

NFPA 501A
Firesafety Criteria
for Manufactured
Home Installations,
Sites, and
Communities
1987 Edition



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

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NFPA 501A

Standard for Firesafety Criteria for Manufactured Home Installations, Sites, and Communities

1987 Edition

This edition of NFPA 501A, *Standard for Firesafety Criteria for Manufactured Home Installations, Sites, and Communities*, was prepared by the Technical Committee on Firesafety for Manufactured Homes, and acted on by the National Fire Protection Association, Inc. at its Annual Meeting held May 18-21, 1987 in Cincinnati, Ohio. It was issued by the Standards Council on June 10, 1987, with an effective date of June 30, 1987, and supersedes all previous editions.

The 1987 edition of this standard has been approved by the American National Standards Institute.

Origin and Development of NFPA 501A

NFPA activity in this general area 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The 1982 edition on *Standard for Firesafety Criteria for Mobile Home Installations, Sites and Communities* superseded the 1977 edition and was adopted by NFPA at its Annual Meeting held in San Francisco on May 19, 1982.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 20, 1979) charged with the responsibility of developing documents for firesafety 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 the *National Electrical Code*®.

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

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

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Contents

Chapter 1 Scope, Intent of Standard, and Definitions	501A- 4
1-1 Scope	501A- 4
1-2 Definitions	501A- 4
Chapter 2 Fuel Supply	501A- 5
2-1 Fuel Supply	501A- 5
2-2 Single and Multiple Manufactured Home Site Fuel Supply Systems	501A- 5
2-3 Multiple Manufactured Home Site Fuel Distribution and Supply Systems	501A- 6
2-4 Fuel Supply Systems Installation	501A- 7
2-5 Manufactured Home Accessory Building Fuel Supply Systems	501A- 8
2-6 Community Building's Fuel Supply Systems	501A- 8
Chapter 3 Electrical	501A- 9
3-1 Site and Community Electrical Equipment and Installations	501A- 9
Chapter 4 Life and Firesafety	501A- 9
4-1	501A- 9
4-2 Manufactured Home Site Firesafety Requirements	501A- 9
4-3 Manufactured Home Community Buildings	501A-10
4-4 Accessory Building or Structure Firesafety Requirements	501A-11
Chapter 5 Referenced Publications	501A-11
Appendix A Manufactured Home Community Action for Firesafety	501A-11
A-1 Purpose of Appendix A	501A-11
A-2 Responsibilities of Community Management	501A-11
Appendix B Responsibilities of the Manufactured Home Resident	501A-12
Appendix C Referenced Publications	501A-12
Index	501A-13

Notice: NFPA has previously published A225.1/501A as jointly developed by NFPA and NCSBCS. This edition of NFPA 501A includes only the firesafety portion of this document. The non-firesafety portion is being published as A225.1 separately by NCS/BCS.

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

Chapter 1 Scope, Intent of Standard, and Definitions

1-1 Scope. This standard covers firesafety 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 the NFPA 501C, *Standard on Firesafety Criteria for Recreational Vehicles*, or to park trailers as defined in the ANSI A119.5, *Standards for Park Trailers*.

1-2 Definitions.

Approved. Acceptable to the "authority having jurisdiction."

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

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

NOTE: The phrase "authority having jurisdiction" is used in NFPA documents in a broad manner since jurisdictions and "approval" agencies vary as do their responsibilities. Where public safety is primary, the "authority having jurisdiction" may be a federal, state, local or other regional department or individual such as a fire chief, fire marshal, chief of a fire prevention bureau, labor department, health department, building official, electrical inspector, or others having statutory authority. For insurance purposes, an insurance inspection department, rating bureau, or other insurance company representative may be the "authority having jurisdiction." In many circumstances the property owner or his designated agent assumes the role of the "authority having jurisdiction": at government installations, the commanding officer or departmental official may be the "authority having jurisdiction."

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 may be either free-standing 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 (park, estate, subdivision, etc.).

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 not including 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 acceptable to the "authority having jurisdiction" and concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.

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

NOTE: The means for identifying listed equipment may vary for each organization concerned with product evaluation, some of which do not recognize equipment as listed unless it is also labeled. The "authority having jurisdiction" should utilize the system employed by the listing organization to identify a listed product.

