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Subtitle B—Regulations
Relating to Housing and
Urban Development
(Continued)

CHAPTER XX—OFFICE OF ASSISTANT
SECRETARY FOR HOUSING—FEDERAL
HOUSING COMMISSIONER, DEPARTMENT OF
HOUSING AND URBAN DEVELOPMENT

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AUTHORITY: 42 U.S.C. 3535(d), 5403, and 5424.

SOURCE: 40 FR 58752, Dec. 18, 1975, unless otherwise noted. Redesignated at 44 FR 20679, Apr. 6, 1979.

Subpart A—General**§ 3280.1 Scope.**

This standard covers all equipment and installations in the design, construction, transportation, fire safety, plumbing, heat-producing and electrical systems of manufactured homes which are designed to be used as dwelling units. This standard seeks to the maximum extent possible to establish performance requirements. In certain instances, however, the use of specific requirements is necessary.

[58 FR 55002, Oct. 25, 1993]

§ 3280.2 Definitions.

Definitions in this subpart are those common to all subparts of the standard and are in addition to the definitions provided in individual parts. The definitions are as follows:

Approved, when used in connection with any material, appliance or construction, means complying with the

requirements of the Department of Housing and Urban Development.

Bay window—a window assembly whose maximum horizontal projection is not more than two feet from the plane of an exterior wall and is elevated above the floor level of the home.

Certification label means the approved form of certification by the manufacturer that, under § 3280.8, is permanently affixed to each transportable section of each manufactured home manufactured for sale in the United States.

Dwelling unit means one or more habitable rooms which are designed to be occupied by one family with facilities for living, sleeping, cooking and eating.

Equipment includes materials, appliances, devices, fixtures, fittings or accessories both in the construction of, and in the fire safety, plumbing, heat-producing and electrical systems of manufactured homes.

Federal manufactured home construction and safety standard means a reasonable standard for the construction, design, and performance of a manufactured home which meets the needs of the public including the need for quality, durability, and safety.

Installations means all arrangements and methods of construction, as well as fire safety, plumbing, heat-producing and electrical systems used in manufactured homes.

Labeled means a label, symbol or other identifying mark of a nationally recognized testing laboratory, inspection agency, or other organization concerned with product evaluation that maintains periodic inspection of production of labeled equipment or materials, and by whose labeling is indicated compliance with nationally recognized standards or tests to determine suitable usage in a specified manner.

Length of a manufactured home means its largest overall length in the traveling mode, including cabinets and other projections which contain interior space. Length does not include bay windows, roof projections, overhangs, or eaves under which there is no interior space, nor does it include drawbars, couplings or hitches.

Listed or certified means included in a list published by a nationally recognized testing laboratory, inspection agency, or other organization 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 nationally recognized standards or has been tested and found suitable for use in a specified manner.

Manufacturer means any person engaged in manufacturing or assembling manufactured homes, including any person engaged in importing manufactured homes for resale.

Manufactured home means a structure, transportable in one or more sections, which in the traveling mode, is eight body feet or more in width or forty body feet or more in length, or, when erected on site, is three hundred twenty or more square feet, and which 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. Calculations used to determine the number of square feet in a structure will be based on the structure's exterior dimensions measured at the largest horizontal projections when erected on site. These dimensions will include all expandable rooms, cabinets, and other projections containing interior space, but do not include bay windows. This term includes all structures which meet the above requirements except the size requirements and with respect to which the manufacturer voluntarily files a certification pursuant to § 3282.13 and complies with the standards set forth in part 3280. Nothing in this subsection should be interpreted to mean that a *manufactured home* necessarily meets the requirements of HUD's Minimum Property Standards (HUD Handbook 4900.1) or that it is automatically eligible for financing under 12 U.S.C. 1709(b).

Manufactured home construction means all activities relating to the assembly and manufacture of a manufactured home including, but not limited

to, those relating to durability, quality and safety.

Manufactured home safety means the performance of a manufactured home in such a manner that the public is protected against any unreasonable risk of the occurrence of accidents due to the design or construction of such manufactured home, or any unreasonable risk of death or injury to the user or to the public if such accidents do occur.

Registered Engineer or Architect means a person licensed to practice engineering or architecture in a state and subject to all laws and limitations imposed by the state's Board of Engineering and Architecture Examiners and who is engaged in the professional practice of rendering service or creative work requiring education, training and experience in engineering sciences and the application of special knowledge of the mathematical, physical and engineering sciences in such professional or creative work as consultation, investigation, evaluation, planning or design and supervision of construction for the purpose of securing compliance with specifications and design for any such work.

Secretary means the Secretary of Housing and Urban Development, or an official of the Department delegated the authority of the Secretary with respect to title VI of Pub. L. 93-383.

State includes each of the several States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, the Virgin Islands, the Canal Zone, and American Samoa.

Width of a manufactured home means its largest overall width in the traveling mode, including cabinets and other projections which contain interior space. Width does not include bay windows, roof projections, overhangs, or eaves under which there is no interior space.

[40 FR 58752, Dec. 18, 1975, as amended at 42 FR 960, Jan. 4, 1977. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 47 FR 28092, June 29, 1982; 58 FR 55002, Oct. 25, 1993; 61 FR 5216, Feb. 9, 1996]

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§ 3280.3 Manufactured home procedural and enforcement regulations and consumer manual requirements.

A manufacturer must comply with the requirements of this part 3280, part 3282 of this chapter, and 42 U.S.C. 5416.

[61 FR 18250, Apr. 25, 1996]

§ 3280.4 Incorporation by reference.

(a) The specifications, standards and codes of the following organizations are incorporated by reference in 24 CFR part 3280 (this Standard) pursuant to 5 U.S.C. 552(a) and 1 CFR part 51 as though set forth in full. The incorporation by reference of these standards has been approved by the Director of the Federal Register. Reference standards have the same force and effect as this Standard (24 CFR part 3280) except that whenever reference standards and this Standard are inconsistent, the requirements of this Standard prevail to the extent of the inconsistency.

(b) The abbreviations and addresses of organizations issuing the referenced standards appear below. Reference standards which are not available from their producer organizations may be obtained from the Office of Manufactured Housing and Regulatory Functions, Manufactured Housing and Construction Standards Division, U.S. Department of Housing and Urban Development, 451 Seventh Street, SW., room B-133, Washington, DC 20410.

AA—Aluminum Association, 900 19th Street NW., suite 300, Washington, DC 20006.
AAMA—American Architectural Manufacturers Association, 1540 East Dundee Road, Palatine, Illinois 60067
AFPA [previously (N)FPA]—American Forest and Paper Association, 1250 Connecticut Avenue, NW., Washington, DC 20036 [previously named (N)FPA-National Forest Products Association]
AGA—American Gas Association, 8501 East Pleasant Valley Road, Cleveland, Ohio 44131
AISC—American Institute of Steel Construction, One East Wacker Drive, Chicago, IL 60601
AISI—American Iron and Steel Institute, 1101 17th Street, NW., Washington, DC 20036
AITC—American Institute of Timber Construction, 11818 SE Mill Plain Blvd., suite 415, Vancouver, Washington 98684
ANSI—American National Standards Institute, 1430 Broadway, New York, New York 10018

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APA—American Plywood Association, P.O. Box 11700, Tacoma, Washington 98411
ARI—Air Conditioning and Refrigeration Institute, 1501 Wilson Blvd., 6th Floor, Arlington, VA 22209-2403
ASCE—American Society of Civil Engineers, 345 East 47th Street, New York, New York 10017-2398
ASHRAE—American Society of Heating, Refrigeration and Air Conditioning Engineers, 1791 Tulle Circle, NE., Atlanta, Georgia 30329
ASME—American Society of Mechanical Engineers, 345 East 47th Street, New York, New York 10017
ASSE—American Society of Sanitary Engineering, P.O. Box 40362, Bay Village, Ohio 44140
ASTM—American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103
CISPI—Cast Iron Soil Pipe Institute, 5959 Shallowford Road, suite 419, Chattanooga, TN 37421
DOC—U.S. Department of Commerce, National Institute of Standards and Technology, Office of Engineering Standards, room A-166, Technical Building, Washington, DC 20234
FS—Federal Specifications, General Services Administration, Specifications Branch, room 6039, GSA Building, 7th and D Streets, SW., Washington, DC 20407
HPVA (previously HPMA)—Hardwood Plywood and Veneer Association, P.O. Box 2789, Reston, VA 22090 (previously named HPMA Hardwood Plywood Manufacturers Association)
HUD-FHA—Department of Housing and Urban Development, 451 Seventh Street, SW., Washington, DC 20410
HUD-USER Department of Housing and Urban Development, HUD User, P.O. Box 280, Germantown, MD 20874
IAPMO—International Association of Plumbing and Mechanical Officials, 20001 Walnut Drive South, Walnut, CA 91784-2825
IITRI—IIT Research Institute, 10 West 35th Street, Chicago, IL 60616
MIL—Military Specifications and Standards, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, Pennsylvania 19120
NFFPA—National Fire Protection Association, Batterymarch Park, Quincy, MA 02269
NPA—National Particleboard Association, 18928 Premiere Court, Gaithersburg, MD 20879
NSF—National Sanitation Foundation, P.O. Box 1468, Ann Arbor, MI 48105
NWWDA—National Wood Window and Door Association, 1400 E. Toughy Avenue, suite G-54, Des Plaines, IL 60018
SAE—Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, Pennsylvania 15096

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SJI—Steel Joist Institute, 1205 48th Avenue North, suite A, Myrtle Beach, SC 29577
TPI—Truss Plate Institute, 583 D’Onofrio Drive, suite 200, Madison, Wisconsin 53719
UL—Underwriters’ Laboratories, Inc., 333 Pfingsten Road, Northbrook, Illinois 60062

(c) The Department will enforce the listed editions of material incorporated by reference into this standard. If a later edition is to be enforced, the Department will publish a notice of change in the FEDERAL REGISTER.

[47 FR 49385, Nov. 1, 1982, as amended at 52 FR 47553, Dec. 15, 1987; 58 FR 55002, Oct. 25, 1993; 59 FR 15113, Mar. 31, 1994]

§ 3280.5 Data plate.

Each manufactured home shall bear a data plate affixed in a permanent manner near the main electrical panel or other readily accessible and visible location. Each data plate shall be made of material what will receive typed information as well as preprinted information, and which can be cleaned of ordinary smudges or household dirt without removing information contained on the data plate; or the data plate shall be covered in a permanent manner with materials that will make it possible to clean the data plate of ordinary dirt and smudges without obscuring the information. Each data plate shall contain not less than the following information:

(a) The name and address of the manufacturing plant in which the manufactured home was manufactured.

(b) The serial number and model designation of the unit, and the date the unit was manufactured.

(c) The statement:

This manufactured home is designed to comply with the Federal Manufactured Home Construction and Safety Standards in force at the time of manufacture.

(d) A list of the certification label(s) number(s) that are affixed to each transportable manufactured section under § 3280.8.

(e) A list of major factory-installed equipment, including the manufacturer’s name and the model designation of each appliance.

(f) Reference to the roof load zone and wind load zone for which the home is designed and duplicates of the maps as set forth in § 3280.305(c). This information may be combined with the

heating/cooling certificate and insulation zone map required by §§ 3280.510 and 3280.511. The Wind Zone Map on the Data Plate shall also contain the statement:

This home has not been designed for the higher wind pressures and anchoring provisions required for ocean/coastal areas and should not be located within 1500’ of the coastline in Wind Zones II and III, unless the home and its anchoring and foundation system have been designed for the increased requirements specified for Exposure D in ANS/ASCE 7-88.

(g) The statement:

This home has—has not—(appropriate blank to be checked by manufacturer) been equipped with storm shutters or other protective coverings for windows and exterior door openings. For homes designed to be located in Wind Zones II and III, which have not been provided with shutters or equivalent covering devices, it is strongly recommended that the home be made ready to be equipped with these devices in accordance with the method recommended in the manufacturers printed instructions.

(h) The statement: “Design Approval by”, followed by the name of the agency that approved the design.

[59 FR 2469, Jan. 14, 1994]

§ 3280.6 Serial number.

(a) A manufactured home serial number which will identify the manufacturer and the state in which the manufactured home is manufactured, must be stamped into the foremost cross member. Letters and numbers must be 3/8 inch minimum in height. Numbers must not be stamped into hitch assembly or drawbar.

§ 3280.7 Excluded structures.

Certain structures may be excluded from these Standards as modular homes under 24 CFR 3282.12.

[52 FR 4581, Feb. 12, 1987]

§ 3280.8 Waivers.

(a) Where any material piece of equipment, or system which does not meet precise requirements or specifications set out in the standard is shown, to the satisfaction of the Secretary, to meet an equivalent level of performance, the Secretary may waive the specifications set out in the Standard

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for that material, piece of equipment, or system.

(b) Where the Secretary is considering issuing a waiver to a Standard, the proposed waiver shall be published in the FEDERAL REGISTER for public comment, unless the Secretary, for good cause, finds that notice is impractical, unnecessary or contrary to the public interest, and incorporates into the waiver that finding and a brief statement of the reasons therefor.

(c) Each proposed and final waiver shall include:

(1) A statement of the nature of the waiver; and

(2) Identification of the particular standard affected.

(d) All waivers shall be published in the FEDERAL REGISTER and shall state their effective date. Where a waiver has been issued, the requirements of the Federal Standard to which the waiver relates may be met either by meeting the specifications set out in the Standard or by meeting the requirements of the waiver published in the FEDERAL REGISTER.

[58 FR 55003, Oct. 25, 1993]

§ 3280.9 Interpretative bulletins.

Interpretative bulletins may be issued for the following purposes:

(a) To clarify the meaning of the Standard; and

(b) To assist in the enforcement of the Standard.

[58 FR 55003, Oct. 25, 1993]

§ 3280.10 Use of alternative construction.

Requests for alternative construction can be made pursuant to 24 CFR 3282.14 of this chapter.

[58 FR 55003, Oct. 25, 1993]

§ 3280.11 Certification label.

(a) A permanent label shall be affixed to each transportable section of each manufactured home for sale or lease in the United States. This label shall be separate and distinct from the data plate which the manufacturer is required to provide under §3280.5 of the standards.

(b) The label shall be approximately 2 in. by 4 in. in size and shall be permanently attached to the manufactured

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home by means of 4 blind rivets, drive screws, or other means that render it difficult to remove without defacing it. It shall be etched on 0.32 in. thick aluminum plate. The label number shall be etched or stamped with a 3 letter designation which identifies the production inspection primary inspection agency and which the Secretary shall assign. Each label shall be marked with a 6 digit number which the label supplier shall furnish. The labels shall be stamped with numbers sequentially.

(c) The label shall read as follows:

As evidenced by this label No. ABC 000001, the manufacturer certifies to the best of the manufacturer's knowledge and belief that this manufactured home has been inspected in accordance with the requirements of the Department of Housing and Urban Development and is constructed in conformance with the Federal manufactured home construction and safety standards in effect on the date of manufacture. See date plate.

(d) The label shall be located at the tail-light end of each transportable section of the manufactured home approximately one foot up from the floor and one foot in from the road side, or as near that location on a permanent part of the exterior of the manufactured home unit as practicable. The road side is the right side of the manufactured home when one views the manufactured home from the tow bar end of the manufactured home.

[42 FR 960, Jan. 4, 1977. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 52 FR 47553, Dec. 15, 1987. Redesignated and amended at 58 FR 55003, Oct. 25, 1993]

Subpart B—Planning Considerations

§ 3280.101 Scope.

Subpart B states the planning requirements in manufactured homes. The intent of this subpart is to assure the adequacy of architectural planning considerations which assist in determining a safe and healthful environment.

§ 3280.102 Definitions.

(a) *Gross floor area* means all space, wall to wall, including recessed entries not to exceed 5 sq. ft. and areas under built-in vanities and similar furniture. Where the ceiling height is less than

that specified in §3280.104, the floor area under such ceilings shall not be included. Floor area of closets shall not be included in the gross floor area.

(b) *Habitable room* means a room or enclosed floor space arranged for living, eating, food preparation, or sleeping purposes not including bathrooms, foyers, hallways, and other accessory floor space.

(c) *Laundry area* means an area containing or designed to contain a laundry tray, clothes washer and/or clothes dryer.

§ 3280.103 Light and ventilation.

(a) *Lighting*. Each habitable room shall be provided with exterior windows and/or doors having a total glazed area of not less than 8 percent of the gross floor area.

(1) Kitchens, bathrooms, toilet compartments, laundry areas, and utility rooms may be provided with artificial light in place of windows.

(2) Rooms and areas may be combined for the purpose of providing the required natural lighting provided that at least one half of the common wall area is open and unobstructed, and the open area is at least equal to 10 percent of the combined floor area or 25 square feet whichever is greater.

(b) *Whole house ventilation*. Each manufactured home shall be capable of providing a minimum of 0.35 air changes per hour continuously or at an equivalent hourly average rate. The following criteria shall be adhered to.

(1) Natural infiltration and exfiltration shall be considered as providing 0.25 air changes per hour.

(2) The remaining ventilation capacity of 0.10 air change per hour or its hourly average equivalent shall be calculated using 0.035 cubic feet per minute per square foot of interior floor space. This ventilation capacity shall be in addition to any openable window area.

(3) The remaining ventilation capacity may be provided by: a mechanical system, or a passive system, or a combination passive and mechanical system. The ventilation system or provisions shall not create a positive pressure in Uo value Zones 2 and 3 or a negative pressure condition in Uo value Zone 1. Mechanical systems shall be

balanced. Combination passive and mechanical systems shall have adequately sized inlets or exhaust to release any unbalanced pressure. Passive systems shall have inlets and exhaust of sufficient size to alleviate unbalance pressure conditions under normal conditions. Temporary imbalances due to gusting or high winds are permitted.

(4) The ventilation system or provision shall exchange air directly with the exterior of the home, except it shall not draw or expel air with the space underneath the home. The ventilation system or provision shall not draw or expel air into the floor, wall, or ceiling/roof systems even if those systems are vented.

