NFPA 501A

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

1999 Edition

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

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NFPA 501A

Standard for Fire Safety Criteria for

Manufactured Home Installations, Sites, and Communities

1999 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 Manufactured Homes and acted on by the National Fire Protection Association, Inc., at its Annual Meeting held May 17–20, 1999, in Baltimore, MD. It was issued by the Standards Council on July 22, 1999, with an effective date of August 13, 1999, and supersedes all previous editions.

This edition of NFPA 501A was approved as an American National Standard on August 13, 1999.

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The 1982 edition of *Standard for Firesafety Criteria for Mobile Home Installations, Sites, and Communities,* superseded the 1977 edition and was adopted by NFPA at its Annual Meeting held in San Francisco on May 19, 1982.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 document. A related activity associated with the plan to expand the scope of NFPA 501A occurred with the creation of NFPA 501. NFPA 501, 1997 edition is the reinstituted 1977 edition of *Standard for Mobile Homes,* and is the basis for the federal Manufactured Home Construction and Safety Standards.

NFPA had previously published A225.1/501A as jointly developed by NFPA and NCSBCS. The 1997 edition of NFPA 501A included only the fire safety portion of this document. The non-fire-safety portion was published separately as A225.1 by NCSBCS.

The 1999 edition is 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. Because of this, 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.

Technical Committee on Manufactured Homes

John Lake, *Chair*
Marion County Fire/Rescue, FL [E]

Larry Boyce, NORDYNE, MO [M]
Paul E. Buchhofer, Bldg. Inspection Underwriters, Inc., PA [E]
Gene B. Endthoff, Nat'l Fire Sprinkler Assn., IL [M]
Thomas W. Fritz, Armstrong World Industries Inc., PA [M]
Danny D. Ghorbani, Assn. for Regulatory Reform, DC [M]
Martin C. Gilchrist, Urban Research & Development Corp., PA [SE]
John M. Halliwill, Int'l Assn. of Plumbing & Mechanical Officials, CA [E]
Jordan Heiman, Jordan L. Heiman Inc., MO [SE]
Rep. American Society for Heating, Refrigeration & Air Conditioning Engr, Inc.
Daryl L. Hosler, Southern California Gas Co., CA [U]
Patrick Lewis, Oregon Bldg. Codes Division, OR [E]
M. L. "Larry" Maruskin, Federal Emergency Mgmt. Agency, MD [C]
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James R. Paschal, NSF Int'l, MI [RT]
James V. Ryan, Potomac, MD [C]
Raymond F. Tucker, RADCO, CA [M]
Frank Walter, Manufactured Housing Inst., VA [M]
Ralph J. Warburton, University of Miami, FL [SE]
A. Elwood Willey, FIREPRO, Inc., MA [SE]

Walter P. Sterling, 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. A key to classifications is found at the back of this document.

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

Committee Scope: This Committee shall have primary responsibility for documents on manufactured homes including the installation, sites and communities, and the maintenance of and improvements for existing manufactured homes.

Contents

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Manufactured Home Installations, Sites, and Communities

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

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

Chapter 1 Scope, Intent of Standard, and Definitions

1-1 Scope. This standard covers 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 ANSI A119.5, *Standards for Park Trailers.*

1-2 Definitions.

Approved.* Acceptable to the authority having jurisdiction.

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

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.

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

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.

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

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).

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

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

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

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

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.

Labeled. Equipment or materials to which has been attached a label, symbol, or other identifying mark of an organization that is acceptable to the authority having jurisdiction and concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials, and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.

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

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.

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.

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.

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

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

Shall. Indicates a mandatory requirement.

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

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 Sections 2-3 and 2-4, 2-3.8, 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:

(a) The conduit shall be not less than Schedule 40 pipe that is approved for underground installation beneath buildings. 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.

(b) 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. 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 Sections 2-1 and 2-4, 2-3.11, 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 10 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.

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.

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.