Manufactured Home. A structure, transportable in one or more sections, that, in the traveling mode, is 8 body feet (2.4 m) or more in width and 40 body feet (12 m) or more in length or, when erected on site, is 320 or more square feet (28.8 m²), and that is built on a permanent chassis and designed to be used as a dwelling with or

without a permanent foundation when connected to the required utilities, and includes the plumbing, heating, air conditioning, and electrical systems contained therein.

NOTE: Manufactured homes were formerly referred to as "mobile homes" or "trailer coaches."

Manufactured Home Accessory Building or Structure. A building or structure that is an addition to or supplements the facilities provided in a manufactured home. It is not a self-contained, separate, habitable building or structure. Examples are 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 the floor elevated more than 8 in. (203 mm) above grade.

Ramada. Any free-standing 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, *Standard for the Storage and Handling of Liquefied Petroleum Gases*. NFPA 31, *Standard for Installation of Oil Burning Equipment*, shall apply to oil fuel-burning systems and shall conform to the criteria of the authority having jurisdiction.

NOTE: Gas piping systems (natural gas, manufactured gas, liquefied petroleum gas in the vapor phase, liquefied petroleum gas-air mixtures, or mixtures of these gases) owned, operated, and maintained by a public utility are exempt from the provisions of this standard but are required to conform to 49 C.F.R., Part 192 (see 2-3.1.1).

2-1.2 Gas Supply Connections. Gas supply connections at sites, when 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 storage systems, the applicable provisions of NFPA 58, *Standard for the Storage and Handling of Liquefied Petroleum Gases*, 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.

Exception: The above requirements do not apply to gas supply connections for manufactured homes located on all-weather wood or 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.

NOTE: See also Sections 2-3 and 2-4, 2-3.2, and 2-4.5.

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, when 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 liquefied petroleum gas storage systems, the provisions of NFPA 58, *Standard for the Storage and Handling of Liquefied Petroleum Gases*, shall be followed.

2-2.1.2 Underground gas piping system installations shall follow, as applicable, the appropriate provisions of Section 5-3, and shall comply with the following:

(a) Gas piping shall not be installed underground beneath that portion of a manufactured home site reserved for the location of a manufactured home, or a manufactured home accessory building or structure, unless installed in open-ended gastight conduit. The conduit shall conform to the following:

1. The conduit shall be a pipe approved for installation underground beneath buildings and shall be not less than Schedule 40 pipe. The interior diameter of the conduit shall be not less than ½ in. (13 mm) larger than the outside diameter of the gas piping.

2. 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 and it shall be located on the outlet riser at a height of not less than 6 in. (152 mm) above grade. Such 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 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. When gas meters are installed, they shall not depend on the gas outlet riser for support, but shall be adequately supported by a post or bracket placed on a firm footing or other means providing equivalent support.

2-2.3.2 Location of Meters. Each meter installed shall be in an accessible location and shall be provided with unions or other fittings so that the meter is easily removable and replaceable 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.

NOTE: Manufactured home electrical service equipment should not be considered a source of ignition when it is not enclosed in the same compartment with a gas meter.

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 a liquefied petroleum gas container, the container service valve may 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.

NOTE: See also Sections 2-1, 2-4, 2-3.5, and 2-4.5.

2-3.1 Manufactured Home Community Gas Distribution and Supply Systems.

2-3.1.1 Manufactured Home Community Natural-Gas Distribution Systems. All underground metallic fuel piping systems shall comply with the cathodic protection requirements of 49 C.F.R., Parts 191 and 192.

NOTE 1: The Natural Gas Pipeline Safety Act of 1979 has the effect of requiring that all gas distribution system operators must adhere to the referenced title. Any master-metered gas distribution system through which a manufactured home community is supplied gas, and which, in turn, distributes the gas to the ultimate users (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."

NOTE 2: Attention is also called to 49 C.F.R., Part 191, prescribing requirements for the reporting of gas leaks that are not intended by the operator.