(5) The ventilation system or a portion thereof may be integral with the homes heating or cooling system. The system shall be capable of operating independently of the heating or cooling modes. A ventilation system that is integral with the heating or cooling system shall be listed as part of the heating and cooling system or listed as suitable for use therewith.

(6) A mechanical ventilation system, or mechanical portion thereof, shall be provided with a manual control and may be provided with automatic timers or humidistats.

(7) Substantiation of the ventilation capacity to provide 0.10 ACH shall be provided for a mechanical system, or a passive system, or a combination passive and mechanical system.

(c) *Additional ventilation*. (1) At least half of the minimum required glazed area in paragraph (a) of this section shall be openable directly to the outside of the manufactured home for unobstructed ventilation. These same ventilation requirements apply to rooms combined in accordance with §3280.103(a)(2).

(2) Kitchens shall be provided with a mechanical ventilation system that is capable of exhausting 100 cfm to the outside of the home. The exhaust fan shall be located as close as possible to the range or cook top, but in no case farther than 10 feet horizontally from the range or cook top.

(3) Each bathroom and separate toilet compartment shall be provided with a mechanical ventilation system capable of exhausting 50 cfm to the outside

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of the home. A separate toilet compartment may be provided with 1.5 square feet of openable glazed area in place of mechanical ventilation, except in Uo value Zone 3.

[58 FR 55003, Oct. 25, 1993]

§ 3280.104 Ceiling heights.

(a) Every habitable room and bathroom shall have a minimum ceiling height of not less than 7 feet, 0 inches for a minimum of 50 percent of the room's floor area. The remaining area may have a ceiling with a minimum height of 5 feet, 0 inches. Minimum height under dropped ducts, beams, etc. shall be 6 feet, 4 inches.

(b) Hallways and foyers shall have a minimum ceiling height of 6 feet, 6 inches.

§ 3280.105 Exit facilities; exterior doors.

(a) *Number and location of exterior doors.* Manufactured homes shall have a minimum of two exterior doors located remote from each other.

(1) Required egress doors shall not be located in rooms where a lockable interior door must be used in order to exit.

(2) In order for exit doors to be considered *remote* from each other, they must comply with all of the following:

(i) Both of the required doors must not be in the same room or in a group of rooms which are not defined by fixed walls.

(ii) *Single wide units.* Doors may not be less than 12 ft. c-c from each other as measured in any straight line direction regardless of the length of path of travel between doors.

(iii) *Double wide units.* Doors may not be less than 20 ft. c-c from each other as measured in any straight line direction regardless of the length of path of travel between doors.

(iv) One of the required exit doors must be accessible from the doorway of each bedroom without traveling more than 35 ft.

(b) *Door design and construction.* (1) Exterior swinging doors shall be constructed in accordance with §3280.405 the "Standard for Swinging Exterior Passage Doors for Use in Manufactured Homes". Exterior sliding glass doors shall be constructed in accordance with §3280.403 the "Standard for Windows

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and Sliding Glass Doors Used in Manufactured Homes".

(2) All exterior swinging doors shall provide a minimum 28 inch wide by 74 inch high clear opening. All exterior sliding glass doors shall provide a minimum 28 inch wide by 72 inch high clear opening.

(3) Each swinging exterior door other than screen or storm doors shall have a key-operated lock that has a deadlocking latch or a key-operated dead bolt with a passage latch. Locks shall not require the use of a key for operation from the inside.

(4) All exterior doors, including storm and screen doors, opening outward shall be provided with a safety door check.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 50 FR 9269, Mar. 7, 1985]

§ 3280.106 Exit facilities; egress windows and devices.

(a) Every room designed expressly for sleeping purposes, unless it has an exit door (*see* §3280.105), shall have at least one outside window or approved exit device which meets the requirements of §3280.404, the "Standard for Egress Windows and Devices for Use in Manufactured Homes."

(b) The bottom of the window opening shall not be more than 36 inches above the floor.

(c) Locks, latches, operating handles, tabs, and any other window screen or storm window devices which need to be operated in order to permit exiting, shall not be located in excess of 54 inches from the finished floor.

(d) Integral rolled-in screens shall not be permitted in an egress window unless the window is of the hinged-type.

[49 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 49 FR 36086, Sept. 14, 1984; 52 FR 4581, Feb. 12, 1987]

§ 3280.107 Interior privacy.

Bathroom and toilet compartment doors shall be equipped with a privacy lock.

§ 3280.108 Interior passage.

(a) Interior doors having passage hardware without a privacy lock, or with a privacy lock not engaged, shall

open from either side by a single movement of the hardware mechanism in any direction.

(b) Each manufactured home interior door, when provided with a privacy lock, shall have a privacy lock that has an emergency release on the outside to permit entry when the lock has been locked by a locking knob, lever, button, or other locking device on the inside.

§ 3280.109 Room requirements.

(a) Every manufactured home shall have at least one living area with not less than 150 sq. ft. of gross floor area.

(b) Rooms designed for sleeping purposes shall have a minimum gross square foot floor area as follows:

(1) All bedrooms shall have at least 50 sq. ft. of floor area.

(2) Bedrooms designed for two or more people shall have 70 sq. ft. of floor area plus 50 sq. ft. for each person in excess of two.

(c) Every room designed for sleeping purposes shall have accessible clothes hanging space with a minimum inside depth of 22 inches and shall be equipped with a rod and shelf.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, and further redesignated at 58 FR 55004, Oct. 25, 1993]

§ 3280.110 Minimum room dimensions.

The gross floor area required by § 3280.110 (a) and (b) shall have no clear horizontal dimension less than 5 feet except as permitted by § 3280.102(a).

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, and further redesignated at 58 FR 55004, Oct. 25, 1993]

§ 3280.111 Toilet compartments.

Each toilet compartment shall be a minimum of 30 inches in width, except, when the toilet is located adjacent to the short dimension of the tub, the distance from the tub to the center line of the toilet shall not be less than 12 inches. At least 21 inches of clear space shall be provided in front of each toilet.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, and further redesignated at 58 FR 55004, Oct. 25, 1993]

§ 3280.112 Hallways.

Hallways shall have a minimum horizontal dimension of 28 inches measured from the interior finished surface to the interior finished surface of the opposite wall. When appliances are installed in a laundry area, the measurement shall be from the front of the appliance to the opposite finished interior surface. When appliances are not installed and a laundry area is provided, the area shall have a minimum clear depth of 27 inches in addition to the 28 inches required for passage. In addition, a notice of the available clearance for washer/dryer units shall be posted in the laundry area. Minor protrusions into the minimum hallway width by doorknobs, trim, smoke detectors or light fixtures are permitted.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, and further redesignated at 58 FR 55004, Oct. 25, 1993]

§ 3280.113 Glass and glazed openings.

(a) *Windows and sliding glass doors.* All windows and sliding glass doors shall meet the requirements of § 3280.403 the "Standard for Windows and Sliding Glass Doors Used in Manufactured Homes".

(b) *Safety glazing.* Glazing in all entrance or exit doors, sliding glass doors, units (fixed or moving sections), unframed glass doors, unbacked mirrored wardrobe doors (*i.e.*, mirrors not secured to a backing capable of being the door itself), shower and bathtub enclosures and surrounds to a height of 6 feet above the bathroom floor level, storm doors or combination doors, and in panels located within 12 inches on either side of exit or entrance doors shall be of a safety glazing material. Safety glazing material is considered to be any glazing material capable of passing the requirements of Safety Performance Specifications and Methods of Test for Safety Glazing Materials Used in Buildings, ANSI Z97.1-1984.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 52 FR 4581, Feb. 12, 1987. Redesignated at 58 FR 55004, Oct. 25, 1993]

Subpart C—Fire Safety

SOURCE: 49 FR 32008, Aug. 9, 1984, unless otherwise noted.

§ 3280.201 Scope.

The purpose of this subpart is to set forth requirements that will assure reasonable fire safety to the occupants by reducing fire hazards and by providing measures for early detection.

§ 3280.202 Definitions.

The following definitions are applicable to subparts C, H, and I of the Standards:

Combustible material: Any material not meeting the definition of limited-combustible or non-combustible material.

Flame-spread rating: The measurement of the propagation of flame on the surface of materials or their assemblies as determined by recognized standard tests conducted as required by this subpart.

Interior finish: The surface material of walls, fixed or movable partitions, ceilings, columns, and other exposed interior surfaces affixed to the home's structure including any materials such as paint or wallpaper and the substrate to which they are applied. Interior finish does not include:

- (1) Trim and sealant 2 inches or less in width adjacent to the cooking range and in furnace and water heater spaces provided it is installed in accordance with the requirements of § 3280.203(b)(3) or (4), and trim 6 inches or less in width in all other areas;
- (2) Windows and frames;
- (3) Single doors and frames and a series of doors and frames not exceeding 5 feet in width;
- (4) Skylights and frames;
- (5) Casings around doors, windows, and skylights not exceeding 4 inches in width;
- (6) Furnishings which are not permanently affixed to the home's structure;
- (7) Baseboards not exceeding 6 inches in height;
- (8) Light fixtures, cover plates of electrical receptacle outlets, switches, and other devices;
- (9) Decorative items attached to walls and partitions (i.e., pictures, decorative objects, etc.) constituting no

more than 10% of the aggregate wall surface area in any room or space not more than 32 square feet in surface area, whichever is less;

(10) Plastic light diffusers when suspended from a material which meets the interior finish provisions of § 3280.203(b);

(11) Coverings and surfaces of exposed wood beams; and

(12) Decorative items including the following:

(i) Non-structural beams not exceeding 6 inches in depth and 6 inches in width and spaced not closer than 4 feet on center;

(ii) Non-structural lattice work;

(iii) Mating and closure molding; and

(iv) Other items not affixed to the home's structure.

Limited combustible: A material meeting:

(1) The definition of Article 2–3 or NFPA 220–1992; or

(2) 5/16-inch or thicker gypsum board.

Noncombustible material: A material meeting the definition of contained in NFPA 220–1992.

Single-station alarm device: An assembly incorporating the smoke detector sensor, the electrical control equipment, and the alarm-sounding device in one unit.

Smoke detector: A wall-mounted detector of the ionization chamber or photoelectric type which detects visible or invisible particles of combustion and operates from a 120V AC source of current.

[58 FR 55004, Oct. 25, 1993]

§ 3280.203 Flame spread limitations and fire protection requirements.

(a) *Establishment of flame spread rating.* The surface flame spread rating of interior-finish material shall not exceed the value shown in § 3280.203(b) when tested by “Standard Test Method for Surface Burning Characteristics of Building Materials, ASTM E 84–91a” except that the surface flame spread rating of interior-finish materials required by § 3280.203(b)(5) and (6) may be determined by using the “Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source, ASTM E 162–90”. However, the following materials need not be tested to establish their flame spread

rating unless a lower rating is required by these standards.

(1) Flame-spread rating—76 to 200.

(i) .035-inch or thicker high pressure laminated plastic panel countertop;

(ii) ¼-inch or thicker unfinished plywood with phenolic or urea glue;

(iii) Unfinished dimension lumber (1-inch or thicker nominal boards);

(iv) ⅜-inch or thicker unfinished particleboard with phenolic or urea binder;

(v) Natural gum-varnished or latex- or alkyd-painted:

(A) ¼-inch or thicker plywood, or

(B) ⅜-inch or thicker particleboard, or

(C) 1-inch or thicker nominal board;

(vi) ⅝-inch gypsum board with decorative wallpaper; and

(vii) ¼-inch or thicker unfinished hardboard,

(2) Flame-spread rating—25 to 200,

(i) Painted metal;

(ii) Mineral-base acoustic tile;

(iii) ⅝-inch or thicker unfinished gypsum wallboard (both latex- or alkyd-painted); and

(iv) Ceramic tile.

(The above-listed material applications do not waive the requirements of § 3280.203(c) or § 3280.204 of this subpart.)

(b) Flame-spread rating requirements.

(1) The interior finish of all walls, columns, and partitions shall not have a flame spread rating exceeding 200 except as otherwise specified herein.

(2) Ceiling interior finish shall not have a flame spread rating exceeding 75.

(3) Walls adjacent to or enclosing a furnace or water heater and ceilings above them shall have an interior finish with a flame spread rating not exceeding 25. Sealants and other trim materials 2 inches or less in width used to finish adjacent surfaces within these spaces are exempt from this provision provided that all joints are completely supported by framing members or by materials having a flame spread rating not exceeding 25.

(4) Exposed interior finishes adjacent to the cooking range shall have a flame spread rating not exceeding 50, except that backsplashes not exceeding 6 inches in height are exempted. Adjacent surfaces are the exposed vertical

surfaces between the range top height and the overhead cabinets and/or ceiling and within 6 horizontal inches of the cooking range. (Refer also to § 3280.204(a), Kitchen Cabinet Protection.) Sealants and other trim materials 2 inches or less in width used to finish adjacent surfaces are exempt from this provision provided that all joints are completely supported by a framing member.

(5) Kitchen cabinet doors, countertops, backsplashes, exposed bottoms, and end panels shall have a flame spread rating not to exceed 200. Cabinet rails, stiles, mullions, and top strips are exempted.

(6) Finish surfaces of plastic bathtubs, shower units, and tub or shower doors shall not exceed a flame spread rating of 200.

(c) Fire protective requirements.

(1) Materials used to surface the following areas shall be of limited combustible material (e.g., ⅝-inch gypsum board, etc.):

(i) The exposed wall adjacent to the cooking range (see § 3280.203(b)(4));

(ii) Exposed bottoms and sides of kitchen cabinets as required by § 3280.204;

(iii) Interior walls and ceilings enclosing furnace and/or water heater spaces; and

(iv) Combustible doors which provide interior or exterior access to furnace and/or water heater spaces. The surface may be interrupted for louvers ventilating the enclosure. However, the louvers shall not be constructed of a material of greater combustibility than the door itself (e.g., plastic louvers on a wooden door).

(2) No burner of a surface cooking unit shall be closer than 12 horizontal inches to a window or an exterior door with glazing.

[49 FR 32008, Aug. 9, 1984, as amended at 58 FR 55005, Oct. 25, 1993]

§ 3280.204 Kitchen cabinet protection.

(a) The bottom and sides of combustible kitchen cabinets over cooking ranges to a horizontal distance of 6 inches from the outside edge of the cooking range shall be protected with at least ⅝-inch thick gypsum board or

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equivalent limited combustible material. One-inch nominal framing members and trim are exempted from this requirement. The cabinet area over the cooking range or cooktops shall be protected by a metal hood (26-gauge sheet metal, or .017 stainless steel, or .024 aluminum, or .020 copper) with not less than a 3-inch eyebrow projecting horizontally from the front cabinet face. The $\frac{5}{16}$ -inch thick gypsum board or equivalent material which is above the top of the hood may be supported by the hood. A $\frac{3}{8}$ -inch enclosed air space shall be provided between the bottom surface of the cabinet and the gypsum board or equivalent material. The hood shall be at least as wide as the cooking range.

(b) The 3-inch metal eyebrow required by paragraph (a) of this section will project from the front and rear cabinet faces when there is no adjacent surface behind the range, or the $\frac{5}{16}$ -inch thick gypsum board or equivalent material shall be extended to cover all exposed rear surfaces of the cabinet.

(c) The metal hood required by paragraphs (a) and (b) of this section can be omitted when an oven of equivalent metal protection is installed between the cabinet and the range and all exposed cabinet surfaces are protected as described in paragraph (a) of this section.

(d) When a manufactured home is designed for the future installation of a cooking range, the metal hood and cabinet protection required by paragraph (a) of this section and the wall-surfacing protection behind the range required by § 3280.203 shall be installed in the factory.

(e) Vertical clearance above cooking top. Ranges shall have a vertical clearance above the cooking top of not less than 24 inches to the bottom of combustible cabinets.

§ 3280.205 Carpeting.

Carpeting shall not be used in a space or compartment designed to contain only a furnace and/or water heater. Carpeting may be used in other areas where a furnace or water heater is installed, provided that it is not located under the furnace or water heater.

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§ 3280.206 Firestopping.

(a) Firestopping of at least 1-inch nominal lumber, $\frac{5}{16}$ -inch thick gypsum board, or the equivalent, shall be provided to cut off concealed draft openings between walls and partitions, including furred spaces, and the roof or floors, so as to retard vertical movement of fire. In particular, such concealed spaces must be constructed so that floor-to-ceiling concealed spaces on one floor do not communicate with any concealed space on another floor, any concealed spaces in the floor, or any concealed space in the roof cavity. A barrier must be installed to prevent communication between adjacent concealed spaces.

(1) Where the barrier is vertical, it must be made of exterior or interior covering(s) equivalent to that used on the nearest exposed wall surface; and

(2) In all other cases, the barrier must be made of 1-inch nominal lumber, $\frac{5}{16}$ -inch thick gypsum board, or the equivalent.

(b) A space does not lose its character as a concealed draft opening if it is filled with insulation or other material or if it is blocked by a barrier other than as required by paragraph (a) of this section.

(c) All openings for pipes and vents and other penetrations in walls, floors, and ceilings of furnace and water heater spaces shall be tight-fitted or firestopped. Pipes, vents, and other penetrations are tight-fitted when they cannot be moved freely in the opening.

§ 3280.207 Requirements for foam plastic thermal insulating materials.

(a) *General.* Foam plastic thermal insulating materials shall not be used within the cavity of walls (not including doors) or ceilings or be exposed to the interior of the home unless:

(1) The foam plastic insulating material is protected by an interior finish of $\frac{5}{16}$ -inch thick gypsum board or equivalent material for all cavities where the material is to be installed; or

(2) The foam plastic is used as a sheathing or siding backerboard, and it:

(i) Has a flame spread rating of 75 or less and a smoke-developed rating of 450 or less (not including outer covering of sheathing);

(ii) Does not exceed 3/8-inch in thickness; and

(iii) Is separated from the interior of the manufactured home by a minimum of 2 inches of mineral fiber insulation or an equivalent thermal barrier; or

(3) The foam plastic insulating material has been previously accepted by the Department for use in wall and/or ceiling cavities of manufactured homes, and it is installed in accordance with any restrictions imposed at the time of that acceptance; or

(4) The foam plastic insulating material has been tested as required for its location in wall and/or ceiling cavities in accordance with testing procedures described in the Illinois Institute of Technology Research Institute (IITRI) Report, "Development of Mobile Home Fire Test Methods to Judge the Fire Safe Performance of Foam Plastic, J-6461," or other full-scale fire tests accepted by the Department, and it is installed in a manner consistent with the way the material was installed in the foam plastic test module. The materials shall be capable of meeting the following acceptance criteria required for their location.

