4 Life Safety and Fire Safety

4.1 General. Responsibility for life safety and fire safety within manufactured home communities shall be that of the owners and operators of the community.

4.1.1 Arrangement of manufactured homes and accessory buildings or structures on the site shall not restrict reasonable access to the site by emergency personnel. Each community operator shall maintain a community site plan for review by agencies responsible for emergency services. This plan shall include, but not be limited to, the following information:

(1) Street names
(2) Site separation lines
(3) Site numbers
(4) Water supplies for fire protection personnel
(5) Fire alarms
(6) Utility disconnects

4.1.2 Each street name in the manufactured home community shall be clearly marked with signs and each manufactured home site shall be marked for identification in a uniform manner that is clearly visible from the street serving the site.

4.2 Manufactured Home Site Fire Safety Requirements.

4.2.1 Fire Safety Separation Requirements.

4.2.1.1 No portion of a manufactured home, excluding the tongue, shall be located closer than 10 ft (3 m) side to side, 8 ft (2.4 m) end to side, or 6 ft (1.8 m) end to end horizontally from any other manufactured home or community building unless the exposed composite walls and roof of either structure are without openings and constructed of materials that will provide a 1-hour fire resistance rating or the structures are separated by a 1-hour fire-rated barrier. *(See 4.4.1.)*

4.2.1.2 Vertical Positioning of Manufactured Homes. Manufactured homes shall not be positioned vertically, stacked with one over the other, in whole or in part, unless the structure is designed and approved for such installation and permitted by the authority having jurisdiction.

4.2.2* Marking of Underground Utility Lines. The location of underground electrical cables, gas piping, water piping, and sewer lines that are buried within 4 ft (1.2 m) of the perimeter of the site's largest planned manufactured home shall be indicated by an aboveground sign(s) or underground marker tapes identifying the proximity of the lines. A plot plan showing the "as built" location of underground utility lines shall be available for installations in multiple-site facilities.

4.2.3 Manufactured Home Installations.

4.2.3.1 Installation of all manufactured homes, including the installation of the support system and the connection of structural, electrical, mechanical, and plumbing systems to the site utilities or between sections in the case of multiple-section homes, shall be performed in accordance with printed installation instructions provided by the manufacturer of the home.

4.2.3.2 For installations where printed instructions by the manufacturer are not available, the installation shall be performed in a manner that satisfies the intent of this standard as determined by the authority having jurisdiction.

4.2.3.3 The design of support systems shall consider the climatic and geological conditions present at the manufactured home site.

4.2.3.4 All manufactured home utility services shall be connected to the supply sources only with approved materials.

4.2.3.5 All manufactured homes, accessory buildings, structures, and community buildings shall be located and maintained in such a manner that required egress windows or doors are not blocked.

4.3 Manufactured Home Community Buildings.

4.3.1 Construction. Every community building shall be designed and constructed in accordance with the applicable provisions of local building codes. Materials, fixtures, devices, fittings, and the installation of such shall conform to nationally recognized standards.

4.3.2 Incinerators and Rubbish Burning.

4.3.2.1 The burning of rubbish within a community shall not be permitted unless specifically permitted by the authority having jurisdiction.

4.3.2.2 Incinerators, where permitted by the authority having jurisdiction, shall be constructed in accordance with NFPA 82, *Standard on Incinerators and Waste and Linen Handling Systems and Equipment.*

4.3.2.3 Incinerators, where permitted by the authority having jurisdiction, shall meet the applicable standards of the environmental protection agency having jurisdiction.

4.3.3 Outdoor Hazards. All areas and individual sites within the manufactured home community shall be maintained so as to be free of dry brush, leaves, weeds, and other debris that could contribute to the spread of fire within the site or community.

4.3.4 Fire Detection and Alarm Systems.

4.3.4.1* Fire detection and alarm systems in community buildings shall be installed in accordance with NFPA 72, *National Fire Alarm Code®*.

4.3.4.2 Where provided, street fire alarm services for the community shall be in accordance with NFPA 1221, *Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems.* Where such services are not provided, alarm procedures shall be posted as required by the local fire service.

4.3.5 Water Supplies for Fire Protection — Minimum Requirements.

4.3.5.1 Water supplies for fire department operations without municipal water supply shall be in accordance with NFPA 1142, *Standard on Water Supplies for Suburban and Rural Fire Fighting.*

4.3.5.2 Where provided, hydrants shall be located along community streets or public ways within 500 ft (152.4 m) of all homes and buildings and installed in accordance with NFPA 24, *Standard for the Installation of Private Fire Service Mains and Their Appurtenances.* The Insurance Service Office, Inc. (ISO) Fire Suppression Rating Schedule, Table 340, Calculation of Needed Fire Flow, water flow rate table shall be used to determine the minimum water flow required.

4.3.6 Manufactured Home and Community Fire Safety Requirements.

4.3.6.1* The space under manufactured homes and accessory buildings and structures shall not be used for the storage of combustible materials or for the storage or placement therein of flammable liquids, gases, or liquid- or gas fuel-powered equipment.

4.3.6.2 The following emergency information shall be printed and posted in conspicuous places in the manufactured home community:

(1) Telephone numbers for the following:
   a. Fire department
   b. Police department or sheriff's office
   c. Community office
   d. Person responsible for operation and maintenance of the manufactured home community

(2) Locations of the following:
   a. Nearest fire alarm box, where available
   b. Nearest public telephone
   c. Address of the manufactured home community

4.3.6.3* Portable fire extinguishers, where required or installed, shall be of the type and size required by NFPA 10, *Standard for Portable Fire Extinguishers.*

4.3.6.4 The provisions of NFPA *101®*, *Life Safety Code®*, regarding construction, protection, and occupancy features of community buildings shall be followed, as applicable, to minimize danger to life from fire, smoke, or panic. Special attention shall be given to the number, size, and arrangement of exit facilities in community buildings used as places of public assembly.