NOTE 3: *Code of Federal Regulations*, Title 49, Transportation, Parts 100-199, revised as of October 1, 1986, is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. The American Society of Mechanical Engineers (345 East 47th Street, New York, NY 10017) publishes the ASME Guide for Gas Transmission and Distribution Piping Systems, which contains C.F.R., Title 49, Part 192, along with other useful technical information.

NOTE 4: *The Handbook on Natural Gas Pipeline Safety in Residential Areas Served by Master Meters* is published by the Superintendent of Documents, U.S. Government Printing Office. It 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."

2-3.1.2 Liquefied Petroleum Gas Supply Systems. When ten or more customers are served by one liquefied

petroleum gas supply system, the installation shall be in accordance with 49 C.F.R., Part 192, *Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards*. For other systems and for the storage and handling of liquefied petroleum gas, NFPA 58, *Standard for the Storage and Handling of Liquefied Petroleum Gases*, shall be followed.

NOTE: See also 2-3.2.

2-3.1.3 Installation of Cathodic Protection Systems. Where required by the federal standard cited in 2-3.1.1, cathodic protection shall be installed for corrosion control of buried or submerged metallic gas piping [see also 2-3.1.6(a) and (b)].

2-3.1.4 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 2-3.1.4.

Table 2-3.1.4 Demand Factors for Use in Calculating Gas Piping Systems in Manufactured Home Communities

No. of Manufactured Home Sites	Btu Per Hour 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 should be considered.

2-3.1.5 Gas Pipe Sizing and Pressure.

(a) 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.

(b) When all connected appliances are operated at their rated capacity, the supply pressure shall be not less than 4 oz per sq in. (7-in. water column) (1743 Pa). The gas supply pressure shall not exceed 8 oz per sq in. (14-in. water column) (3486 Pa).

2-3.1.6 Gas Piping Materials.

(a) *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 may be used with gases not corrosive to such material. Steel tubing shall comply with ANSI/ASTM A539, *Specification for Electric-Resistance-Welded Coiled Steel Tubing for Gas and Fuel*

Oil Lines, or ANSI/ASTM A254, *Specification for Copper Brazed Steel Tubing*. Copper tubing shall comply with ANSI/ASTM B88, *Specification for Seamless Copper Water Tubing*, (Type K or L) or ANSI/ASTM B280, *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 cubic feet of gas.

(b) *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, machine applied, and conform to recognized standards. Field wrapping shall provide equivalent protection and is restricted to those short sections and fittings necessarily stripped for threading or welding. Risers shall be coated or wrapped to a point at least 6 in. (152 mm) above ground.

(c) *Plastic*. Plastic piping shall only be used underground and shall meet the requirements of ASTM D2513, *Thermoplastic Gas Pressure Pipe, Tubing, and Fittings*, or ASTM D2517, *Reinforced Epoxy Resin Gas Pressure Pipe and Fittings*, and shall meet the design pressure and design limitations of 49 C.F.R., Part 192.123 and shall otherwise conform to the installation requirements thereof.

2-3.1.7 Gas Piping Installations.

(a) *Minimum Burial Below Ground Level and Clearances*. All gas piping installed below ground 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.

(b) *Metallic Gas Piping*.

1. *Plan Approval Required*. 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 C.F.R., Part 192.

2. *When Cathodic Protection Is Designed Only to Protect Underground Gas Piping*. When 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. When 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.

3. *When Cathodic Protection is Designed to Protect All Underground Metallic Systems*. When 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.

(c) *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 plastic pipe-locating wire shall be copper, not less 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.

(d) *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 a liquefied petroleum gas container.

2-3.2 Liquefied Petroleum Gas Equipment. LP-gas equipment shall be installed in accordance with the applicable provisions of NFPA 58, *Standard for the Storage and Handling of Liquefied Petroleum Gases*.

The referenced standard, NFPA 58, includes provisions on: 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.

2-3.3 Oil Supply. The following three methods of supplying oil to an individual manufactured home site shall be permitted:

(a) Supply from an outside underground tank (*see 2-4.6*).

(b) 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*.

(c) Supply from an outside aboveground tank (*see 2-4.6*).