(i) *Wall assemblies.* The foam plastic system shall demonstrate equivalent or superior performance to the control module as determined by:

(A) Time to reach flashover (600° C in the upper part of the room);

(B) Time to reach an oxygen (O₂) level of 14% (rate of O₂ depletion), a carbon monoxide (CO) level of 1%, a carbon dioxide (CO₂) level of 6%, and a smoke level of 0.26 optical density/meter measured at 5 feet high in the doorway; and

(C) Rate of change concentration for O₂, CO, CO₂ and smoke measured 3 inches below the top of the doorway.

(ii) *Ceiling assemblies.* A minimum of three valid tests of the foam plastic system and one valid test of the control module shall be evaluated to determine if the foam plastic system demonstrates equivalent or superior performance to the control module. Individual factors to be evaluated include intensity of cavity fire (temperature-time) and post-test damage.

(iii) *Post-test damage assessment for wall and ceiling assemblies.* The overall performance of each total system shall

also be evaluated in determining the acceptability of a particular foam plastic insulating material.

(b) All foam plastic thermal insulating materials used in manufactured housing shall have a flame spread rating of 75 or less (not including outer covering or sheathing) and a maximum smoke-developed rating of 450.

§ 3280.208 Fire detection equipment.

(a) *General.* At least one smoke detector (which may be a single station alarm device) shall be installed in the home in the location(s) specified in paragraph (b) of this section.

(b) *Smoke detector locations.* (1) A smoke detector shall be installed on any wall in the hallway or space communicating with each bedroom area between the living area and the first bedroom door unless a door(s) separates the living area from that bedroom area, in which case the detector(s) shall be installed on the living area side as close to the door(s) as practicable. Homes having bedroom areas separated by any one or combination of common-use areas such as kitchen, dining room, living room, or family room (but not a bathroom or utility room), shall have at least one detector protecting each bedroom area.

(2) When located in hallways, the detector shall be between the return air intake and the living area.

(3) When a home is equipped or designed for future installation of a roof-mounted evaporative cooler or other equipment discharging conditioned air through a ceiling grille into the living space environment, the detector closest to the air discharge shall be located no closer than three horizontal feet from any discharge grille.

(4) A smoke detector shall not be placed in a location which impairs its effectiveness.

(c) *Labeling.* Smoke detectors shall be labeled as conforming with the requirements of Underwriters' Laboratories Standard No. 217—Fourth Edition 1993 for Single and Multiple Station Smoke Detectors.

(d) *Installation.* Each smoke detector shall be installed in accordance with its listing. The top of the detector shall be located on a wall 4 inches to 12 inches, or at a distance permitted by

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the listing, below the ceiling. However, when a detector is mounted on an interior wall below a sloping ceiling, it shall be located 4 inches to 12 inches below the intersection of the connecting exterior wall and the sloping ceiling (cathedral ceiling). The required detector(s) shall be attached to an electrical outlet box and the detector connected by a permanent wiring method into a general electrical circuit. There shall be no switches in the circuit to the detector between the over-current protection device protecting the branch circuit and the detector. Smoke detector(s) shall not be placed on the same branch circuit or any circuit protected by a ground fault circuit interrupter.

[49 FR 32008, Aug. 9, 1984, as amended at 58 FR 55005, Oct. 25, 1993]

§ 3280.209 Fire testing.

All fire testing conducted in accordance with this subpart shall be performed by nationally recognized testing laboratories which have expertise in fire technology. In case of dispute, the Secretary shall determine if a particular agency is qualified to perform such fire tests.

[49 FR 32011, Aug. 9, 1984]

Subpart D—Body and Frame Construction Requirements

§ 3280.301 Scope.

This subpart covers the minimum requirements for materials, products, equipment and workmanship needed to assure that the manufactured home will provide:

- (a) Structural strength and rigidity,
- (b) Protection against corrosion, decay, insects and other similar destructive forces,
- (c) Protection against hazards of windstorm,
- (d) Resistance to the elements, and
- (e) Durability and economy of maintenance.

§ 3280.302 Definitions.

The following definitions are applicable to subpart D only:

Anchoring equipment: means straps, cables, turnbuckles, and chains, including tensioning devices, which are used

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with ties to secure a manufactured home to ground anchors.

Anchoring system: means a combination of ties, anchoring equipment, and ground anchors that will, when properly designed and installed, resist overturning and lateral movement of the manufactured home from wind forces.

Diagonal tie: means a tie intended to primarily resist horizontal forces, but which may also be used to resist vertical forces.

Footing: means that portion of the support system that transmits loads directly to the soil.

Ground anchor: means any device at the manufactured home stand designed to transfer manufactured home anchoring loads to the ground.

Loads: (1) *Dead load:* means the weight of all permanent construction including walls, floors, roof, partition, and fixed service equipment.

(2) *Live load:* means the weight superimposed by the use and occupancy of the manufactured home, including wind load and snow load, but not including dead load.

(3) *Wind load:* means the lateral or vertical pressure or uplift on the manufactured home due to wind blowing in any direction.

Main frame: means the structural component on which is mounted the body of the manufactured home.

Pier: means that portion of the support system between the footing and manufactured home exclusive of caps and shims.

Sheathing: means material which is applied on the exterior side of a building frame under the exterior weather resistant covering.

Stabilizing devices: means all components of the anchoring and support system such as piers, footings, ties, anchoring equipment, ground anchors, and any other equipment which supports the manufactured home and secures it to the ground.

Support system: means a combination of footings, piers, caps, and shims that will, when properly installed, support the manufactured home.

Tie: means straps, cable, or securing devices used to connect the manufactured home to ground anchors.

Vertical tie: means a tie intended to resist the uplifting or overturning forces.

[58 FR 55005, Oct. 25, 1993; 59 FR 15113, Mar. 31, 1994]

§ 3280.303 General requirements.

(a) *Minimum requirements.* The design and construction of a manufactured home shall conform with the provisions of this standard. Requirements for any size, weight, or quality of material modified by the terms of *minimum, not less than, at least,* and similar expressions are minimum standards. The manufacturer or installer may exceed these standards provided such deviation does not result in any inferior installation or defeat the purpose and intent of this standard.

(b) *Construction.* All construction methods shall be in conformance with accepted engineering practices to insure durable, livable, and safe housing and shall demonstrate acceptable workmanship reflecting journeyman quality of work of the various trades.

(c) *Structural analysis.* The strength and rigidity of the component parts and/or the integrated structure shall be determined by engineering analysis or by suitable load tests to simulate the actual loads and conditions of application that occur. (See subparts E and J.)

(d) [Reserved]

(e) *New materials and methods.* (1) Any new material or method of construction not provided for in this standard and any material or method of questioned suitability proposed for use in the manufacture of the structure shall nevertheless conform in performance to the requirements of this standard.

(2) Unless based on accepted engineering design for the use indicated, all new manufactured home materials, equipment, systems or methods of construction not provided for in this standard shall be subjected to the tests specified in paragraph (g) of this section.

(f) *Allowable design stress.* The design stresses of all materials shall conform to accepted engineering practice. The use of materials not certified as to strength or stress grade shall be limited to the minimum allowable stresses under accepted engineering practice.

(g) *Alternative test procedures.* In the absence of recognized testing procedures either in these standards or the applicable provisions of those standards incorporated by reference, the manufacturer electing this option shall develop or cause to be developed testing procedures to demonstrate the structural properties and significant characteristics of the material, assembly, subassembly component or member. Such testing procedures shall become part of the manufacturer's approved design. (Refer to § 3280.3.)

(1) Testing procedures so developed shall be submitted to the Department for approval.

(2) Upon notification of approval, the alternative test procedure is considered acceptable.

(3) Such tests shall be witnessed by an independent licensed professional engineer or architect or by a recognized testing organization. Copies of the test results shall be kept on file by the manufactured home manufacturer.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 58 FR 55005, Oct. 25, 1993; 59 FR 2469, Jan. 14, 1994]

§ 3280.304 Materials.

(a) Dimension and board lumber shall not exceed 19 percent moisture content at time of installation.

(b)(1) Standards for some of the generally used materials and methods of construction are listed in the following table.

Steel

Specification for Aluminum Structures Construction Manual Series—Section 1, Fifth Edition—1986, The Aluminum Association.

Specification for Structural Steel Buildings—Allowable Stress Design and Plastic Design—AISC—June 1, 1989.

The following parts of this reference standard are not applicable: 1.3.3, 1.3.4, 1.3.5, 1.3.6, 1.4.6, 1.5.1.5, 1.5.5, 1.6, 1.7, 1.8, 1.9, 1.10.4 through 1.10.7, 1.10.9, 1.11, 1.13, 1.14.5, 1.17.7 through 1.17.9, 1.19.1, 1.19.3, 1.20, 1.21, 1.23.7, 1.24, 1.25.1 through 1.25.5, 1.26.4, 2.3, 2.4, 2.8 through 2.10.

Specification for the Design of Cold-Formed Steel Structural Members—AISI—1986 Edition With 1989 Addendum.

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The following parts of this reference standard are not applicable: 3.1.2, 4.2.1, 4.2.4.

Stainless Steel Cold-Formed Structural Design Manual—AISI-1974.

The following part of this reference standard is not applicable: 3.1.2.

Standard Specifications Load Tables and Weight Tables for Steel Joists and Joist Girders, only Sections 1-6 and the table for "H series only" are applicable—Steel Joist Institute 1992.

Manual for Structural Applications of Steel Cables for Buildings—AISI-1973.

Standard Specification for Strapping, Flat Steel and Seals—ASTM D3953-91.

Wood and Wood Products

Basic Hardboard—ANSI/AHA A135.4-1982.

Prefinished Hardboard Paneling—ANSI/AHA A135.5-1988.

Hardboard Siding—ANSI/AHA A135.6-1990.

Interim Voluntary Standard for Hardwood and Decorative Plywood—HPVA Interim Standard HP-1-1993.

Structural Design Guide for Hardwood Plywood Wall Panels—HPMA Design Guide HP-SG-86.

For wood products—Structural Glued Laminated Timber—ANSI/AITC A190.1-1992.

Voluntary Product Standard, Construction and Industrial Plywood—PS-1-83.

APA Design/Construction Guide, Residential and Commercial—APA E30M-1993.

Design and Fabrication of All-Plywood Beams, Suppl. 5—APA-H 815D-1989.

Plywood Design Specification—APA-Y 510Q-1993.

Design and Fabrication of Glued Plywood-Lumber Beams, Suppl. 2—APA-S 812P-1992.

Design and Fabrication of Plywood Curved Panels, Suppl. 1—APA-S 811M-1990.

Design and Fabrication of Plywood Sandwich Panels, Suppl. 4—APA-U 814G-1990.

Performance Standards and Policies for Structural Use Panels—APA-PRP-E-108P, E445N-1989.

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Design and Fabrication of Plywood Stressed-Skin Panels, Suppl. 3—APA-U 813K-1990.

National Design Specifications for Wood Construction, 1991 Edition, With Supplement, Design Values for Wood Construction, AFPA.

Wood Structural Design Data, 1986 Edition With 1992 Revisions, AFPA.

Span Tables for Joists and Rafters—PS-20-70, 1993, AFPA.

Design Values for Joists and Rafters, American Softwood Lumber Standard Sizes, 1992, AFPA.

Design Specifications for Metal Plate Connected Wood Trusses—TPI-85.

Wood Particleboard—ANSI A208.1-1989,

Wood Flush Doors—ANSI/NWWDA I.S.1-87.

Wood Windows—ANSI/NWWDA I.S.2-87.

Wood Sliding Patio Doors—NWWDA-I.S.3-88.

Water Repellent Preservative Non Pressure Treatment for Millwork—NWWDA-I.S.4-81.

Standard Test Methods for Puncture and Stiffness of Paperboard, and Corrugated and Solid Fiberboard—ASTM D781-68 (73).

Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials—ASTM D4442.

Standard Test Methods for Use and Calibration of Hand-Held Moisture Meters—ASTM D4444-92.

Other

Standard Specification for Gypsum Wallboard—ASTM C36-93.

Fasteners

Application and Fastening Schedule: Power-Driven, Mechanically Driven and Manually Driven Fasteners—HUD-FHA Use of Materials Bulletin—UM-25d-73.

Unclassified

American Society of Civil Engineering Minimum Design Loads for Buildings and Other Structures—ANSI/ASCE 7-88.

Performance Standard for Wood-Based Structural Use Panels—PS-2-92,

APA (also known as NIST Standard PS-2-92).

Safety Performance Specifications and Methods of Test for Safety Glazing Materials Used in Building—ANSI Z97.1-1984.

(2) Materials and methods of construction utilized in the design and construction of manufactured homes which are covered by the standards in the following table, or any applicable portion thereof shall comply with these requirements.

(3) Engineering analysis and testing methods contained in these references shall be utilized to judge conformance with accepted engineering practices required in § 3280.303(c).

(4) Materials and methods of installation conforming to these standards shall be considered acceptable when installed in conformance with the requirements of this part.

(5) Materials meeting the standards (or the applicable portion thereof) are considered acceptable unless otherwise specified herein or unless substantial doubt exists as to conformance.

(c) Wood products shall be identified as complying with the appropriate standards.

[40 FR 58752, Dec. 18, 1975, as amended at 42 FR 961, Jan. 4, 1977. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 58 FR 55006, Oct. 25, 1993; 59 FR 15113, Mar. 31, 1994]

§ 3280.305 Structural design requirements.

(a) *General.* Each manufactured home shall be designed and constructed as a completely integrated structure capable of sustaining the design load requirements of this standard, and shall be capable of transmitting these loads to stabilizing devices without exceeding the allowable stresses or deflections. Roof framing shall be securely fastened to wall framing, walls to floor structure, and floor structure to chassis to secure and maintain continuity between the floor and chassis, so as to resist wind overturning, uplift, and sliding as imposed by design loads in this part. Uncompressed finished flooring greater than 1/8 inch in thickness shall not extend beneath load-bearing walls that are fastened to the floor structure.

(b) *Design loads*—(1) *Design dead loads.* Design dead loads shall be the actual dead load supported by the structural assembly under consideration.

(2) *Design live loads.* The design live loads and wind and snow loads shall be as specified in this section and shall be considered to be uniformly distributed. The roof live load or snow load shall not be considered as acting simultaneously with the wind load and the roof live or snow load and floor live loads shall not be considered as resisting the overturning moment due to wind.

(3) When engineering calculations are performed, allowable unit stresses may be increased as provided in the documents referenced in § 3280.304 except as otherwise indicated in §§ 3280.304(b)(1) and 3280.306(a).

(4) Whenever the roof slope does not exceed 20 degrees, the design horizontal wind loads required by § 3280.305(c)(1) may be determined without including the vertical roof projection of the manufactured home. However, regardless of the roof slope of the manufactured home, the vertical roof projection shall be included when determining the wind loading for split level or clerestory-type roof systems.

(c) *Wind, snow, and roof loads*—(1) *Wind loads—design requirements.* (i) *Standard wind loads (Zone I).* When a manufactured home is not designed to resist the wind loads for high wind areas (Zone II or Zone III) specified in paragraph (c)(1)(ii) of this section, the manufactured home and each of its wind resisting parts and portions shall be designed for horizontal wind loads of not less than 15 psf and net uplift load of not less than 9 psf.

(ii) *Wind loads for high wind areas (Zone II and Zone III).* When designed for high wind areas (Zone II and Zone III), the manufactured home, each of its wind resisting parts (including, but not limited to, shear walls, diaphragms, ridge beams, and their fastening and anchoring systems), and its components and cladding materials (including, but not limited to, roof trusses, wall studs, exterior sheathing, roofing and siding materials, exterior glazing, and their connections and fasteners) shall be designed by a Professional Engineer or Architect to resist:

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(A) The design wind loads for Exposure C specified in ANSI/ASCE 7-88, “Minimum Design Loads for Buildings and Other Structures,” for a fifty-year recurrence interval, and a design wind speed of 100 mph, as specified for Wind

Zone II, or 110 mph, as specified for Wind Zone III (Basic Wind Zone Map); or

(B) The wind pressures specified in the following table:

TABLE OF DESIGN WIND PRESSURES

Element	Wind zone II design wind speed 100 MPH	Wind zone III design wind speed 110 MPH
Anchorage for lateral and vertical stability (See §3280.306(a)):		
Net Horizontal Drag ^{1,2}	³ ±39 PSF	³ ±47 PSF
Uplift ⁴	⁵ – 27 PSF	– 32 PSF
Main wind force resisting system:		
Shearwalls, Diaphragms and their Fastening and Anchorage Systems ^{1,2}	±39 PSF	±47 PSF
Ridge beams and other Main Roof Support Beams (Beams supporting expanding room sections, etc.).....	– 30 PSF	– 36 PSF
Components and cladding:		
Roof trusses ⁴ in all areas; trusses shall be doubled within 3’-0” from each end of the roof.....	⁵ – 39 PSF	⁵ – 47 PSF
Exterior roof coverings, sheathing and fastenings ^{4,6,7} in all areas except the following.....	⁵ – 39 PSF	⁵ – 47 PSF
Within 3’-0” from each gable end (overhang at end wall) of the roof or endwall if no overhang is provided ^{4,6,7}	⁵ – 73 PSF	⁵ – 89 PSF
Within 3’-0” from the ridge and eave (overhang at sidewall) or sidewall if no eave is provided ^{4,6,7}	⁵ – 51 PSF	⁵ – 62 PSF
Eaves (Overhangs at Sidewalls) ^{4,6,7}	⁵ – 51 PSF	⁵ – 62 PSF
Gables (Overhangs at Endwalls) ^{4,6,7}	⁵ – 73 PSF	⁵ – 89 PSF
Wall studs in sidewalls and endwalls, exterior windows and sliding glass doors (glazing and framing), exterior coverings, sheathing and fastenings ⁸ :		
Within 3’-0” from each corner of the sidewall and endwall.....	±48 PSF	±58 PSF
All other areas.....	±38 PSF	±46 PSF

NOTES:

¹ The net horizontal drag of ±39 PSF to be used in calculating Anchorage for Lateral and Vertical Stability and for the design of Main Wind Force Resisting Systems is based on a distribution of wind pressures of +0.8 or +24 PSF to the windward wall and – 0.5 or – 15 PSF to the leeward wall.