Seamless copper or steel tubing shall be permitted to be used with gases not corrosive to such material. Steel tubing shall comply with ANSI/ASTM A 539, *Standard Specification for Electric-Resistance-Welded Coiled Steel Tubing for Gas and Fuel Oil Lines,* or ANSI/ASTM A 254, *Standard Specification for Copper Brazed Steel Tubing.* Copper tubing shall comply with ANSI/ASTM B 88, *Specification for Seamless Copper Water Tubing* (Type K or Type L), or ANSI/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, be machine applied, and 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;* 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, be not more than 6 ft (1.83 m) in length, and 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. (250 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 Any portion of a manufactured home, excluding the tongue, shall not 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 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 Public Fire Service Communication 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 shall be as required by the authority having jurisdiction. Where there are no such requirements, water supplies shall be at least adequate to support the effective operation of two 1.5-in. (38-mm)

hose streams on any fire in a building. The supply shall be permitted to be derived from the following:

(1) Hydrants connected to an underground water supply system
(2) Reservoir or water supply with a source not less than 3000 gal (11,360 L) (accessible fire department drafting operations)
(3) Fire department apparatus equipped with a water tank(s) with a capacity of 750 gal (2840 L) and a pump capacity of 250 gpm (16 L/sec), constructed in accordance with NFPA 1901, *Standard for Automotive Fire Apparatus*

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 shall be readily accessible for fire department use. Hydrant-hose coupling threads shall be national standard threads or shall conform to those used by the local fire department if different from those specified in NFPA 1963, *Standard for Fire Hose Connections.*

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) Phone numbers of 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 31, *Standard for the Installation of Oil-Burning Equipment,* 1997 edition.

NFPA 54, *National Fuel Gas Code,* 1996 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®*, 1997 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.

NFPA 1901, *Standard for Automotive Fire Apparatus,* 1999 edition.

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

5-1.2 Other Publications.

5-1.2.1 ASME Publication. American Society of Mechanical Engineers, 345 East 47th Street, New York, NY 10017.

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 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.

5-1.2.4 UL Publication. Underwriters Laboratories, Inc., 333 Pfingsten Road, Northbrook, IL 60062.

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

5-1.2.5 U.S. Government Publication. U.S. Government Printing Office, Washington, DC 20402.

Title 49, *Code of Federal Regulations,* Parts 191 and 192, October 1, 1995.

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 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 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 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 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 Title 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 (November 1975) 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: location of containers; installation of containers; installation of container appurtenances; regulator installations; piping system service limitations; installation of pipe, tubing, pipe and tubing fittings, valves, and hose; and hydrostatic relief valve installation.

A-2-3.10 Sixty-gal (230-L) ICC-5 shipping containers or drums are not recommended, except for areas with less than 1800-degree days.

A-2-4.1 A flexible connector should be installed to provide some slack.

A-2-4.3 Such protection can consist of posts, fencing, or other permanent barriers.

A-2-4.6.1 The provisions in 2-4.6.1 do not apply to centralized oil distribution systems *(see 2-3.11 and 2-6.2).* See also NFPA 31, *Standard for the Installation of Oil-Burning Equipment.* Chapter 2 of NFPA 31 includes provisions on the design and construction of tanks, installation of underground tanks, outside aboveground tanks no larger than 660 gal (2500 L), and location with respect to adjacent buildings and adjoining property lines.

A-2-4.6.5 Additional information can be found in Section 3-6 of NFPA 31, *Standard for the Installation of Oil-Burning Equipment.*

A-4-2.2 This requirement is to prevent possible damage to underground electrical cables, gas and water piping, and sewer lines caused by the use of ground anchors, the installation of skirting (underfloor enclosures), plantings, foundations for steps at access doors, and so forth.

A-4-3.4.1 See NFPA 72, *National Fire Alarm Code,* for other suitable types of fire protective signaling systems.

A-4-3.5.2 For additional information, see NFPA 1963, *Standard for Fire Hose Connections.*

A-4-3.6.3 It is recommended that each building owner provide a listed portable fire extinguisher that is suitable for han-

dling incipient fire in the building. A listed extinguisher labeled as suitable for Class A, Class B, and Class C fires (i.e., multipurpose dry chemical-type) is recommended. A 0.75-in. (19-mm) nominal valved water outlet designed for connecting a 0.75-in. (19-mm) nominal female swivel hose connection for fire suppression use is recommended on each site where practical and if protected against freezing.