2-3.4 Minimum Oil Supply Tank Size. Oil supply tanks shall have a minimum capacity equal to 20 percent of the average annual oil consumption. [Sixty gal (230 l) ICC-5 shipping containers or drums are not recommended, except for areas with less than 1,800 degree-days.]

2-3.5 Oil Supply Connections — General. Oil supply connections at manufactured home stands, when 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 systems 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.

NOTE: The flexible connector should be installed to provide some slack.

2-4.2 Use of Approved Pipe and Fittings of Extension. When 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 be adequately supported at no more than 4-ft (1.22-m) intervals to the manufactured home.

2-4.3 Mechanical Protection. Where subject to physical damage, all gas outlet risers, regulators, meters, valves, or other exposed equipment shall be protected against accidental damage.

NOTE: Such protection may consist of posts, fencing, or other permanent barriers.

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 may be 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 with air only 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 position.

(a) The test shall consist of air pressure at not less than 10 in. nor more than 14 in. water column (6 to 8 oz per sq in.) (2490 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 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 gage, or gage calibrated in either water in. or psi with increments of either $\frac{1}{10}$ in. or $\frac{1}{10}$ psi, as applicable. Upon satisfactory completion of the test, the manufactured home gas supply connector shall be installed, and the connections tested with soapy water or bubble solution.

WARNING: Do Not Overpressurize the Fuel Gas Piping System! Pressurization beyond the maximums specified may result in damage to valves, regulators, appliances, etc.

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

2-4.6 Oil Tanks. Not more than one 660 gal (2500 l) tank or two tanks of 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 Appendix A of NFPA 31, *Standard for the Installation of Oil Burning Equipment*; but when so con-

nected, they 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*. Chapter 2 of the referenced standard includes provisions on the design and construction of tanks, installation of underground tanks, outside aboveground tanks not larger than 660 gal (2500 l), and location with respect to adjacent buildings and adjoining property lines.

NOTE: These provisions do not apply to centralized oil distribution systems (see 2-3.5 and 2-6.2 of this code). See also NFPA 31, *Standard for the Installation of Oil Burning Equipment*.

2-4.6.2 A tank not larger than 60 gal (230 l) capacity shall be permitted to be a DOT-5 shipping container (drum), and so marked, or a tank meeting the provisions of Standard UL 80, *Steel Inside Tank for Oil Burner Fuel*, 1980. Tanks other than DOT-5 shipping containers having a capacity of not more than 660 gal (2500 l) shall meet the provisions of Standard UL 80. Pressure tanks shall be built in accordance with Section VIII of the *ASME Boiler and Pressure Vessel Code*, Code for Unfired Pressure Vessels.

2-4.6.3 Tanks as described in 2-4.6 and 2-4.6.2 may be located adjacent to buildings, but shall be located not less than 10 ft (3.05 m) from a property line that may be built upon.

2-4.6.4 Tanks not larger than 660 gal (2500 l) capacity shall be equipped with an open vent not smaller than 1½ in. (38 mm) iron pipe size; tanks with a 500 gal (1900 l) or less capacity shall have a vent of 1¼ in. (32 mm) iron pipe size.

2-4.6.5 Tanks shall be provided with a means to determine the liquid level.

NOTE: See Section 3-6 of NFPA 31, *Standard for the Installation of Oil Burning Equipment* (ANSI).

2-4.6.6 The fill opening shall be of such size and so located to permit ready filling in a manner that will avoid spillage.

2-5 Manufactured Home Accessory Building Fuel Supply Systems.

2-5.1 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, *Standard for the Storage and Handling of Liquefied Petroleum Gases*. 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's Fuel Supply Systems.

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, *Standard for the Storage and Handling of Liquefied Petroleum Gases*.

2-6.2 Manufactured Home Community Oil Supply Systems.

2-6.2.1 General. Oil-burning equipment and installations within a manufactured home community shall be designed and constructed in accordance with the applicable codes adopted by the authority having jurisdiction. Where the state or other political subdivision does not assume jurisdiction, such installations shall be designed and constructed in accordance with the applicable provisions of the standard referenced in 2-3.5.

2-6.3 Oil-Burning Equipment and Installation. Oil-burning equipment and installations within a building constructed in accordance with the local building code or a nationally recognized building code in a manufactured home community 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 installations 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

3-1 Site and Community Electrical Equipment and Installations.