² Horizontal drag pressures need not be applied to roof projections when the roof slope does not exceed 20 degrees.

³ + sign would mean pressures are acting towards or on the structure; – sign means pressures are acting away from the structure; ± sign means forces can act in either direction, towards or away from the structure.

⁴ Design values in this “Table” are only applicable to roof slopes between 10 degrees (nominal 2/12 slope) and 30 degrees.

⁵ The design uplift pressures are the same whether they are applied normal to the surface of the roof or to the horizontal projection of the roof.

⁶ Shingle roof coverings that are secured with 6 fasteners per shingle through an underlayment which is cemented to a 3/8” structural rated roof sheathing need not be evaluated for these design wind pressures.

⁷ Structural rated roof sheathing that is at least 3/8” in thickness, installed with the long dimension perpendicular to roof framing supports, and secured with fasteners at 4” on center within 3’-0” of each gable end or endwall if no overhang is provided and 6” on center in all other areas, need not be evaluated for these design wind pressures.

⁸ Exterior coverings that are secured at 6” o.c. to a 3/8” structural rated sheathing that is fastened to wall framing members at 6” on center need not be evaluated for these design wind pressures.

(2) *Wind loads—zone designations.* The Wind Zone and specific wind design load requirements are determined by the fastest basic wind speed (mph) within each Zone and the intended location, based on the Basic Wind Zone Map, as follows:

(i) *Wind Zone I.* Wind Zone I consists of those areas on the Basic Wind Zone Map that are not identified in paragraphs (c)(2)(ii) or (iii) of this section as being within Wind Zone II or III, respectively.

(ii) *Wind Zone II.*....100 mph. The following areas are deemed to be within Wind Zone II of the Basic Wind Zone Map:

Local governments: The following local governments listed by State (counties, unless specified otherwise):

Alabama: Baldwin and Mobile.

Florida: All counties except those identified in paragraph (c)(1)(i)(C) of this section as within Wind Zone III.

Georgia: Bryan, Camden, Chatham, Glynn, Liberty, McIntosh.

Louisiana: Parishes of Acadia, Allen, Ascension, Assumption, Calcasieu, Cameron, East Baton Rouge, East Feliciana, Evangeline, Iberia, Iberville, Jefferson Davis, LaFayette, Livingston, Pointe Coupee, St. Helena, St. James, St. John the Baptist, St. Landry, St. Martin, St. Tammany,

Tangipahoa, Vermillion, Washington, West Baton Rouge, and West Feliciana.

Maine: Hancock and Washington.

Massachusetts: Barnstable, Bristol, Dukes, Nantucket, and Plymouth.

Mississippi: George, Hancock, Harrison, Jackson, Pearl River, and Stone.

North Carolina: Beaufort, Brunswick, Camden, Chowan, Columbus, Craven, Currituck, Jones, New Hanover, Onslow, Pamlico, Pasquotank, Pender, Perquimans, Tyrrell, and Washington.

South Carolina: Beaufort, Berkeley, Charleston, Colleton, Dorchester, Georgetown, Horry, Jasper, and Williamsburg.

Texas: Aransas, Brazoria, Calhoun, Cameron, Chambers, Galveston, Jefferson, Kenedy, Kleberg, Matagorda, Nueces, Orange, Refugio, San Patricio, and Willacy.

Virginia: Cities of Chesapeake, Norfolk, Portsmouth, Princess Anne, and Virginia Beach.

(iii) *Wind Zone III*.....110 mph. The following areas are considered to be within Wind Zone III of the Basic Wind Zone Map:

(A) *States and Territories:* The entire State of Hawaii, the coastal regions of Alaska (as determined by the 90 mph isotach on the ANSI/ASCE 7-88 map), and all of the U.S. Territories of American Samoa, Guam, Northern Mariana Islands, Puerto Rico, Trust Territory of the Pacific Islands, and the United States Virgin Islands.

(B) *Local governments:* The following local governments listed by State (counties, unless specified otherwise):

Florida: Broward, Charlotte, Collier, Dade, Franklin, Gulf, Hendry, Lee, Martin, Manatee, Monroe, Palm Beach, Pinellas, and Sarasota.

Louisiana: Parishes of Jefferson, La Fourche, Orleans, Plaquemines, St. Bernard, St. Charles, St. Mary, and Terrabonne.

North Carolina: Carteret, Dare, and Hyde.

(iv) *Consideration of local requirements.* For areas where local building code requirements exceed the design wind speed requirements of these standards,

the Department will consider the adoption through rulemaking of the more stringent requirements of the State or local building authority.

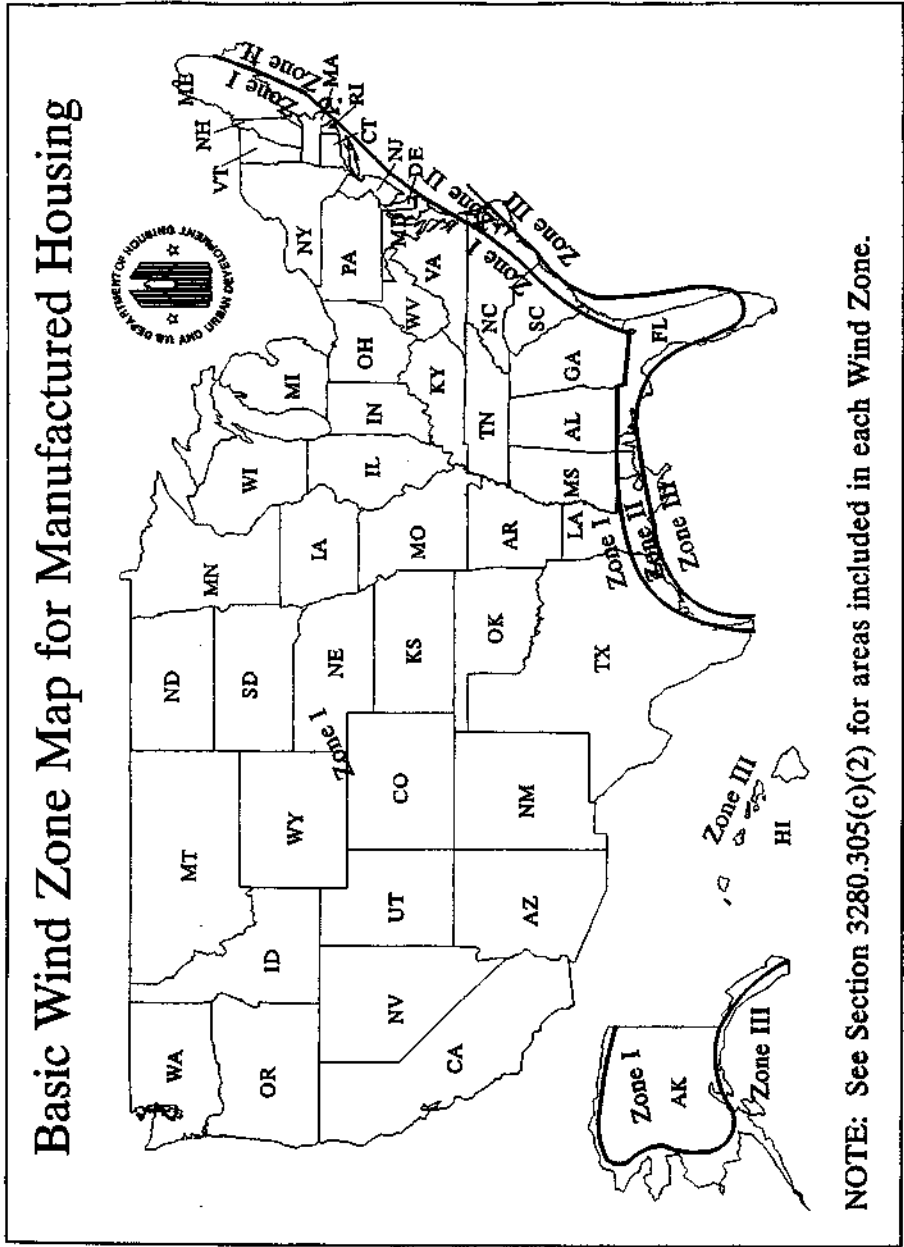
(3) *Snow and roof loads.* (i) Flat, curved and pitched roofs shall be designed to resist the following live loads, applied downward on the horizontal projection as appropriate for the design zone marked on the manufactured home:

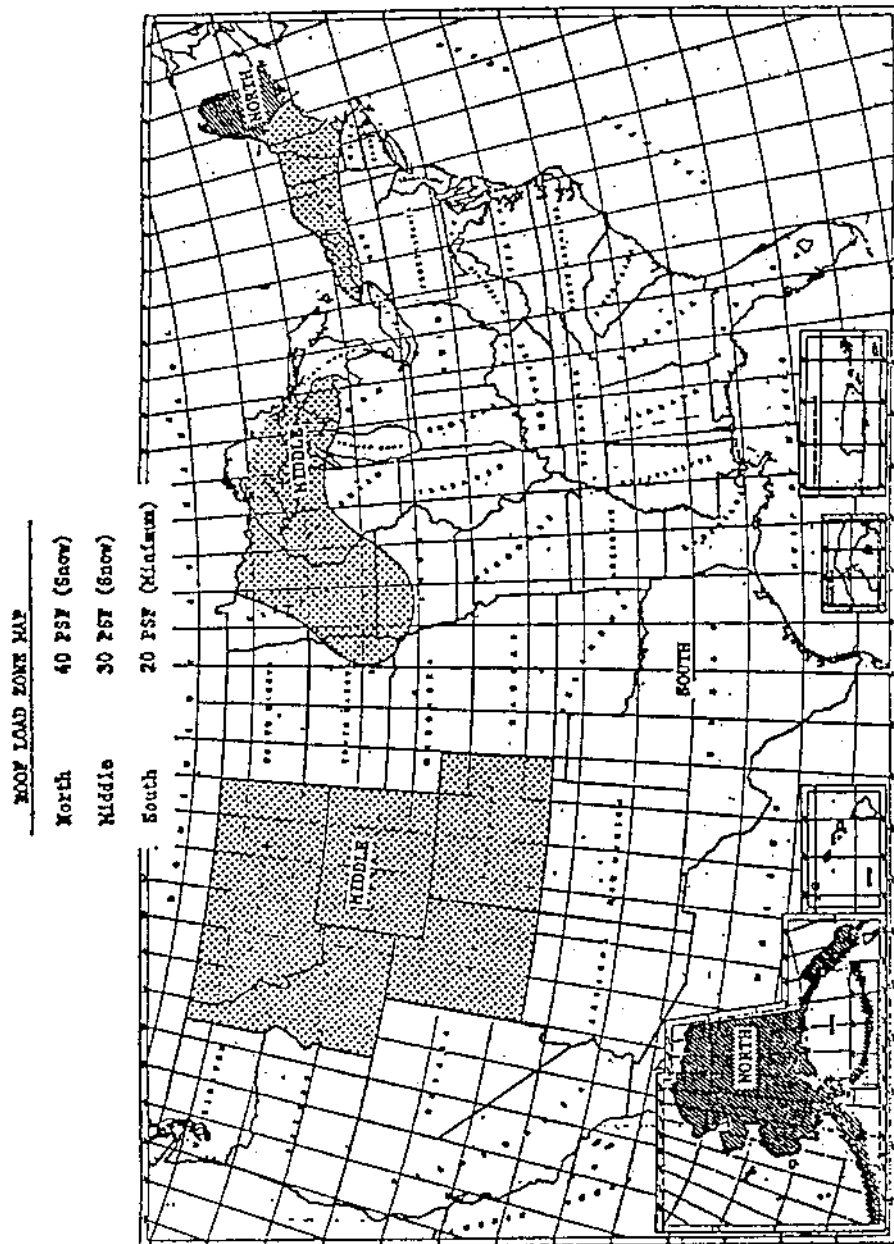
Zone (see Map in § 3280.305(c)(4))	Pounds per square foot
North Zone	40
Middle Zone	30
South Zone	20

(ii) For exposures in areas (mountainous or other) where snow or wind records or experience indicate significant differences from the loads stated above, the Department may establish more stringent requirements for homes known to be destined for such areas. For snow loads, such requirements are to be based on a roof snow load of 0.6 of the ground snow load for areas exposed to wind and a roof snow load of 0.8 of the ground snow load for sheltered areas.

(iii) Eaves and cornices shall be designed for a net uplift pressure of 2.5 times the design uplift wind pressure cited in § 3280.305(c)(1)(i) for Wind Zone I, and for the design pressures cited in § 3280.305(c)(1)(ii) for Wind Zones II and III.

(4) *Data plate requirements.* The Data Plate posted in the manufactured home (see § 3280.5) shall designate the wind and roof load zones or, if designed for higher loads, the actual design external snow and wind loads for which the home has been designed. The Data Plate shall include reproductions of the Load Zone Maps shown in this paragraph (c)(4), with any related information. The Load Zone Maps shall be not less than either 3½ in. by 2¼ in., or one-half the size illustrated in the Code of Federal Regulations.





(d) *Design load deflection.* (1) When a structural assembly is subjected to total design live loads, the deflection for structural framing members shall not exceed the following (where L equals the clear span between supports or two times the length of a cantilever):

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Floor—L/240

Roof and ceiling—L/180

Headers, beams, and girders (vertical load)—L/180

Walls and partitions—L/180

(2) The allowable eave or cornice deflection for uplift is to be measured at the design uplift load of 9 psf for Wind Zone I, and at the design uplift pressure cited in paragraph (c)(1)(ii) of this section for Wind Zones II and III. The allowable deflection shall be $(2 \times L_c)/180$, where L_c is the measured horizontal eave projection from the wall.

(e) *Fastening of structural systems.* (1) Roof framing shall be securely fastened to wall framing, walls to floor structure, and floor structure to chassis to secure and maintain continuity between the floor and chassis, so as to resist wind overturning, uplift, and sliding as specified in this part.

(2) For Wind Zones II and III, roof trusses shall be secured to exterior wall framing members (studs), and exterior wall framing members (studs) shall be secured to floor framing members, with 26 gage minimum steel strapping or brackets or by a combination of 26 gage minimum steel strapping or brackets and structural rated wall sheathing that overlaps the roof and floor. Steel strapping or brackets shall be installed at a maximum spacing of 24" on center in Wind Zone II and at a maximum of 16" on center in Wind Zone III. The number and type of fasteners used to secure the steel straps or brackets or structural sheathing shall be capable of transferring all uplift forces between elements being joined.

(f) *Walls.* The walls shall be of sufficient strength to withstand the load requirements as defined in §3280.305(c) of this part, without exceeding the deflections as specified in §3280.305(d). The connections between the bearing walls, floor, and roof framework members shall be fabricated in such a manner as to provide support for the material used to enclose the manufactured home and to provide for transfer of all lateral and vertical loads to the floor and chassis.

(1) Except where substantiated by engineering analysis or tests, studs shall not be notched or drilled in the middle one-third of their length.

(2) Interior walls and partitions shall be constructed with structural capacity adequate for the intended purpose and shall be capable of resisting a horizontal load of not less than five pounds per square foot. An allowable stress increase of 1.33 times the permitted published design values may be used in the design of wood framed interior partitions. Finish of walls and partitions shall be securely fastened to wall framing.

(g) *Floors.* (1) Floor assemblies shall be designed in accordance with accepted engineering practice standards to support a minimum uniform live load of 40 lb/ft² plus the dead load of the materials. In addition (but not simultaneously), floors shall be able to support a 200-pound concentrated load on a one-inch diameter disc at the most critical location with a maximum deflection not to exceed one-eighth inch relative to floor framing. Perimeter wood joists of more than six inches depth shall be stabilized against overturning from superimposed loads as follows: at ends by solid blocking not less than two-inch thickness by full depth of joist, or by connecting to a continuous header not less than two-inch thickness and not less than the depth of the joist with connecting devices; at eight-foot maximum intermediate spacing by solid blocking or by wood cross-bridging of not less than one inch by three inches, metal cross-bridging of equal strength, or by other approved methods.

(2) Wood, wood fiber or plywood floors or subfloors in kitchens, bathrooms (including toilet compartments), laundry areas, water heater compartments, and any other areas subject to excessive moisture shall be moisture resistant or shall be made moisture resistant by sealing or by an overlay of nonabsorbent material applied with water-resistant adhesive. Use of one of the following methods would meet this requirement:

(i) Sealing the floor with a water-resistant sealer; or

(ii) Installing an overlay of a non-absorbent floor covering material applied with water-resistant adhesive; or

(iii) Direct application of a water-resistant sealer to the exposed wood floor

area when covered with a non-absorbent overlay; or

(iv) The use of a non-absorbent floor covering which may be installed without a continuous application of a water-resistant adhesive or sealant when the floor covering meets the following criteria:

(A) The covering is a continuous membrane with any seams or patches seam bonded or welded to preserve the continuity of the floor covering; and

(B) The floor is protected at all penetrations in these areas by sealing with a compatible water-resistant adhesive or sealant to prevent moisture from migrating under the nonabsorbent floor covering; and

(C) The covering is fastened around the perimeter of the subfloor in accordance with the floor covering manufacturer's instructions; and,

(D) The covering is designed to be installed to prevent moisture penetration without the use of a water-resistant adhesive or sealer except as required in this paragraph (g). The vertical edges of penetrations for plumbing shall be covered with a moisture-resistant adhesive or sealant. The vertical penetrations located under the bottom plates of perimeter walls of rooms, areas, or compartments are not required to be sealed; this does not include walls or partitions within the rooms or areas.