4.3.6.5 Community buildings shall be provided with listed portable fire extinguishers in accordance with the applicable provisions of NFPA 10, *Standard for Portable Fire Extinguishers.*

4.4 Accessory Building or Structure Fire Safety Requirements.

4.4.1 Setback Requirements. Accessory buildings or structures shall be permitted to be located immediately adjacent to a site line when constructed entirely of materials that do not support combustion and provided that such buildings or structures are not less than 3 ft (0.9 m) from an accessory building or structure on an adjacent site. An accessory building or structure constructed of combustible materials shall be located no closer than 5 ft (1.5 m) from the site line of an adjoining site.

4.4.2 Exits. Every habitable room in an accessory building or structure shall have access to at least one exterior opening suitable for exiting directly to the outside without passing through the manufactured home. Where a building or structure encloses two doors of the manufactured home or an emergency exit window, an additional exterior door shall be installed. This exterior door shall not be less than 28 in. (0.7 m) in width and 6 ft 2 in. (1.9 m) in height.

Chapter 5 Referenced Publications

5.1 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 Appendix D.

5.1.1 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 24, *Standard for the Installation of Private Fire Service Mains and Their Appurtenances,* 1995 edition.

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

NFPA 54, *National Fuel Gas Code*, 1999 edition.

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

NFPA 70, *National Electrical Code®*, 1999 edition.

NFPA 72, *National Fire Alarm Code®*, 1999 edition.

NFPA 82, *Standard on Incinerators and Waste and Linen Handling Systems and Equipment*, 1999 edition.

NFPA *101®*, *Life Safety Code®*, 2000 edition.

NFPA 1142, *Standard on Water Supplies for Suburban and Rural Fire Fighting*, 1999 edition.

NFPA 1192, *Standard on Recreational Vehicles*, 1999 edition.

NFPA 1221, *Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems*, 1999 edition.

5.1.2 Other Publications.

5.1.2.1 ASME Publication. American Society of Mechanical Engineers, Three Park Avenue, New York, NY 10016-5990.

ASME *Boiler and Pressure Vessel Code*, 1989.

5.1.2.2 ASTM Publications. American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM A 254, *Standard Specification for Copper Brazed Steel Tubing*, 1997.

ASTM A 539, *Standard Specification for Electric-Resistance-Welded Coiled Steel Tubing for Gas and Fuel Oil Lines*, 1996.

ASTM B 88, *Specification for Seamless Copper Water Tubing*, 1996.

ASTM B 280, *Specification for Seamless Copper Tubing for Air Conditioning and Refrigeration Field Service*, 1997.

ASTM D 2513, *Thermoplastic Gas Pressure Pipe, Tubing, and Fittings*, 1996.

ASTM D 2517, *Reinforced Epoxy Resin Gas Pressure Pipe and Fittings*, 1994.

5.1.2.3 ISO Publication. Insurance Services Office, Inc., 7 World Trade Center, New York, NY 10048-1199.

Fire Suppression Rating Schedule, Table 340, "Calculation of Needed Fire Flow," 6th edition, 1988.

5.1.2.4 RVIA Publication. Recreation Vehicle Industry Association, 1896 Preston White Drive, P.O. Box 2999, Reston, VA 02209-0999.

RVIA /ANSI A119.5, *Standard for Park Trailers*, 1998.

5.1.2.5 UL Publication. Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062.

UL 80, *Steel Inside Tank for Oil Burner Fuel*, 1996.

5.1.2.6 U.S. Government Publication. U.S. Government Printing Office, Washington, DC 20402.

Title 49, *Code of Federal Regulations*, Parts 191 and 192, "Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards."

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.1.2.1 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.1.2.2 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.1.2.13 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.1.2.14 Manufactured Home. Manufactured homes were formerly referred to as mobile homes or trailer coaches.

A.2.1.1 Gas piping systems (e.g., natural gas, manufactured gas, LP-Gas in the vapor phase, liquefied petroleum gas-air mixtures, or mixtures of these gases) that are owned, operated, and maintained by a public utility are exempt from the provisions of this standard but are required to conform to 49 *CFR* 192. *(See 2.3.1.)*

A.2.2.3.2 Electrical service equipment for a manufactured home should not be considered a source of ignition where it is not enclosed in the same compartment with a gas meter.

A.2.3.1 The Natural Gas Pipeline Safety Act of 1979 requires that all gas distribution system operators adhere to the referenced title. Any master-metered gas distribution system that supplies a manufactured home community with gas and that, in turn, distributes the gas to the ultimate users (i.e., tenants) is defined as a gas distribution system within the context of the federal regulations. Owners of master-metered housing projects or manufactured home communities accordingly are defined as "gas distribution system operators."

Title 49 *CFR* 191 provides requirements for the reporting of gas leaks that are not intended by the operator.

The American Society of Mechanical Engineers publishes the ASME B 31.8 *Guide for Gas Transmission and Distribution Piping Systems*, which contains 49 *CFR* 192, along with other useful technical information.

The *Handbook on Natural Gas Pipeline Safety in Residential Areas Served by Master Meters* was developed under contract for the U.S. Department of Housing and Urban Development (HUD-PDR-124) and is specifically aimed at providing "a timely and comprehensive safety guide for architects and engineers involved in the planning and design phases of multifamily projects and manufactured home parks."

A.2.3.8 NFPA 58, *Liquefied Petroleum Gas Code*, includes provisions on the following:

(1) Location of containers
(2) Installation of containers
(3) Installation of container appurtenances
(4) Regulator installations