3-1.1 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 and Firesafety

4-1 Responsibility for life and firesafety within manufactured home communities is 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 including, but not limited to, street names, site separation lines, site numbers, water supplies for fire protection personnel, fire alarms, and utility disconnects.

Each street name shall be clearly marked by signs, and each site marked for identification in a uniform manner clearly visible from the street serving the site.

4-2 Manufactured Home Site Firesafety Requirements.

4-2.1 Firesafety 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 one-hour fire rating or the structures are separated by a one-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 electrical cables, gas piping, water piping, and sewer lines buried underground along the periphery or 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.

NOTE: This requirement is to preclude possible damages to such underground services by the use of ground anchors, installations of skirting (underfloor enclosures), plantings, foundations for steps at access doors, etc.

4-2.3 Manufactured Home Installations.

4-2.3.1 Installation Instructions. Installations of all manufactured homes, including the support system and connections 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.

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

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

4-2.3.2 Approved Materials Required. All manufactured home utility services shall be connected to the supply sources only with approved materials.

4-2.4 Egress. Any manufactured home, accessory building, structure, or community building shall be located and maintained so that any required egress window or door is 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.

4-3.1.2 Materials, Fixtures, Devices, Fittings. Materials, fixtures, devices, and fittings, and their installation shall conform to nationally recognized standards.

4-3.2 Incinerators and Rubbish Burning.

4-3.2.1 Burning of rubbish within a community shall not be permitted unless specifically permitted by the authority having jurisdiction.

4-3.2.2 Incinerators, when permitted by the authority having jurisdiction, shall be constructed in accordance with NFPA 82, *Standard on Incinerators, Waste and Linen Handling Systems and Equipment*.

4-3.2.3 Incinerators, when 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 of the community and individual sites shall be maintained 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 Detection Systems in Community Buildings. Fire detection and alarm systems installed in community buildings shall be installed in accordance with NFPA 72A, *Standard for the Installation, Maintenance, and Use of Local Protective Signaling Systems for Guard's Tour, Fire Alarm, and Supervisory Service*.

NOTE: See NFPA 71, *Standard for the Installation, Maintenance, and Use of Signaling Systems for Central Station Service*; NFPA 72B, *Standard for the Installation, Maintenance, and Use of Auxiliary Protective Signaling Systems for Fire Alarm Service*; NFPA 72C, *Standard for the Installation, Maintenance, and Use of Remote Station Protective Signaling Systems*; or NFPA 72D, *Standard for the Installation, Maintenance, and Use of Proprietary Protective Signaling Systems*, for other suitable types of fire protective signaling systems.

4-3.4.2 Public Fire Alarm Services. Street fire alarm services for the community, when provided, 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. 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 permit the effective operation of two 1½-in. (38-mm) hose streams on any fire in a building. The supply may be derived from hydrants connected to an underground water supply system, a reservoir or water supply with a source of not less than 3,000 gal (11,360 l) (accessible fire department

drafting operations), or 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/s), constructed in accordance with NFPA 1901, *Standard for Automotive Fire Apparatus*.

Hydrants, when provided, shall be located along the community streets or public ways readily accessible for fire department use and located within 500 ft (152.40 m) of all homes and buildings. Hydrant-hose coupling threads shall be national standard threads (see NFPA 1963, *Standard for Screw Threads and Gaskets for Fire Hose Connections*) or shall conform to those used by the local fire department if different from those specified in the referenced standard.

4-3.6 Manufactured Home and Community Firesafety Requirements.

4-3.6.1 Use and Maintenance of Space Under Manufactured Homes, Accessory Buildings, or Structures. The space under manufactured homes and accessory buildings and structures shall not be used for the storage of combustible materials nor for the storage or placement therein of flammable liquids, gases, or liquid- or gas fuel-powered equipment (see *Appendix B*).

4-3.6.2 Emergency Information. The requirements of this section shall be printed and posted in conspicuous places in the community and shall contain the following information.

(a) List the following phone numbers:

1. Fire Department.
2. Police Department or Sheriff's Office.
3. Community Office.
4. The person responsible for operation and maintenance.