(3) Carpet or carpet pads shall not be installed under concealed spaces subject to excessive moisture, such as plumbing fixture spaces, floor areas under installed laundry equipment. Carpet may be installed in laundry space provided:

(i) The appliances are not provided;

(ii) The conditions of paragraph (g)(2) of this section are followed; and

(iii) Instructions are provided to remove carpet when appliances are installed.

(4) Except where substantiated by engineering analysis or tests:

(i) Notches on the ends of joists shall not exceed one-fourth the joist depth.

(ii) Holes bored in joists shall not be within 2 inches of the top or bottom of the joist, and the diameter of any such hole shall not exceed one-third the depth of the joist.

(iii) Notches in the top or bottom of the joists shall not exceed one-sixth

the depth and shall not be located in the middle third of the span.

(5) Bottom board material (with or without patches) shall meet or exceed the level of 48 inch-pounds of puncture resistance as tested by the Beach Puncture Test in accordance with Standard Test Methods for Puncture and Stiffness of Paperboard, and Corrugated and Solid Fiberboard, ASTM D-781-1968 (73). The material shall be suitable for patches and the patch life shall be equivalent to the material life. Patch installation instruction shall be included in the manufactured home manufacturer's instructions.

(h) *Roofs.* (1) Roofs shall be of sufficient strength to withstand the load requirements as defined in § 3280.305 (b) and (c) without exceeding the deflections specified in § 3280.305(d). The connections between roof framework members and bearing walls shall be fabricated in such a manner to provide for the transfer of design vertical and horizontal loads to the bearing walls and to resist uplift forces.

(2) Roofing membranes shall be of sufficient rigidity to prevent deflection which would permit ponding of water or separation of seams due to wind, snow, ice, erection or transportation forces.

(3) Cutting of roof framework members for passage of electrical, plumbing or mechanical systems shall not be allowed except where substantiated by engineering analysis.

(4) All roof penetrations for electrical, plumbing or mechanical systems shall be properly flashed and sealed. In addition, where a metal roof membrane is penetrated, a wood backer shall be installed. The backer plate shall be not less than $\frac{5}{16}$ inch plywood, with exterior glues, secured to the roof framing system beneath the metal roof, and shall be of a size to assure that all screws securing the flashing are held by the backer plate.

(i) *Frame construction.* The frame shall be capable of transmitting all design loads to stabilizing devices without exceeding the allowable load and deflections of this section. The frame shall also be capable of withstanding the effects of transportation shock and vibration without degradation as required by subpart J.

(1) *Welded connections.* (i) All welds shall be made in accordance with the applicable provisions of the Specification for Structural Steel Buildings, Allowable Stress Design and Plastic Design, AISC, June 1, 1989. The Specification for the Design of Cold-Formed Steel Structural Members, AISI-1986 with 1989 addendum, and the Stainless Steel Cold-Formed Structural Design Manual, AISI-1974.

(ii) Regardless of the provisions of any reference standard contained in this subpart, deposits of weld slag or flux shall be required to be removed only from welded joints at the following locations:

(A) Drawbar and coupling mechanisms;

(B) Main member splices, and

(C) Spring hanger to main member connections.

(2) *Protection of metal frames against corrosion.* Metal frames shall be made corrosion resistant or protected against corrosion. Metal frames may be protected against corrosion by painting.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 44 FR 66195, Nov. 19, 1979; 52 FR 4582, Feb. 12, 1987; 58 FR 55006, Oct. 25, 1993; 59 FR 2469, Jan. 14, 1994; 59 FR 15113, 15114, Mar. 31, 1994; 62 FR 54547, Oct. 20, 1997]

§ 3280.306 Windstorm protection.

(a) *Provisions for support and anchoring systems.* Each manufactured home shall have provisions for support/anchoring or foundation systems that, when properly designed and installed, will resist overturning and lateral movement (sliding) of the manufactured home as imposed by the respective design loads. For Wind Zone I, the design wind loads to be used for calculating resistance to overturning and lateral movement shall be the simultaneous application of the wind loads indicated in § 3280.305(c)(1)(i), increased by a factor of 1.5. The 1.5 factor of safety for Wind Zone I is also to be applied simultaneously to both the vertical building projection, as horizontal wind load, and across the surface of the full roof structure, as uplift loading. For Wind Zones II and III, the resistance shall be determined by the simultaneous application of the horizontal

drag and uplift wind loads, in accordance with § 3280.305(c)(1)(ii). The basic allowable stresses of materials required to resist overturning and lateral movement shall not be increased in the design and proportioning of these members. No additional shape or location factors need to be applied in the design of the tiedown system. The dead load of the structure may be used to resist these wind loading effects in all Wind Zones.

(1) The provisions of this section shall be followed and the support and anchoring systems shall be designed by a Registered Professional Engineer or Architect.

(2) The manufacturer of each manufactured home is required to make provision for the support and anchoring systems but is not required to provide the anchoring equipment or stabilizing devices. When the manufacturer's installation instructions provide for the main frame structure to be used as the points for connection of diagonal ties, no specific connecting devices need be provided on the main frame structure.

(b) *Contents of instructions.* (1) The manufacturer shall provide printed instructions with each manufactured home specifying the location and required capacity of stabilizing devices on which the design is based. The manufacturer shall provide drawings and specifications certified by a registered professional engineer or architect indicating at least one acceptable system of anchoring, including the details of required straps or cables, their end connections, and all other devices needed to transfer the wind loads from the manufactured home to an anchoring or foundation system.

(2) For anchoring systems, the instructions shall indicate:

(i) The minimum anchor capacity required;

(ii) That anchors should be certified by a professional engineer, architect, or a nationally recognized testing laboratory as to their resistance, based on the maximum angle of diagonal tie and/or vertical tie loading (see paragraph (c)(3) of this section) and angle of anchor installation, and type of soil in which the anchor is to be installed;

(iii) That ground anchors should be embedded below the frost line and be at

least 12 inches above the water table; and

(iv) That ground anchors should be installed to their full depth, and stabilizer plates should be installed to provide added resistance to overturning or sliding forces.

(v) That anchoring equipment should be certified by a registered professional engineer or architect to resist these specified forces in accordance with testing procedures in ASTM Standard Specification D3953-91, Standard Specification for Strapping, Flat Steel and Seals.

(c) *Design criteria.* The provisions made for anchoring systems shall be based on the following design criteria for manufactured homes.

(1) The minimum number of ties provided per side of each home shall resist design wind loads required in § 3280.305(c)(1).

(2) Ties shall be as evenly spaced as practicable along the length of the manufactured home, with not more than two (2) feet open-end spacing on each end.

(3) Vertical ties or straps shall be positioned at studs. Where a vertical tie and a diagonal tie are located at the same place, both ties may be connected to a single anchor, provided that the anchor used is capable of carrying both loadings, simultaneously.

(4) Add-on sections of expandable manufactured homes shall have provisions for vertical ties at the exposed ends.

(d) *Requirements for ties.* Manufactured homes in Wind Zone I require only diagonal ties. These ties shall be placed along the main frame and below the outer side walls. All manufactured homes designed to be located in Wind Zones II and III shall have a vertical tie installed at each diagonal tie location.

(e) *Protection requirements.* Protection shall be provided at sharp corners where the anchoring system requires the use of external straps or cables. Protection shall also be provided to minimize damage to siding by the cable or strap.

(f) *Anchoring equipment—load resistance.* Anchoring equipment shall be capable of resisting an allowable working load equal to or exceeding 3,150 pounds

and shall be capable of withstanding a 50 percent overload (4,725 pounds total) without failure of either the anchoring equipment or the attachment point on the manufactured home.

(g) *Anchoring equipment—weatherization.* Anchoring equipment exposed to weathering shall have a resistance to weather deterioration at least equivalent to that provided by a coating of zinc on steel of not less than 0.30 ounces per square foot of surface coated, and in accordance with the following:

(1) Slit or cut edges of zinc-coated steel strapping do not need to be zinc coated.

(2) Type 1, Finish B, Grade 1 steel strapping, 1-1/4 inches wide and 0.035 inches in thickness, certified by a registered professional engineer or architect as conforming with ASTM Standard Specification D3953-91, Standard Specification for Strapping, Flat Steel, and Seals.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 52 FR 4583, Feb. 12, 1987; 59 FR 2473, Jan. 14, 1994]

§ 3280.307 Resistance to elements and use.

(a) Exterior coverings shall be of moisture and weather resistive materials attached with corrosion resistant fasteners to resist wind, snow and rain. Metal coverings and exposed metal structural members shall be of corrosion resistant materials or shall be protected to resist corrosion. All joints between portions of the exterior covering shall be designed, and assembled to protect against the infiltration of air and water, except for any designed ventilation of wall or roof cavity.

(b) Joints between dissimilar materials and joints between exterior coverings and frames of openings shall be protected with a compatible sealant suitable to resist infiltration of air or water.

(c) Where adjoining materials or assemblies of materials are of such nature that separation can occur due to expansion, contraction, wind loads or other loads induced by erection or transportation, sealants shall be of a type that maintains protection against infiltration or penetration by air, moisture or vermin.

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(d) Exterior surfaces shall be sealed to resist the entrance of rodents.

§ 3280.308 Formaldehyde emission controls for certain wood products.

(a) *Formaldehyde emission levels.* All plywood and particleboard materials bonded with a resin system or coated with a surface finish containing formaldehyde shall not exceed the following formaldehyde emission levels when installed in manufactured homes:

(1) Plywood materials shall not emit formaldehyde in excess of 0.2 parts per million (ppm) as measured by the air chamber test method specified in § 3280.406.

(2) Particleboard materials shall not emit formaldehyde in excess of 0.3 ppm as measured by the air chamber test specified in § 3280.406.

(b) *Product certification and continuing qualification.* All plywood and particleboard materials to be installed in manufactured homes which are bonded with a resin system or coated with a surface finish containing formaldehyde, other than an exclusively phenol-formaldehyde resin system or finish, shall be certified by a nationally recognized testing laboratory as complying with paragraph (a) of this section.

(1) Separate certification shall be done for each plant where the particleboard is produced or where the plywood or particleboard is surface-finished.

(2) To certify plywood or particleboard, the testing laboratory shall witness or conduct the air chamber test specified in § 3280.406 on randomly selected panels initially and at least quarterly thereafter.

(3) The testing laboratory must approve a written quality control plan for each plant where the particleboard is produced or finished or where the plywood is finished. The quality control plan must be designed to assure that all panels comply with paragraph (a) of this section. The plan must establish ongoing procedures to identify increases in the formaldehyde emission characteristics of the finished product resulting from the following changes in production.

(i) In the case of plywood:

(A) The facility where the unfinished panels are produced is changed;

(B) The thickness of the panels is changed so that the panels are thinner; or

(C) The grooving pattern on the panels is changed so that the grooves are deeper or closer together.

(ii) In the case of particleboard:

(A) The resin formulation is changed so that the formaldehyde-to-urea ratio is increased;

(B) The amount of formaldehyde resin used is increased; or

(C) The press time is decreased.

(iii) In the case of plywood or particleboard:

(A) The finishing or top coat is changed and the new finishing or top coat has a greater formaldehyde content; or

(B) The amount of finishing or top coat used on the panels is increased, provided that such finishing or top coat contains formaldehyde.

(4) The testing laboratory shall periodically visit the plant to monitor quality control procedures to assure that all certified panels meet the standard.

(5) To maintain its certification, plywood or particleboard must be tested by the air chamber test specified in § 3280.406 whenever one of the following events occurs:

(i) In the case of particleboard, the resin formulation is changed so that the formaldehyde-to-urea ratio is increased; or

(ii) In the case of particleboard or plywood, the finishing or top coat is changed and the new finishing or top coat contains formaldehyde; or

(iii) In the case of particleboard or plywood, the testing laboratory determines that an air chamber test is necessary to assure that panels comply with paragraph (a) of this section.

(6) In the event that an air chamber test measures levels of formaldehyde from plywood or particleboard in excess of those permitted under paragraph (a) of this section, then the tested product's certification immediately lapses as of the date of production of the tested panels. No panel produced on the same date as the tested panels or on any day thereafter may be used or

certified for use in manufactured homes.

(i) Provided, however, that a new product certification may be obtained by testing randomly selected panels which were produced on any day following the date of production of the tested panels. If such panels pass the air chamber test specified in § 3280.406, then the plywood or particleboard produced on that day and subsequent days may be used and certified for use in manufactured homes.

(ii) Provided further, that plywood or particleboard produced on the same day as the tested panels, and panels produced on subsequent days, if not certified pursuant to paragraph (b)(4)(i) of this section, may be used in manufactured homes only under the following circumstances:

(A) Each panel is treated with a scavenger, sealant, or other means of reducing formaldehyde emissions which does not adversely affect the structural quality of the product; and

(B) Panels randomly selected from the treated panels are tested by and pass the air chamber test specified in § 3280.406.

(c) *Panel identification.* Each plywood and particleboard panel to be installed in manufactured homes which is bonded or coated with a resin system containing formaldehyde, other than an exclusively phenol-formaldehyde resin system, shall be stamped or labeled so as to identify the product manufacturer, date of production and/or lot number, and the testing laboratory certifying compliance with this section.

(d) *Treatment after certification.* If certified plywood or particleboard subsequently is treated with paint, varnish, or any other substance containing formaldehyde, then the certification is no longer valid. In such a case, each stamp or label placed on the panels pursuant to paragraph (c) of this section must be obliterated. In addition, the treated panels may be recertified and reidentified in accordance with paragraphs (b) and (c) of this section.

[49 FR 32011, Aug. 9, 1984]

§ 3280.309 Health Notice on formaldehyde emissions.

(a) Each manufactured home shall have a Health Notice on formaldehyde emissions prominently displayed in a temporary manner in the kitchen (i.e., countertop or exposed cabinet face). The Notice shall read as follows:

IMPORTANT HEALTH NOTICE

Some of the building materials used in this home emit formaldehyde. Eye, nose, and throat irritation, headache, nausea, and a variety of asthma-like symptoms, including shortness of breath, have been reported as a result of formaldehyde exposure. Elderly persons and young children, as well as anyone with a history of asthma, allergies, or lung problems, may be at greater risk. Research is continuing on the possible long-term effects of exposure to formaldehyde.

Reduced ventilation resulting from energy efficiency standards may allow formaldehyde and other contaminants to accumulate in the indoor air. Additional ventilation to dilute the indoor air may be obtained from a passive or mechanical ventilation system offered by the manufacturer. Consult your dealer for information about the ventilation options offered with this home.

High indoor temperatures and humidity raise formaldehyde levels. When a home is to be located in areas subject to extreme summer temperatures, an air-conditioning system can be used to control indoor temperature levels. Check the comfort cooling certificate to determine if this home has been equipped or designed for the installation of an air-conditioning system.

If you have any questions regarding the health effects of formaldehyde, consult your doctor or local health department.

(b) The Notice shall be legible and typed using letters at least ¼ inch in size. The title shall be typed using letters at least ¾ inch in size.

(c) The Notice shall not be removed by any party until the entire sales transaction has been completed (refer to part 3282—Manufactured Home Procedural and Enforcement Regulations for provisions regarding a sales transaction).

(d) A copy of the Notice shall be included in the Consumer Manual (refer to part 3283—Manufactured Home Consumer Manual Requirements).

[49 FR 32012, Aug. 9, 1984, as amended at 54 FR 46049, Nov. 1, 1989; 58 FR 55007, Oct. 25, 1993]

Subpart E—Testing

§ 3280.401 Structural load tests.

Every structural assembly tested shall be capable of meeting the Proof Load Test or the Ultimate Load Test as follows:

(a) *Proof load tests.* Every structural assembly tested shall be capable of sustaining its dead load plus superimposed live loads equal to 1.75 times the required live loads for a period of 12 hours without failure. Tests shall be conducted with loads applied and deflections recorded in $\frac{1}{4}$ design live load increments at 10-minute intervals until 1.25 times design live load plus dead load has been reached. Additional load shall then be applied continuously until 1.75 times design live load plus dead load has been reached. Assembly failure shall be considered as design live load deflection (or residual deflection measured 12 hours after live load removal) which is greater than the limits set in § 3280.305(d), rupture, fracture, or excessive yielding. An assembly to be tested shall be of the minimum quality of materials and workmanship of the production. Each test assembly, component or subassembly shall be identified as to type and quality or grade of material. All assemblies, components or sub-assemblies qualifying under this section shall be subject to a continuing qualification testing program acceptable to the Department.

(b) *Ultimate load tests.* Ultimate load tests shall be performed on a minimum of three assemblies or components to generally evaluate the structural design. Every structural assembly or component tested shall be capable of sustaining its total dead load plus the design live load increased by a factor of safety of at least 2.5. A factor of safety greater than 2.5 shall be used when required by an applicable reference standard in § 3280.304(b)(1). Tests shall be conducted with loads applied and deflections recorded in $\frac{1}{4}$ design live load increments at 10-minute intervals until 1.25 times design live load plus dead load has been reached. Additional loading shall then be applied continuously until failure occurs or the total of the factor of safety times the design live load plus the dead load is reached. As-

sembly failure shall be considered as design live load deflection greater than the limits set in § 3280.305(d), rupture, fracture, or excessive yielding. Assemblies to be tested shall be representative of average quality or materials and workmanship of the production. Each test assembly, component, or sub-assembly shall be identified as to type and quality or grade of material. All assemblies, components, or sub-assemblies qualifying under this section shall be subject to a periodic qualification testing program acceptable to the Department.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 58 FR 55007, Oct. 25, 1993]

§ 3280.402 Test procedure for roof trusses.

(a) *Roof load tests.* The following is an acceptable test procedure, consistent with the provisions of § 3280.401, for roof trusses that are supported at the ends and support design loads. Where roof trusses act as support for other members, act as cantilevers, or support concentrated loads, they shall be tested accordingly.