A-4-3.6.1 See Appendix B for additional information.

Appendix B Manufactured Home Community Action for Fire Safety

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

B-1 Purpose. The purpose of this appendix is to give fire safety guidance for the manufactured home community.

B-2 Responsibilities of the Manufactured Home Community Management. The manufactured home community management's objective should be to give information to the community's manufactured home owners/occupants and to encourage their cooperation in the protection of life and property from fire.

The community management also should be responsible for instructing staff in the use of fire protection equipment and defining specific duties in the event of fire.

The community management should prepare the type of material detailed in B-2.1 through B-2.5 with the cooperation of the responsible local fire protection authority.

B-2.1 How to Report a Fire. Give specific instructions to owners on how to report a fire, including the following:

(1) Name of manufactured home community

(2) Location of community

(3) Identification of involved manufactured home site

B-2.2 Utility Services. The connecting and disconnecting of water, fuel, and electrical services should be performed only by authorized persons, as determined by park management. Should these services be interrupted, telephone or notify _____ for water, _____ for fuel, and _____ for electrical.

B-2.3 Fire-Fighting Equipment. Portable fire extinguishers and/or other fire-fighting equipment are maintained on the premises. The nearest emergency equipment is located _____.

NOTE: Give full directions as to the equipment's location.

B-2.4 Laundry Rooms. Clothes dryers should be cleaned periodically by management to remove combustible material, including lint. A sign should be located in a conspicuous place warning of the fire hazard in placing plastics in dryers and warning against the use of flammable liquids as cleaning agents.

B-2.5 Recreation Buildings. Management should instruct staff and community residents in the proper use of appliances located in community buildings and provide a list of these instructions near each appliance.

Appendix C Responsibilities of the Manufactured Home Resident

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

C-1 Responsibilities. The manufactured home resident should comply with all applicable requirements of this standard and should maintain his or her manufactured home site, its facilities, and its equipment in good repair and in a fire-safe condition.

C-1.1 Procedures in Case of Fire. In case of a fire in a manufactured home, the home owner should do the following in the order specified:

(1) Get all occupants out of the home.

(2) Call the fire department or sound the alarm. The important thing is to get professional fire fighters to the fire as promptly as possible.

C-1.2 Fire Conditions. Home owners should aid the management in keeping the area free of fire hazards by notifying the management when unsafe conditions exist. Constant vigilance is necessary to maintain the premises free from fire at all times.

C-1.3 LP-Gas Containers. In addition to mounted LP-Gas containers, a home can have two additional vessels installed on the lot. The home can be served by either the vehicle containers or by the vessels on the lot, but not by both at the same time. LP-Gas containers should be installed in accordance with the applicable provisions of NFPA 58, *Liquefied Petroleum Gas Code.*

C-1.4 Charging of Vessels. LP-Gas vessels should be charged in accordance with the applicable provisions of NFPA 58, *Liquefied Petroleum Gas Code.*

C-1.5 Location of Vessels. LP-Gas vessels should not be stored or located inside of or beneath any storage cabinet, cabana, awning, carport, ramada, home, or any other structure in a community.

C-1.6 Empty LP-Gas Containers. Owners should not place empty LP-Gas containers under their homes. Empty containers should be left in place if there is more than one container. If the manufactured home's LP-Gas supply is limited to one container and a replacement has been secured, any empty fuel container should be stored in the area designated for such storage.

C-1.7 Home Inspections. A manufactured home owner should notify the fire department if the owner wishes to have a voluntary home inspection performed.

C-1.8 Traffic Regulations. Operators of vehicles should observe the posted signs and keep all designated fire lanes and access to fire hydrants open at all times.

C-1.9 Marking. Each home site should be marked for identification. Such a marker should be easily readable from the street servicing the site.

C-2 Periodic Inspections. Periodic inspections of the enclosed space are recommended to ensure that all utility and other connections are secure and that no fire hazards exist.