(b) List the following locations:

1. Nearest fire alarm box, when available.
2. Nearest public telephone.
3. Address of community.

4-3.6.3 Portable Fire Extinguishers. Portable fire extinguishers, when required or installed, shall be of the type and size required by NFPA 10, *Standard for Portable Fire Extinguishers*.

NOTE: It is recommended that each building owner provide a listed portable fire extinguisher suitable for handling incipient fire in the building. A listed extinguisher labeled as suitable for class A, B, and C fires (multipurpose dry chemical-type) is recommended. The provision on each site of a ¾-in. (19-mm) nominal valved water outlet designed for connecting a ¾-in. (19-mm) nominal female swivel hose connection for fire suppression use is desirable when practical and if protected against freezing.

4-3.6.4 Life Safety from Fire. The provisions of NFPA 101®, *Life Safety Code*®, regarding construction, protection, and occupancy features of community buildings to minimize danger to life from fire, smoke, or panic shall be followed, as applicable, with special attention given the number, size, and arrangement of exit facilities in community buildings used as places of public assembly.

4-3.6.5 Portable Fire Fighting Equipment. 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 Firesafety 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 not be located 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. When 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 be not 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 document and shall be considered part of the requirements of this document. The edition indicated for each reference shall be the current edition as of the date of the NFPA issuance of this document. These references shall be listed separately to facilitate updating to the latest edition by the user.

5-1.1 NFPA Publications. National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

NFPA 10-1984, *Standard for Portable Fire Extinguishers*

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

NFPA 54-1984, *National Fuel Gas Code*

NFPA 58-1986, *Standard for the Storage and Handling of Liquefied Petroleum Gases*.

NFPA 70-1987, *National Electrical Code*

NFPA 72A-1987, *Standard for the Installation, Maintenance, and Use of Local Protective Signaling Systems for Guard's Tour, Fire Alarm, and Supervisory Service*

NFPA 82-1983, *Standard on Incinerators, Waste and Linen Handling Systems and Equipment*

NFPA 101-1985, *Life Safety Code*

NFPA 1221-1984, *Standard for the Installation, Maintenance, and Use of Public Fire Service Communication Systems*

5-1.2 Other Publications.

5-1.2.1 U.S. Government Publication. U.S. Government Printing Office, Superintendent of Documents, Washington, DC 20402.

Title 49, *Code of Federal Regulations*, Parts 191 and 192, October 1, 1986.

5-1.2.2 ASME Publication. American Society of Mechanical Engineers, 345 East 47th Street, New York, Ny 10017.

ASME Boiler and Pressure Vessel Code, 1980.

5-1.2.3 ASTM Publications. American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

ANSI/ASTM A539-85, *Specification for Electric-Resistance-Welded Coiled Steel Tubing for Gas and Fuel Oil Lines*

ASTM B88-1981, *Specification for Seamless Copper Water Tubing*

ASTM A254-84, *Specification for Copper Brazed Steel Tubing*

ASTM B280-1983, *Specification for Seamless Copper Tubing for Air Conditioning and Refrigeration Field Service*

ASTM D2513-85, *Thermoplastic Gas Pressure Pipe, Tubing, and Fittings*

ASTM D2517-81, *Reinforced Epoxy Resin Gas Pressure Pipe and Fittings*.

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

UL 80-1980. *Steel Inside Tank for Oil Burner Fuel*.

Appendix A Manufactured Home Community

Action for Firesafety

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

A-1 Purpose of Appendix A. The purpose of this appendix is to give firesafety guidance for the manufactured home community.

A-2 Responsibilities of the Community Management.

Community management should prepare the type of material detailed herein with the cooperation of the responsible local fire protection authority.

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

The objective is to give information to the community's manufactured home owner/occupants and to encourage their cooperation in the protection of life and property from fire.

How to Report a Fire. Give specific instructions to owners on how to report a fire including: name of mobile

community, its location, and identification of involved mobile home site.

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

Care and Maintenance of Equipment.

Fire Fighting Equipment. Portable fire extinguishers (and/or other fire fighting equipment) are maintained on the premises and the nearest emergency equipment is located _____.

NOTE: Give full directions as to their location.