(b) *General.* Trusses may be tested in pairs or singly in a suitable test facility. When tested singly, simulated lateral support of the test assembly may be provided, but in no case shall this lateral support exceed that which is specified for the completed manufactured home. When tested in pairs, the trusses shall be spaced at the design spacing and shall be mounted on solid support accurately positioned to give the required clear span distance (L) as specified in the design. The top and bottom chords shall be braced and covered with the material, with connections or method of attachment, as specified by the completed manufactured home.

(1) As an alternate test procedure, the top chord may be sheathed with $\frac{1}{4}$ inch by 12 inch plywood strips. The plywood strips shall be at least long enough to cover the top chords of the trusses at the designated design truss spacing. Adjacent plywood strips must be separated by at least $\frac{1}{8}$ inch. The plywood strip shall be nailed with 4d nails or equivalent staples not closer than 8 inches on center along the top

chord. The bottom chords of the adjacent trusses may be either:

- (i) Unbraced,
- (ii) Laterally braced together (not cross braced) with 1" x 2" stripping not closer than 24 inches on center nailed with only one 6d nail at each truss, or
- (iii) Covered with the material, with connections or methods of attachment, as specified for the completed manufactured home.

(2) Truss deflections will be measured relative to a taut wire running over the support and weighted at the end to insure constant tension or other approved methods. Deflections will be

measured at the two quarter points and at midspan. Loading shall be applied to the top chord through a suitable hydraulic, pneumatic, or mechanical system, masonry units, or weights to simulate design loads. Load units for uniformly distributed loads shall be separated so that arch action does not occur, and shall be spaced not greater than 12 inches on center so as to simulate uniform loading.

(c) *Nondestructive test procedure*—(1) *Dead load plus live load.* (i) Noting figure A-1, measure and record initial elevation of the truss in test position at no load.

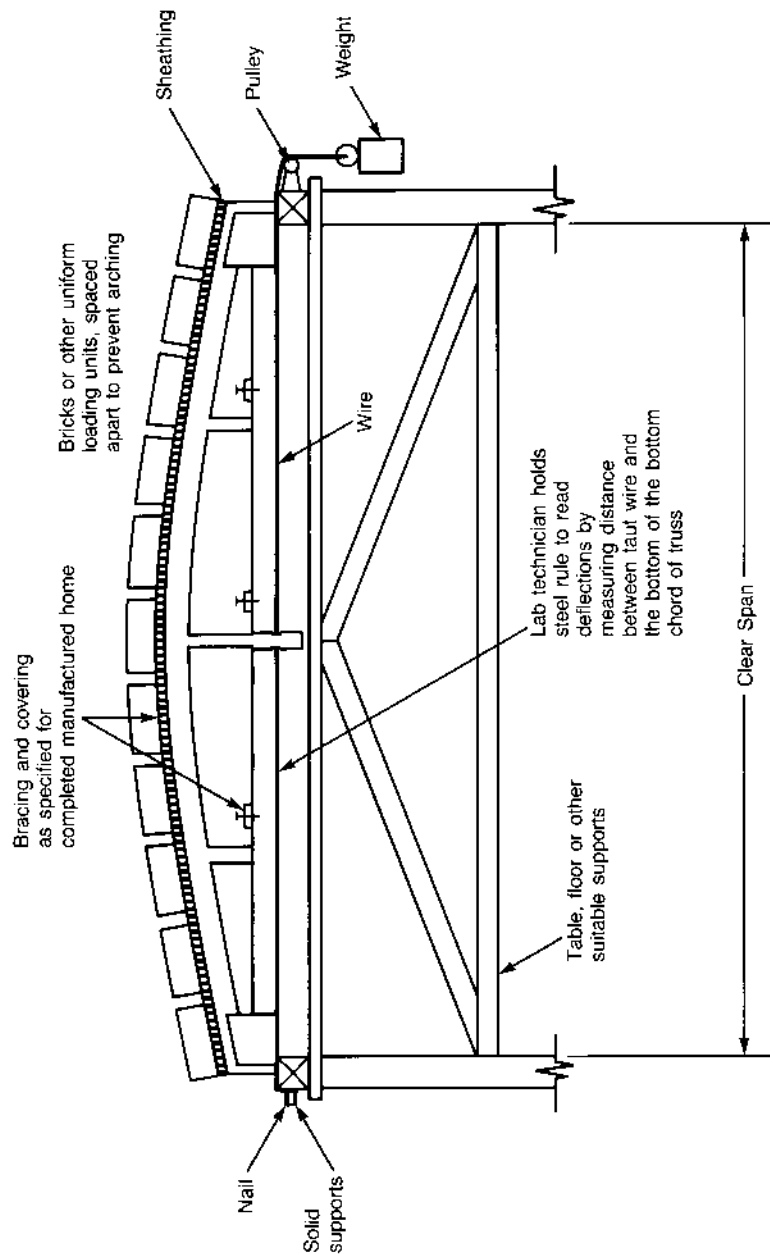


Figure A-1. Test Procedures for Roof Trusses

(ii) Apply load units to the top chord of the truss equal to the full dead load of roof and ceiling. Measure and record deflections.

(iii) Maintaining the dead load, add live load in approximate 1/4 design live load increments. Measure the deflections after each loading increment.

Apply incremental loads at a uniform rate such that approximately one-half hour is required to establish the total design load condition. Measure and record the deflections five minutes after loads have been applied. The maximum deflection due to design live load (deflection measured in step (iii) minus step (ii)) shall not exceed $L/180$, where L is a clear span measured in the same units.

(iv) Continue to load truss to dead load plus 1.75 times the design live load. Maintain this loading for 12 hours and inspect the truss for failure.

(v) Remove the total superimposed live load. Trusses not recovering to at least the $L/180$ position within 12 hours shall be considered as failing.

(2) *Uplift loads.* This test shall only be required for truss designs which may be critical under uplift load conditions.

(i) Measure and record initial elevation of the truss in an inverted test position at no load. Bottom chord of the truss shall be mounted in the horizontal position.

(ii) Apply the uplift load as stated in § 3280.305(c) to the bottom chord of the truss. Measure and record the deflections 5 minutes after the load has been applied.

(iii) Continue to load the truss to 1.75 times the design uplift load. Maintain this load for 3 hours and inspect the truss for failure.

(iv) Remove applied loads and within three hours the truss must recover to at least $L/180$ position, where L is a clear span measured in the same units.

(d) *Destructive test procedure.* (1) Destructive tests shall be performed on three trusses to generally evaluate the truss design.

(2) Noting figure A-1, apply the load units to the top chord of the truss assembly equal to full dead load of roof and ceiling. Measure and record deflections. Then apply load and record deflections in $\frac{1}{4}$ design live load increments at 10-minute intervals until 1.25 times design live load plus dead load has been reached.

(3) Additional loading shall then be applied continuously until failure occurs or the factor of safety times the design live load plus the dead load is reached.

(4) Assembly failure shall be considered as design live load deflection greater than the limits set in § 3280.305(d), rupture, fracture, or excessive yielding.

(5) The assembly shall be capable of sustaining the dead load plus the applicable factor of safety times the design live load (the applicable factor of safety for wood trusses shall be taken as 2.50).

(e) Trusses qualifying under the non-destructive test procedure. Tests § 3208.402(c) (1) and (2) (when required), shall be subject to a continuing qualification testing program acceptable to the Department. Trusses qualifying under the destructive test procedures, Tests § 3280.402 (c)(2) (when required), and (d), shall be subject to periodic tests only.

[40 FR 58752, Dec. 18, 1975, as amended at 42 FR 961, Jan. 4, 1977. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 58 FR 55008, Oct. 25, 1993]

§ 3280.403 Standard for windows and sliding glass doors used in manufactured homes.

(a) *Scope.* This section sets the requirements for prime windows and sliding glass doors except for windows used in entry doors. Windows so mounted are components of the door and thus are excluded from this standard.

(b) *Standard.* All primary windows and sliding glass doors shall comply with AAMA Standard 1701.2-1985, Primary Window and Sliding Glass Door Voluntary Standard for Utilization in Manufactured Housing, except that by January 17, 1995, the exterior and interior pressure tests shall be conducted at the design wind loads required for components and cladding specified in § 3280.305(c)(1).

(c) *Installation.* All primary windows and sliding glass doors shall be installed in a manner which allows proper operation and provides protection against the elements (see § 3280.307).

(d) *Glass.* (1) Safety glazing materials, where used, shall meet ANSI Z97.1-1984, "Safety Performance Specifications and Methods of Test for Safety Glazing Materials Used in Buildings."

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(2) Sealed insulating glass, where used, shall meet all performance requirements for Class C in accordance with ASTM E-774-92, Standard Specification for Sealed Insulating Glass Units. The sealing system shall be qualified in accordance with ASTM E-773-88 Standard Test Methods for Seal Durability of Sealed Insulating Glass Units. Each glass unit shall be permanently identified with the name of the insulating glass manufacturer.

(e) *Certification.* All primary windows and sliding glass doors to be installed in manufactured homes shall be certified as complying with AAMA Standard 1701.2-1985. As of January 17, 1995, this certification must be based on tests conducted at the design wind loads specified in § 3280.305(c)(1).

(1) All such windows and doors shall show evidence of certification by affixing a quality certification label to the product in accordance with ANSI Z34.1-1987, "For Certification-Third-Party Certification Program."

(2) In determining certifiability of the products, an independent quality assurance agency shall conduct preproduction specimen tests in accordance with AAMA 1702.2-1985. Further, such agency shall inspect the product manufacturer's facility at least twice per year.

(f) *Protection of primary window and sliding glass door openings in high wind areas.* For homes designed to be located in Wind Zones II and III, manufacturers shall design exterior walls surrounding the primary window and sliding glass door openings to allow for the installation of shutters or other protective covers, such as plywood, to cover these openings. Although not required, the Department encourages manufacturers to provide the shutters or protective covers and to install receiving devices, sleeves, or anchors for fasteners to be used to secure the shutters or protective covers to the exterior walls. If the manufacturer does not provide shutters or other protective covers to cover these openings, the manufacturer must provide to the homeowner instructions for at least one method of protecting primary window and sliding glass door openings. This method must be capable of resisting the design wind pressures specified

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in § 3280.305 without taking the home out of conformance with the standards in this part. These instructions must be included in the printed instructions that accompany each manufactured home. The instructions shall also indicate whether receiving devices, sleeves, or anchors, for fasteners to be used to secure the shutters or protective covers to the exterior walls, have been installed or provided by the manufacturer.

[52 FR 4583, Feb. 12, 1987, as amended at 52 FR 35543, Sept. 22, 1987; 58 FR 55009, Oct. 25, 1993; 59 FR 2474, Jan. 14, 1994]

§ 3280.404 Standard for egress windows and devices for use in manufactured homes.

(a) *Scope and purpose.* The purpose of this section is to establish the requirements for the design, construction, and installation of windows and approved devices intended to be used as an emergency exit during conditions encountered in a fire or similar disaster.

(b) *Performance.* Egress windows including auxiliary frame and seals, if any, shall meet all requirements of AAMA Standard 1701.2-1985, Primary Window and Sliding Glass Door Voluntary Standard for Utilization in Manufactured Housing and AAMA Standard 1704-1985, Voluntary Standard Egress Window Systems for Utilization in Manufactured-Housing, except that by January 17, 1995, the exterior and interior pressure tests for components and cladding shall be conducted at the design wind loads required by § 3280.305(c)(1).

(c) *Installation.* (1) The installation of egress windows or devices shall be installed in a manner which allows for proper operation and provides protection against the elements. (See § 3280.307.)

(2) An operational check of each installed egress window or device shall be made at the manufactured home factory. All egress windows and devices shall be openable to the minimum required dimension without binding or requiring the use of tools. Any window or device failing this check shall be repaired or replaced. A repaired window shall conform to its certification. Any repaired or replaced window or device shall pass the operational check.

(d) *Operating instructions.* Operating instructions shall be affixed to each egress window and device and carry the legend "Do Not Remove."

(e) *Certification of egress windows and devices.* Egress windows and devices shall be listed in accordance with the procedures and requirements of AAMA Standard 1704-1985. As of January 17, 1995, this certification must be based on tests conducted at the design wind loads specified in § 3280.305(c)(1).

(f) *Protection of egress window openings in high wind areas.* For homes designed to be located in Wind Zones II and III, manufacturers shall design exterior walls surrounding the egress window openings to allow for the installation of shutters or other protective covers, such as plywood, to cover these openings. Although not required, the Department encourages manufacturers to provide the shutters or protective covers and to install receiving devices, sleeves, or anchors for fasteners to be used to secure the shutters or protective covers to the exterior walls. If the manufacturer does not provide shutters or other protective covers to cover these openings, the manufacturer must provide to the homeowner instructions for at least one method of protecting egress window openings. This method must be capable of resisting the design wind pressures specified in § 3280.305 without taking the home out of conformance with the standards in this part. These instructions must be included in the printed instructions that accompany each manufactured home. The instructions shall also indicate whether receiving devices, sleeves, or anchors, for fasteners to be used to secure the shutters or protective covers to the exterior walls, have been installed or provided by the manufacturer.

[52 FR 4583, Feb. 12, 1987, as amended at 59 FR 2474, Jan. 14, 1994]

§ 3280.405 Standard for swinging exterior passage doors for use in manufactured homes.

(a) *Introduction.* This standard applies to all exterior passage door units, excluding sliding doors and doors used for access to utilities and compartments. This standard applies only to the door

frame consisting of jambs, head and sill and the attached door or doors.

(b) *Performance requirements.* The design and construction of exterior door units shall meet all requirements of AAMA 1702.2-1985, Swinging Exterior Passage Doors Voluntary Standard for Utilization in Manufactured—Housing.

(c) *Materials and methods.* Any material or method of construction shall conform to the performance requirements as outlined in paragraph (b) of this section. Wood materials or wood based materials shall also conform to the following:

(1) *Wood.* Doors shall conform to the type 1 requirements of ANSI/NWWDA I.S.1-87, Wood Flush Doors.

(2) *Plywood.* Plywood shall be exterior type and preservative treated in accordance with NWWDA I.S.4-81, Water Repellent Preservative Non-Pressure Treatment for Millwork.

(d) *Exterior doors.* All swinging exterior doors shall be installed in a manner which allows proper operation and provides protection against the elements (*see* § 3280.307).

(e) *Certification.* All swinging exterior doors to be installed in manufactured homes shall be certified as complying with AAMA Standard 1702.2-1985.

(1) All such doors shall show evidence of certification by affixing a quality certification label to the product in accordance with ANSI Z34.1-1982, "For Certification-Third-Party Certification Program."

(2) In determining certifiability of the products, an independent quality assurance agency shall conduct preproduction specimen test in accordance with AAMA 1701.2-1985. Further, such agency shall inspect the product manufacturer's facility at least twice per year.

(f) *Protection of exterior doors in high wind areas.* For homes designed to be located in Wind Zones II and III, manufacturers shall design exterior walls surrounding the exterior door openings to allow for the installation of shutters or other protective covers, such as plywood, to cover these openings. Although not required, the Department encourages manufacturers to provide the shutters or protective covers and to install receiving devices, sleeves, or

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anchors for fasteners to be used to secure the shutters or protective covers to the exterior walls. If the manufacturer does not provide shutters or other protective covers to cover these openings, the manufacturer must provide to the homeowner instructions for at least one method of protecting exterior door openings. This method must be capable of resisting the design wind pressures specified in § 3280.305 without taking the home out of conformance with the standards in this part. These instructions must be included in the printed instructions that accompany each manufactured home. The instructions shall also indicate whether receiving devices, sleeves, or anchors, for fasteners to be used to secure the shutters or protective covers to the exterior walls, have been installed or provided by the manufacturer.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 52 FR 4583, Feb. 12, 1987; 52 FR 35543, Sept. 22, 1987; 58 FR 55009, Oct. 25, 1993; 59 FR 2474, Jan. 14, 1994]

§ 3280.406 Air chamber test method for certification and qualification of formaldehyde emission levels.

(a) *Preconditioning.* Preconditioning of plywood or particleboard panels for air chamber tests shall be initiated as soon as practicable but not in excess of 30 days after the plywood or particleboard is produced or surface-finished, whichever is later, using randomly selected panels.

(1) If preconditioning is to be initiated more than two days after the plywood or particleboard is produced or surface-finished, whichever is later, the panels must be dead-stacked or airtight wrapped until preconditioning is initiated.

(2) Panels selected for testing in the air chamber shall not be taken from the top or bottom of the stack.

(b) *Testing.* Testing shall be conducted in accordance with the Standard Test Method for Determining Formaldehyde Levels from Wood Products Under Defined Test Conditions Using a Large Chamber, ASTM E-1333-90, with the following exceptions:

(1) The chamber shall be operated indoors.

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(2) Plywood and particleboard panels shall be individually tested in accordance with the following loading ratios:

- (i) Plywood—0.29 Ft²/Ft³, and
- (ii) Particleboard—0.13 Ft²/Ft³.

(3) Temperature to be maintained inside the chamber shall be 77° plus or minus 2° F.

(4) The test concentration (C) shall be standardized to a level (C₀) at a temperature (t₀) of 77° F and 50% relative humidity (H₀) by the following formula:

$$C = C_0 \times [1 + Ax (H - H_0)] \times e^{-R(t - t_0) / (t_0)}$$

where:

C = Test formaldehyde concentration

C₀ = Standardized formaldehyde concentration

e = Natural log base

R = Coefficient of temperature (9799)

t = Actual test condition temperature (° K)

t₀ = Standardized temperature (° K)

A = Coefficient of humidity (0.0175)

H = Actual relative humidity (%)

H₀ = Standardized relative humidity (%)

The standardized level (C₀) is the concentration used to determine compliance with § 3280.308(a).

(5) The air chamber shall be inspected and recalibrated at least annually to insure its proper operation under test conditions.

[49 FR 32012, Aug. 9, 1984, as amended at 58 FR 55009, Oct. 25, 1993]

Subpart F—Thermal Protection

§ 3280.501 Scope.

This subpart sets forth the requirements for condensation control, air infiltration, thermal insulation and certification for heating and comfort cooling.