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

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

Appendix B Responsibilities of the Manufactured Home Resident

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

B-1 The resident should comply with all applicable requirements of this standard and should maintain his/her mobile home site, its facilities, and its equipment in good repair and in a firesafe condition.

Procedures in Case of Fire. In case of fire in a home, the home owner should do these things in the following order:

- (1) Get all occupants out of the home.
- (2) Call the Fire Department or sound the alarm. The important thing to do is to get professional fire fighters to the fire as promptly as possible.

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

LP-Gas Containers. In addition to mounted containers, a home may have two additional vessels installed on the lot. The home may be served by either the vehicle containers or 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, *Standard for the Storage and Handling of Liquefied Petroleum Gases*.

Charging of Vessels. Liquefied petroleum gas vessels should be charged in accordance with the applicable provisions of NFPA 58, *Standard for the Storage and Handling of Liquefied Petroleum Gases*.

Prohibited Location of Vessel. No liquefied petroleum gas vessel should be stored or located inside of or beneath any storage cabinet, cabana, awning, carport, ramada, home, or any other structure in a community.

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 mobile 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.

Home Inspections. If an owner would like to have a voluntary inspection of his/her home, he/she should notify the fire department.

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

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

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

Appendix C Referenced Publications

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

C-1.1 NFPA Publications. National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

NFPA 71-1987, *Standard for the Installation, Maintenance, and Use of Signaling Systems for Central Station Service*

NFPA 72B-1986, *Standard for the Installation, Maintenance, and Use of Auxiliary Protective Signaling Systems for Fire Alarm Service*

NFPA 72C-1986, *Standard for the Installation, Maintenance, and Use of Remote Station Protective Signaling Systems*

NFPA 72D-1986, *Standard for the Installation, Maintenance, and Use of Proprietary Protective Signaling Systems*

NFPA 72E-1987, *Standard on Automatic Fire Detectors*

NFPA 1901-1985, *Standard for Automotive Fire Apparatus*

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

Index

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- | | | | |
|------------|---|------------|--|
| -A- | <p>Alarm systems 4-3.4</p> <p>Arrangement of homes 4-1.1</p> <p>Awnings</p> <p> Definition 1-2</p> | -F- | <p>Fires</p> <p> Procedures, in case of B-1</p> <p> Reporting A-2</p> <p>Firesafety Chap. 4</p> <p> Accessory buildings or structures 4-4</p> <p> Community buildings 4-3</p> <p> Community responsibilities 4-1, 4-3.2, 4-3.6</p> <p> Home site requirements 4-2</p> <p> Manufactured home community action for App. A</p> <p> Resident requirements 4-2, 4-3.6, App. B</p> <p>Fuel supply systems Chap. 2</p> |
| -B- | <p>Buildings</p> <p> Accessory, or structures</p> <p> Definition 1-2</p> <p> Firesafety requirements 4-4</p> <p> Fuel supply system 2-5</p> <p> Community</p> <p> Definition 1-2</p> <p> Firesafety requirements 4-3</p> <p> Fuel supply system 2-6</p> <p> Recreation A-2</p> | -G- | <p>Garage</p> <p> Definition 1-2</p> <p>Gas supply systems Chap. 2</p> |
| -C- | <p>Cabanas</p> <p> Definition 1-2</p> <p>Carpports</p> <p> Definition 1-2</p> <p>Cathodic protection systems,</p> <p>installation of 2-3.1.3, 2-3.1.7(b)</p> <p>Clothes driers A-2</p> <p>Community</p> <p> Electrical equipment and installation Chap. 3</p> <p> Firesafety 4-3.6, App. A</p> <p> Management responsibilities A-2</p> <p> Gas distribution and supply 2-3.1</p> <p> Oil supply system 2-6.2</p> <p>Community buildings see Buildings</p> <p>Connections</p> <p> Electrical Chap. 4</p> <p> Gas supply 2-1.2, 2-1.3</p> <p> Oil supply 2-3.5</p> <p>Connectors, gas supply 2-4.1</p> <p> Definition 1-2</p> | -H- | <p>Hazards, fire 4-3.3, B-1</p> <p>Home sites see Sites, manufactured home</p> <p>Hydrants 4-3.5</p> |
| -D- | <p>Detection systems 4-3.4</p> <p>Dwelling units</p> <p> Definition 1-2</p> | -I- | <p>Incinerators 4-3.2</p> <p>Inspections B-1, B-2</p> <p>Installation, manufactured homes 4-2.3</p> |
| -E- | <p>Egress 4-2.4</p> <p>Electrical services Chap. 4</p> <p>Emergency information 4-3.6.2</p> <p>Equipment, fire fighting</p> <p> Care and maintenance A-2</p> <p> Portable 4-3.6.5</p> <p>Exits 4-4.2</p> <p>Extinguishers, portable fire 4-3.6.3, 4-3.6.5</p> | -L- | <p>Laundry rooms A-2</p> <p>Life safety 4-3.6.4</p> <p>Liquefied petroleum gas (LPG)</p> <p> Containers B-1</p> <p> Equipment 2-3.2</p> <p> Supply systems 2-3.1.2</p> |
| -M- | <p>Management, community</p> <p> Definition 1-2</p> <p> Responsibilities for firesafety App. A</p> <p>Manufactured homes</p> <p> Definition 1-2</p> <p> Installations 4-2.3</p> <p> Vertical positioning 4-2.1.2</p> <p>Meters, gas 2-2.3</p> <p>Mobile homes see Manufactured homes</p> | -O- | <p>Occupants see Residents</p> <p>Oil supply systems 2-3.3 thru 2-3.5, 2-6.2</p> |

Oil-burning equipment	2-6.2	Fuel distribution and supply	2-2, 2-3
		Space under manufactured homes, accessory buildings, or structures	4-3.6.1, B-2
-P-		Streets, community	4-1.1
Pipes		Definition	1-2
Extensions	2-4.2	Structure, manufactured home	see Buildings, accessory
Materials	2-3.1.6, 2-3.1.7(b)		
Sizing and pressure	2-3.1.5	-U-	
Piping systems		Tanks, oil storage	2-3.4, 2-4.6
Gas	Chap. 2	Tests, fuel gas piping	2-4.5
Oil	2-3.3 thru 2-3.5, 2-6.2	Traffic regulations	B-1
Underground	2-2.1.2, 2-3.1.7(a)	Trailer coaches	see Manufactured homes
Porches			
Definition	1-2	-U-	
		Utility lines, underground, marking of	4-2.2
-R-		Utility services	
Ramadas		Connection and disconnection	A-2
Definition	1-2	Inspection	B-2
Regulators, atmospherically controlled	2-4.4		
Residents, responsibilities of	4-2, 4-3.6, App. B	-V-	
Rooms, habitable		Valves	
Definition	1-2	Gas meter shutoff	2-2.4
Rubbish burning	4-3.2	Gas piping system	2-2.2, 2-3.4(d)
		Vertical positioning, manufactured homes	4-2.1.2
-S-			
Scope of standard	1-1	-W-	
Sites, manufactured home		Water supplies, minimum requirements	4-3.5
Access to	4-1.1		
Definition	1-2		
Electrical equipment and installation	Chap. 3		
Firesafety requirements	4-1, B-1		

SUBMITTING PROPOSALS ON NFPA TECHNICAL COMMITTEE DOCUMENTS

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

INSTRUCTIONS

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

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

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

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

FORM FOR PROPOSALS ON NFPA TECHNICAL COMMITTEE DOCUMENTS

Mail to: Secretary, Standards Council
National Fire Protection Association, Batterymarch Park, Quincy, Massachusetts 02269

Date 5/18/85 Name John B. Smith Tel. No. 617-555-1212

Address 9 Seattle St., Seattle, WA 02255

Representing (Please indicate organization, company or self) Fire Marshals Assn. of North America

1. a) Document Title: Protective Signaling Systems NFPA No. & Year NFPA 72D

b) Section/Paragraph: 2-7.1 (Exception)

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

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

Delete exception.

4. Statement of Problem and Substantiation for Proposal:

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

- 5. This Proposal is original material.
- This Proposal is not original material; its source (if known) is as follows: _____

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

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John B. Smith

Signature