§ 3280.502 Definitions.

(a) The following definitions are applicable to subpart F only:

(1) *Pressure envelope* means that primary air barrier surrounding the living space which serves to limit air leakage. In construction using ventilated cavities, the pressure envelope is the interior skin.

(2) *Thermal envelope area* means the sum of the surface areas of outside walls, ceiling and floor, including all openings. The wall area is measured by

multiplying outside wall lengths by the inside wall height from floor to ceiling. The floor and ceiling areas are considered as horizontal surfaces using exterior width and length.

§ 3280.503 Materials.

Materials used for insulation shall be of proven effectiveness and adequate durability to assure that required design conditions concerning thermal transmission are attained.

§ 3280.504 Condensation control and installation of vapor retarders.

(a) *Ceiling vapor retarders.* (1) In Uo Value Zones 2 and 3, ceilings shall have a vapor retarder with a permanence of not greater than 1 perm (as measured by ASTM E-96-93 Standard Test Methods for Water Vapor Transmission of Materials) installed on the living space side of the roof cavity.

(2) For manufactured homes designed for Uo Value Zone 1, the vapor retarder may be omitted.

(b) *Exterior walls.* (1) Exterior walls shall have a vapor barrier not greater than 1 perm (dry cup method) installed on the living space side of the wall, or

(2) Unventilated wall cavities shall have an external covering and/or sheathing which forms the pressure envelope. The covering and/or sheathing shall have a combined permeance of not less than 5.0 perms. In the absence of test data, combined permeance may be computed using the formula: $P_{Total} = 1/[(1/P_1) + (1/P_2)]$

where P_1 and P_2 are the permeance values of the exterior covering and sheathing in perms.

Formed exterior siding applied in sections with joints not caulked or sealed shall not be considered to restrict water vapor transmission, or

(3) Wall cavities shall be constructed so that ventilation is provided to dissipate any condensation occurring in these cavities.

(c) *Attic or roof ventilation.* (1) Attic and roof cavities shall be vented in accordance with one of the following:

(i) A minimum free ventilation area of not less than 1/300 of the attic or roof cavity floor area. At least 50 percent of the required free ventilation area shall be provided by ventilators located in

the upper portion of the space to be ventilated. At least 40 percent shall be provided by eave, soffit or low gable vents. The location and spacing of the vent openings and ventilators shall provide cross-ventilation to the entire attic or roof cavity space. A clear air passage space having a minimum height of 1 inch shall be provided between the top of the insulation and the roof sheathing or roof covering. Baffles or other means shall be provided where needed to insure the 1 inch height of the clear air passage space is maintained.

(ii) A mechanical attic or roof ventilation system may be installed instead of providing the free ventilation area when the mechanical system provides a minimum air change rate of 0.02 cubic feet per minute (cfm) per sq. ft. of attic floor area. Intake and exhaust vents shall be located so as to provide air movement throughout space.

(2) Single section manufactured homes constructed with metal roofs and having no sheathing or underlayment installed, are not required to be provided with attic or roof cavity ventilation provided that the air leakage paths from the living space to the roof cavity created by electrical outlets, electrical junctions, electrical cable penetrations, plumbing penetrations, flue pipe penetrations and exhaust vent penetrations are sealed.

(3) Parallel membrane roof section of a closed cell type construction are not required to be ventilated.

(4) The vents provided for ventilating attics and roof cavities shall be designed to resist entry of rain and insects.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 58 FR 55009, Oct. 25, 1993]

§ 3280.505 Air infiltration.

(a) *Envelope air infiltration.* The opaque envelope shall be designed and constructed to limit air infiltration to the living area of the home. Any design, material, method or combination thereof which accomplishes this goal may be used. The goal of the infiltration control criteria is to reduce heat loss/heat gain due to infiltration as much as possible without impinging on

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health and comfort and within the limits of reasonable economics.

(1) *Envelope penetrations.* Plumbing, mechanical and electrical penetrations of the pressure envelope not exempted by this part, and installations of window and door frames shall be constructed or treated to limit air infiltration. Penetrations of the pressure envelope made by electrical equipment, other than distribution panel boards and cable and conduit penetrations, are exempt from this requirement. Cable penetrations through outlet boxes are considered exempt.

(2) *Joints between major envelope elements.* Joints not designed to limit air infiltration between wall-to-wall, wall-to-ceiling and wall-to-floor connections

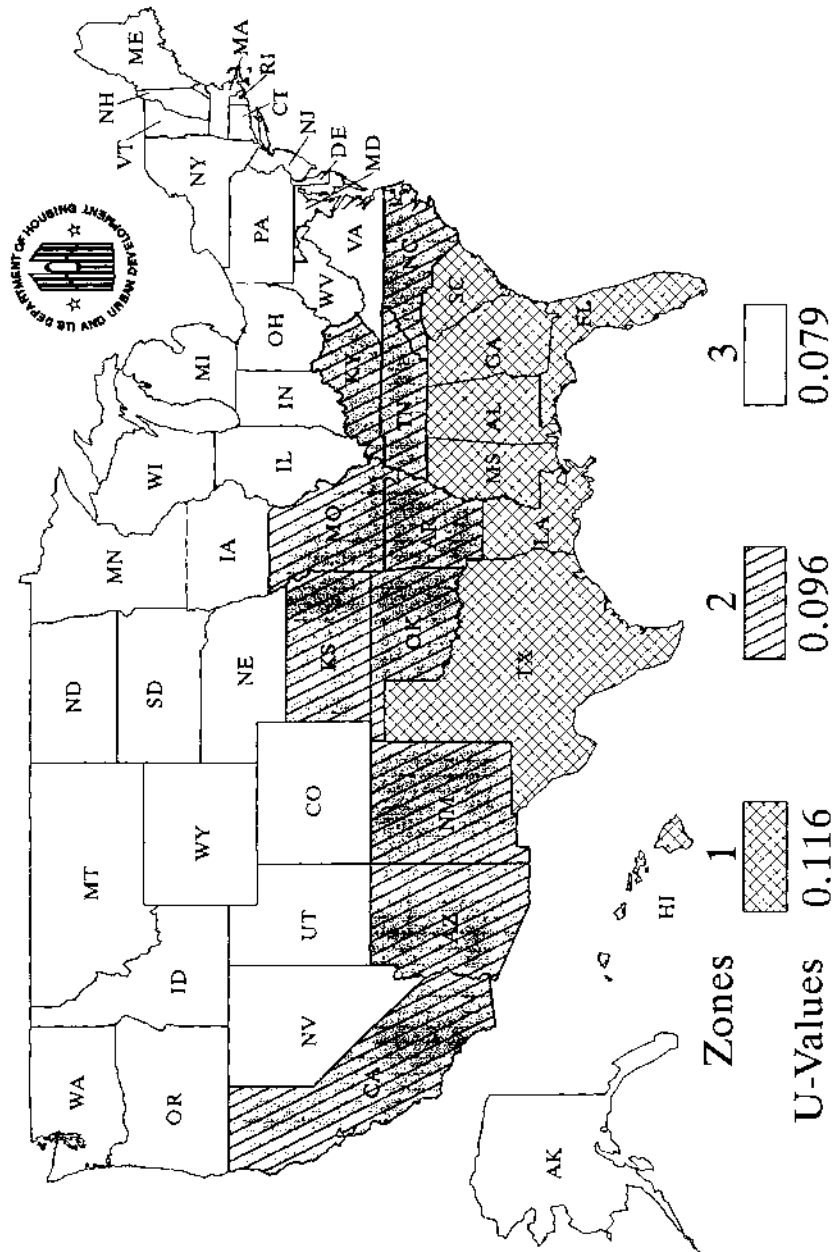
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shall be caulked or otherwise sealed. When walls are constructed to form a pressure envelope on the outside of the wall cavity, they are deemed to meet this requirement.

§ 3280.506 Heat loss/heat gain.

The manufactured home heat loss/heat gain shall be determined by methods outlined in §§ 3280.508 and 3280.509. The U_o (Coefficient of heat transmission) value zone for which the manufactured home is acceptable and the lowest outdoor temperature to which the installed heating equipment will maintain a temperature of 70 F shall be certified as specified in § 3280.510 of this subpart. The U_o value zone shall be determined from the map in figure 506.

U/O Value Zone Map for Manufactured Housing



(a) *Coefficient of heat transmission.* The overall coefficient of heat transmission (U_o) of the manufactured home for the respective zones and an indoor

design temperature of 70 F, including internal and external ducts, and excluding infiltration, ventilation and condensation control, shall not exceed

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the Btu/(hr.) (sq. ft.) (F) of the manufactured home envelope are as tabulated below:

Uo value zone	Maximum coefficient of heat transmission
1	0.116 Btu/(hr.) (sq. ft.) (F).
2	0.096 Btu/(hr.) (sq. ft.) (F).
3	0.079 Btu/(hr.) (sq. ft.) (F).

(b) To assure uniform heat transmission in manufactured homes, cavities in exterior walls, floors, and ceilings shall be provided with thermal insulation.

(c) Manufactured homes designed for Uo Value Zone 3 shall be factory equipped with storm windows or insulating glass.

[58 FR 55009, Oct. 25, 1993; 59 FR 15113, Mar. 31, 1994]

§ 3280.507 Comfort heat gain.

Information necessary to calculate the home cooling load shall be provided as specified in this part.

(a) *Transmission heat gains.* Homes complying with this section shall meet the minimum heat loss transmission coefficients specified in § 3280.506(a).

§ 3280.508 Heat loss, heat gain and cooling load calculations.

(a) Information, values and data necessary for heat loss and heat gain determinations shall be taken from the 1989 ASHRAE Handbook of Fundamentals, chapters 20 through 27. The following portions of those chapters are not applicable:

- 21.1 Steel Frame Construction
- 21.2 Masonry Construction
- 21.3 Floor Systems
- 21.14 Pipes
- 21.16 Tanks, Vessels and Equipment
- 21.17 Refrigerated Rooms and Buildings
- 22.15 Mechanical and Industrial Systems
- 23.13 Commercial Building Envelope Leakage
- 25.4 Calculation of Heat Loss from Crawl Spaces

(b) The calculation of the manufactured home's transmission heat loss coefficient (Uo) shall be in accordance with the fundamental principals of the 1989 ASHRAE Handbook of Fundamentals and, at a minimum, shall address all the heat loss or heat gain considerations in a manner consistent with the

calculation procedures provided in the document Overall U-values and Heating/Cooling Loads-Manufactured Homes—February 1992-PNL 8006, HUD User No. 0005945.

(c) Areas where the insulation does not fully cover a surface or is compressed shall be accounted for in the U-calculation (see § 3280.506). The effect of framing on the U-value must be included in the Uo calculation. Other low-R-value heat-flow paths ("thermal shorts") shall be explicitly accounted for in the calculation of the transmission heat loss coefficient if in the aggregate all types of low-R-value paths amount to more than 1% of the total exterior surface area. Areas are considered low-R-value heat-flow paths if:

(1) They separate conditioned and unconditioned space; and

(2) They are not insulated to a level that is at least one-half the nominal insulation level of the surrounding building component.

(d) *High efficiency heating and cooling equipment credit.* The calculated transmission heat loss coefficient (Uo) used for meeting the requirement in § 3280.506(a) may be adjusted for heating and cooling equipment above that required by the National Appliance Energy Conservation Act of 1987 (NAECA) by applying the following formula:

$$Uo \text{ adjusted} = Uo \text{ standard} \times [1 + (0.6) (\text{heating efficiency increase factor}) + (\text{cooling multiplier}) (\text{cooling efficiency increase factor})]$$

where:

Uo standard = Maximum Uo for Uo Zone required by § 3280.506(a)

Uo adjusted = Maximum Uo standard adjusted for high efficiency HVAC equipment
 Heating efficiency increase factor = The increase factor in heating equipment efficiency measured by the Annual Fuel Utilization Efficiency (AFUE), or the Heating Seasonal Performance Factor (HSPF) for heat pumps, above that required by NAECA (indicated as "NAECA" in formula). The formula is heating efficiency increase factor = AFUE (HSPF) home - AFUE (or HSPF) NAECA divided by AFUE (HSPF) NAECA.

Cooling efficiency increase factor = the increase factor in the cooling equipment efficiency measured by the Seasonal Energy Efficiency Ratio (SEER) above that required by NAECA.

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The formula being cooling equipment=SEER home—SEER NAECA divided by SEER NAECA.

The cooling multiplier for the Uo Zone is from the following table:

Uo zone	Cooling multiplier (Cm)
1	0.60 (Florida only).
1	0.20 (All other locations).
2	0.07.
3	0.03.

(e) U-values for any glazing (windows, skylights, and the glazed portions of any door) shall be based on tests using American Architectural Manufacturers Association (AAMA) 1503.1-1988, Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections. In the absence of tests, manufacturers shall use the residential window U values contained in table 13 in chapter 27, the 1989 ASHRAE Handbook of Fundamentals. In the event that the classification of the window type is indeterminate, the manufacturer shall use the classification which gives the higher U value. For the purpose of calculating Uo values, storm windows shall be treated as an additional pane.

(f) *Annual energy used based compliance.* As an alternative, homes may demonstrate compliance with the annual energy used implicit in the coefficient of heat transmission (Uo) requirement. The annual energy use determination must be based on generally accepted engineering practices. The general requirement is to demonstrate that the home seeking compliance approval has a projected annual energy

use, including both heating and cooling, less than or equal to a similar “base case” home that meets the standard. The energy use for both homes must be calculated based on the same assumptions; including assuming the same dimensions for all boundaries between conditioned and unconditioned spaces, site characteristics, usage patterns and climate.

[58 FR 55011, Oct. 25, 1993]

§ 3280.509 Criteria in absence of specific data.

In the absence of specific data, for purposes of heat-loss/gain calculation, the following criteria shall be used:

(a) *Infiltration heat loss.* In the absence of measured infiltration heat loss data, the following formula shall be used to calculate heat loss due to infiltration and intermittently operated fans exhausting to the outdoors. The perimeter calculation shall be based on the dimensions of the pressure envelope.

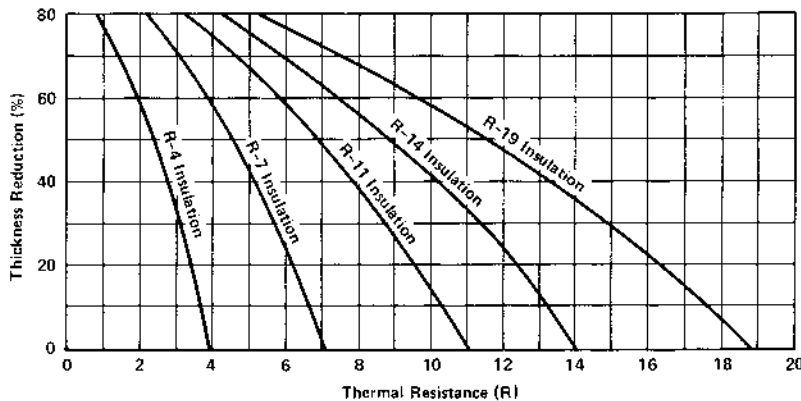
Infiltration Heat-Loss=0.7 (T) (ft. of perimeter), BTU/hr.

where: T=70 minus the heating system capacity certification temperature stipulated in the Heating Certificate, in F.

(b) *Framing areas.*

Wall 15 percent of wall area less windows and doors.
 Floor and Ceiling 10 percent of the area.

(c) *Insulation compression.* Insulation compressed to less than nominal thickness shall have its nominal R-values reduced for that area which is compressed in accordance with the following graph:



When insulation is installed over the framing members the thermal performance of the insulation is reduced due to compression at the framing members. The Resistance value of the insulation between the framing members is reduced by 12.5 percent for framing members 16" O.C., 8.5 percent for framing members 24" O.C., and 4 percent for framing members 48" O.C.

(d) *Air supply ducts within floor cavity.* Air supply ducts located within a floor cavity shall be assumed to be heating or cooling the floor cavity to living space temperatures unless the duct is structurally isolated by the framing system or thermally insulated from the rest of the floor cavity with a thermal insulation at least equal to R-4.

(e) *Air supply ducts within ceiling cavity.* Where supply ducts are located in ceiling cavities, the influence of the duct on cavity temperatures shall be considered in calculating envelope heat loss or heat gain.

(f) The supply duct loss (and/or heat gain where applicable—See § 3280.511) shall be calculated using the actual duct surface area and the actual thickness of insulation between the duct and outside of the manufactured home. If there is an air space of at least 1/2 inch between the duct and the insulation, heat loss/gain need not be calculated if the cavity in which the duct is located is assumed to be at living space temperature. The average temperature inside the supply duct, including ducts installed outside the manufactured home, shall be assumed to be 130 F for

purposes of calculation of heat loss and 60 F for heat gain.

(g) *Return air cavities.* Cavities used as return air plenums shall be considered to be at living space temperature.

§ 3280.510 Heat loss certificate.

The manufactured home manufacturer shall permanently affix the following "Certificate" to an interior surface of the home that is readily visible to the homeowner. The "Certificate" shall specify the following:

(a) *Heating zone certification.* The design zone at which the manufactured home heat loss complies with § 3280.506(a).

(b) *Outdoor certification temperature.* The lowest outdoor temperature at which the installed heating equipment will maintain a 70°F temperature inside the home without storm sash or insulating glass for Zones 1 and 2, and with storm sash or insulating glass for Zone 3 and complying with § 3280.508 and § 3280.509.

(c) *Operating economy certification temperature.* The temperature to be specified for operating economy and energy conservation shall be 20°F or 30% of the design temperature difference, whichever is greater, added to the temperature specified as the heating system capacity certification temperature without storm windows or insulating glass in Zones 1 and 2 and with storm windows or insulating glass in Zone 3. Design temperature difference is 70°

minus the heating system capacity certification temperature in degrees Fahrenheit.

HEATING CERTIFICATE

Home Manufacturer _____
Plant Location _____
Home Model _____

(Include Uo Value Zone Map)

This manufactured home has been thermally insulated to conform with the requirements of the Federal Manufactured Home Construction and Safety Standards for all locations within Uo Value Zone _____.

Heating Equipment Manufacturer _____
Heating Equipment Model _____

The above heating equipment has the capacity to maintain an average 70F temperature in this home at outdoor temperatures of [see paragraph (b) of this section] F. To maximize furnace operating economy and to conserve energy, it is recommended that this home be installed where the outdoor winter design temperature (97 1/2%) is not higher than [see paragraph (c) of this section] F degrees Fahrenheit.

The above information has been calculated assuming a maximum wind velocity of 15 MPH at standard atmospheric pressure.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 58 FR 55011, Oct. 25, 1993]

§ 3280.511 Comfort cooling certificate and information.

(a) The manufactured home manufacturer shall permanently affix a "Comfort Cooling Certificate" to an interior surface of the home that is readily visible to the home owner. This certificate may be combined with the heating certificate required in § 3280.510. The manufacturer shall comply with one of the following three alternatives in providing the certificate and additional information concerning the cooling of the manufactured home:

(1) Alternative I. If a central air conditioning system is provided by the home manufacturer, the heat gain calculation necessary to properly size the air conditioning equipment shall be in accordance with procedures outlined in chapter 22 of the 1989 ASHRAE Handbook of Fundamentals, with an assumed location and orientation. The following shall be supplied in the Comfort Cooling Certificate:

Air Conditioner Manufacturer _____

Air Conditioner Model _____
Certified Capacity _____ BTU/Hr. in accordance with the appropriate Air Conditioning and Refrigeration Institute Standards

The central air conditioning system provided with this home has been sized, assuming an orientation of the front (hitch) end of the home facing _____ and is designed on the basis of a 75 °F indoor temperature and an outdoor temperature of _____ °F dry bulb and _____ °F wet bulb.

EXAMPLE ALTERNATE I

COMFORT COOLING CERTIFICATE

Manufactured Home Mfg _____
Plant Location _____
Manufactured Home Model _____
Air Conditioner Manufacturer _____

Certified Capacity _____ BTU/Hr. in accordance with the appropriate Air Conditioning and Refrigeration Institute Standards.

The central air conditioning system provided with this home has been sized assuming an orientation of the front (hitch end) of the home facing _____. On this basis, the system is designed to maintain an indoor temperature of 75 °F when outdoor temperatures are _____ °F dry bulb and _____ °F wet bulb.

The temperature to which this home can be cooled will change depending upon the amount of exposure of the windows to the sun's radiant heat. Therefore, the home's heat gains will vary dependent upon its orientation to the sun and any permanent shading provided. Information concerning the calculation of cooling loads at various locations, window exposures and shadings are provided in chapter 22 of the 1989 edition of the ASHRAE Handbook of Fundamentals.

(2) Alternative 2. For each home suitable for a central air cooling system, the manufacturer shall provide the following statement: "This air distribution system of this home is suitable for the installation of a central air conditioning system."

Example Alternate 2

COMFORT COOLING CERTIFICATE

Manufactured Home Manufacturer _____
Plant Location _____
Manufactured Home Model _____

This air distribution system of this home is suitable for the installation of central air conditioning.

The supply air distribution system installed in this home is sized for Manufactured Home Central Air Conditioning System of up to _____ B.T.U./Hr. rated capacity which are certified in accordance with the appropriate Air Conditioning and Refrigeration Institute Standards. When the air circulators of such air conditioners are rated

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at 0.3 inch water column static pressure or greater for the cooling air delivered to the manufactured home supply air duct system.

Information necessary to calculate cooling loads at various locations and orientations is provided in the special comfort cooling information provided with this manufactured home.

(3) Alternative 3. If the manufactured home is not equipped with an air supply duct system, or if the manufacturer elects not to designate the home as being suitable for the installation of a central air conditioning system, the manufacturer shall provide the following statement: "This air distribution system of this home has not been designed in anticipation of its use with a central air conditioning system."

Example Alternate 3

COMFORT COOLING CERTIFICATE

Manufactured Home Mfg _____
Plant Location _____
Manufactured Home Model _____

The air distribution system of this home has not been designed in anticipation of its use with a central air conditioning system.

(b) For each home designated as suitable for central air conditioning the manufacturer shall provide the maximum central manufactured home air conditioning capacity certified in accordance with the ARI Standard 210/240-89 Unitary Air-Conditioning and Air-Source Heat Pump Equipment and in accordance with §3280.715(a)(3). If the capacity information provided is based on entrances to the air supply duct at other than the furnace plenum, the manufacturer shall indicate the correct supply air entrance and return air exit locations.

(c) Comfort cooling information. For each manufactured home designated, either "suitable for" or "provided with" a central air conditioning system, the manufacturer shall provide comfort cooling information specific to the manufactured home necessary to complete the cooling load calculations. The comfort cooling information shall include a statement to read as follows:

To determine the required capacity of equipment to cool a home efficiently and economically, a cooling load (heat gain) calculation is required. The cooling load is dependent on the orientation, location and the structure of the home. Central air conditioners operate most efficiently and provide

the greatest comfort when their capacity closely approximates the calculated cooling load. Each home's air conditioner should be sized in accordance with chapter 22 of the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) Handbook of Fundamentals, 1989 Edition, once the location and orientation are known.

INFORMATION PROVIDED BY THE MANUFACTURER NECESSARY TO CALCULATE SENSIBLE HEAT GAIN

Table with 2 columns: Description and Unit (U). Rows include Walls (without windows and doors), Ceilings and roofs of light color, Ceilings and roofs of dark color, Floors, Air ducts in floor, Air ducts in ceiling, and Air ducts installed outside the home.

Information necessary to calculate duct areas.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 58 FR 55012, Oct. 25, 1993]

Subpart G—Plumbing Systems

§ 3280.601 Scope.

Subpart G of this standard covers the plumbing materials, fixtures, and equipment installed within or on manufactured homes. It is the intent of this subpart to assure water supply, drain, waste and vent systems which permit satisfactory functioning and provide for health and safety under all conditions of normal use.

§ 3280.602 Definitions.

The following definitions are applicable to subpart G only:

Accessible, when applied to a fixture, connection, appliance or equipment, means having access thereto, but which may require removal of an access panel or opening of a door.

Air gap (water distribution system) means the unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture, water supplied appliances, or other device and the flood level rim of the receptacle.

Anti-siphon trap vent device means a device which automatically opens to admit air to a fixture drain above the connection of the trap arm so as to prevent siphonage, and closes tightly when the pressure within the drainage

system is equal to or greater than atmospheric pressure so as to prevent the escape of gases from the drainage system into the manufactured home.

Backflow means the flow of water or other liquids, mixtures, or substances into the distributing pipes of a potable supply of water from any source or sources other than its intended sources.

Backflow connection means any arrangement whereby backflow can occur.

Backflow preventer means a device or means to prevent backflow.

Branch means any part of the piping system other than a riser, main or stack.

Common vent means a vent connecting at the junction of fixture drains and serving as a vent for more than one fixture.

Continuous vent means a vertical vent that is a continuation of the drain to which it connects.

Continuous waste means a drain from two or more fixtures connected to a single trap.

Critical level means a point established by the testing laboratory (usually stamped on the device by the manufacturer) which determines the minimum elevation above the flood level rim of the fixture or receptacle served on which the device may be installed. When a backflow prevention device does not bear a critical level marking, the bottom of the vacuum breaker, combination valve, or of any such approved or listed device shall constitute the critical level.

Cross connection means any physical connection or arrangement between two otherwise separate systems or sources, one of which contains potable water and the other either water, steam, gas or chemical of unknown or questionable safety whereby there may be a flow from one system or source to the other, the direction of flow depending on the pressure differential between the two systems.

Developed length means that length of pipe measured along the center line of the pipe and fittings.

Diameter, unless otherwise specifically stated, means the nominal (inside) diameter designated commercially.

Drain means a pipe that carries waste, water, or water-borne waste in a drainage system.

Drain connector means the removable extension, consisting of all pipes, fittings and appurtenances, from the drain outlet to the drain inlet serving the manufactured home.

Drain outlet means the lowest end of the main or secondary drain to which a sewer connection is made.

Drainage system means all piping within or attached to the structure that conveys sewage or other liquid waste to the drain outlet, not including the drain connector.

Fixture drain means the drain from the trap of a fixture to the junction of that drain with any other drain pipe.

Fixture supply means the water supply pipe connecting a fixture to a branch water supply pipe or directly to a main water supply pipe.

Flood-level means the level in the receptacle over which water would overflow to the outside of the receptacle.

Flooded means the condition which results when the liquid in a container or receptacle rises to the flood-level.

Flush tank means that portion of a water closet that is designed to contain sufficient water to adequately flush the fixture.

Flush valve means a device located at the bottom of a flush tank for flushing a water closet.

Flushometer tank: means a device integrated within an air accumulator vessel which is designed to discharge a predetermined quantity of water to fixtures for flushing purposes.

Flushometer valve means a device which discharges a predetermined quantity of water to a fixture for flushing purposes and is closed by direct water pressure.

Grade means the fall (slope) of a pipe in reference to a horizontal plane expressed in inches per foot length.

Horizontal branch means any pipe extending laterally, which receives the discharge from one or more fixture drains and connects to the main drain.

Horizontal pipe means any pipe or fitting which makes an angle of not more than 45 degrees with the horizontal.

Individual vent means a pipe installed to vent a fixture drain.

Inlet coupling means the terminal end of the water system to which the water service connection is attached. It may be a swivel fitting or threaded pipe end.

Main means the principal artery of the system to which branches may be connected.

Main drain means the lowest pipe of a drainage system which receives sewage from all the fixtures within a manufactured home and conducts these wastes to the drain outlet.

Main vent means the principal artery of the venting system to which vent branches may be connected.

Offset means a combination of pipe and/or fittings that brings one section of the pipe out of line but into a line parallel with the other section.

Pitch. See *Grade*.

Plumbing appliance: means any one of a special class of plumbing fixture which is intended to perform a special plumbing function. Its operation and/or control may be dependent upon one or more energized components, such as motors, control, heating elements, or pressure or temperature-sensing elements. Such fixture may operate automatically through one or more of the following actions: A time cycle, a temperature range, a pressure range, a measured volume or weight, or the fixture may be manually adjusted or controlled by the user or operator.

Plumbing appurtenance: means a manufactured device, or a prefabricated assembly, or an on-the-job assembly of component parts, and which is an adjunct to the basic piping system and plumbing system and plumbing fixtures. An appurtenance demands no additional water supply, nor does it add any discharge load to a fixture or the drainage system.

Plumbing fixtures means receptacles, devices, or appliances which are supplied with water or which receive liquid or liquid-borne wastes for discharge into the drainage system.

Plumbing system means the water supply and distribution pipes; plumbing fixtures, faucets and traps; soil, waste and vent pipes; and water-treating or water-using equipment.

Primary vent. See *main vent*.

Relief vent means an auxiliary vent which permits additional circulation of

air in or between drainage and vent systems.

Secondary vent means any vent other than the main vent or those serving each toilet.

Sewage means any liquid waste containing animal or vegetable matter in suspension or solution, and may include liquids containing chemicals in solution.

Siphonage means the loss of water seal from fixture traps resulting from partial vacuum in the drainage system which may be of either of the following two types, or a combination of the two:

(a) Self-siphonage resulting from vacuum in a fixture drain generated solely by the discharge of the fixture served by that drain, or,

(b) Induced siphonage resulting from vacuum in the drainage system generated by the discharge of one or more fixtures other than the one under observation.

Trap means a fitting or device designed and constructed to provide a liquid seal that will prevent the back passage of air without materially affecting the flow of liquid waste through it.

Trap arm means the portion of a fixture drain between a trap and its vent.

Trap seal means the verticle depth of liquid that a trap will retain.

Vacuum breaker. See *backflow preventer*.

Vent cap means the device or fitting which protects the vent pipe from foreign substance with an opening to the atmosphere equal to the area of the vent it serves.

Vent system means that part of a piping installation which provides circulation of air within a drainage system.

Vertical pipe means any pipe or fitting which makes an angle of not more than 45 degrees with the vertical.

Water closet drain means that part of the drainage piping which receives the discharge from each individual water closet.

Water connection means the fitting or point of connection for the manufactured home water distribution system designed for connection to a water supply.

Water connector means the removable extension connecting the manufactured home water distribution system to the water supply.

Water distribution system means potable water piping within or permanently attached to the manufactured home.

Wet vent means a vent which also serves as a drain for one or more fixtures.

Wet vented drainage system means the specially designed system of drain piping that also vents one or more plumbing fixtures by means of a common waste and vent pipe.

Whirlpool bathtub means a plumbing appliance consisting of a bathtub fixture which is equipped and fitted with a circulation piping system, pump, and other appurtenances and is so designed to accept, circulate, and discharge bathtub water upon each use.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 52 FR 4584, Feb. 12, 1987; 52 FR 47553, Dec. 15, 1987; 58 FR 55012, Oct. 25, 1993]

§ 3280.603 General requirements.

(a) *Minimum requirements.* Any plumbing system installed in a manufactured home shall conform, at least, with the provisions of this subpart.

(1) *General.* The plumbing system shall be of durable material, free from defective workmanship, and so designed and constructed as to give satisfactory service for a reasonable life expectancy.

(2) *Conservation.* Water closets shall be selected and adjusted to use the minimum quantity of water consistent with proper performance and cleaning.

(3) *Connection to drainage system.* All plumbing, fixtures, drains, appurtenances, and appliances designed or used to receive or discharge liquid waste or sewage shall be connected to the manufactured home drainage system in a manner provided by this standard.

(4) *Workmanship.* All design, construction, and workmanship shall be in conformance with accepted engineering practices and shall be of such character as to secure the results sought to be obtained by this standard.

(5) *Components.* Plumbing materials, devices, fixtures, fittings, equipment, appliances, appurtenance, and accessories intended for use in or attached to a manufactured home shall conform to one of the applicable standards referenced in § 3280.604. Where an applica-

ble standard is not referenced, or an alternative recognized standard is utilized, the plumbing component shall be listed by a nationally recognized testing laboratory, inspection agency or other qualified organization as suitable for the intended use.

(6) *Prohibited fittings and practices.* (i) Drainage or vent piping shall not be drilled and tapped for the purpose of making connections.

(ii) Except as specifically provided elsewhere in this standard, vent pipes shall not be used as waste or drain pipes.

(iii) Fittings, connections, devices, or methods of installation that obstruct or retard the flow of sewage, or air in the drainage or venting systems in an amount greater than the normal frictional resistance to flow shall not be used unless their use is acceptable in this standard or their use is accepted as having a desirable and acceptable function of ultimate benefit to the proper and continued functioning of the plumbing system.

(iv) Cracks, holes, or other imperfections in materials shall not be concealed by welding, brazing, or soldering or by paint, wax, tar, or other leak-sealing or repairing agents.

(v) Piping, fixtures or equipment shall be located so as not to interfere with the normal use or with the normal operation and use of windows, doors or other required facilities.

(vi) Galvanized pipe shall not be bent or welded.

(7) *Alignment of fittings.* All valves, pipes, and fittings shall be installed in correct relationship to the direction of flow.

(b) *Protective requirements.* (1) Cutting structural members. Structural members shall not be unnecessarily or carelessly weakened by cutting or notching.

(2) *Exposed piping.* All piping, pipe threads, hangers, and support exposed to the weather, water, mud, and road hazard, and subject to damage therefrom, shall be painted, coated, wrapped, or otherwise protected from deterioration.

(3) *Road damage.* Pipes, supports, drains, outlets, or drain hoses shall not extend or protrude in a manner where

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they could be unduly subjected to damage during transit.

(4) *Freezing.* All piping and fixtures subject to freezing temperatures shall be insulated or protected to prevent freezing, under normal occupancy. The manufacturer shall provide:

(i) Written installation instructions for the method(s) required for compliance to this section;

(ii) A statement in his installation instructions that if heat tape is used it shall be listed for use with manufactured homes;

(iii) A receptacle outlet for the use of a heat tape located on the underside of the manufactured home within 2 feet of the water supply inlet. The receptacle outlet provided shall not be placed on a branch circuit which is protected by a ground fault circuit interrupter.

(5) All piping, except the fixture trap, shall be designed to allow drainage.

(6) *Rodent resistance.* All exterior openings around piping and equipment shall be sealed to resist the entrance of rodents.

(7) Piping and electrical wiring shall not pass through the same holes in walls, floors or roofs. Plastic piping shall not be exposed to heat in excess of manufacturers recommendation or radiation from heat producing appliances.

[40 FR 58752, Dec. 18, 1975, as amended at 42 FR 54383, Oct. 5, 1977. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 58 FR 55012, Oct. 25, 1993]

§ 3280.604 **Materials.**

(a) *Minimum standards.* Materials, devices, fixtures, fittings, equipment, appliances, appurtenances and accessories shall conform to one of the standards in the following table and be free from defects. Where an appropriate standard is not indicated in the table or a standard not indicated in the table is preferred, the item may be used if it is listed. A listing is also required when so specified in other sections of this subpart.

(b) Where more than one standard is referenced for a particular material or component, compliance with only one of those standards is acceptable. Exceptions:

(1) When one of the reference standards requires evaluation of chemical,

toxicity or odor properties which are not included in the other standard, then conformance to the applicable requirements of each standard shall be demonstrated;

(2) When a plastic material or component is not covered by the Standards in the following table, it shall be certified as non-toxic in accordance with NSF14-1990, "Plastic Piping Components and Related Materials."

FERROUS PIPE AND FITTINGS

Gray Iron Threaded Fittings—ANSI/ASME B16.4-1992.

Malleable Iron Threaded Fittings—ANSI/ASME B16.3-1992.

Material and Property Standard for Special Cast Iron Fittings—IAPMO PS 5-84.

Welding and Seamless Wrought Steel Pipe—ANSI/ASME B36.10-1979.

Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless—ASTM A53-93.

Pipe Threads, General Purpose (Inch)—ANSI/ASME B1.20.1-1983.

Standard Specification for Cast Iron Soil Pipe and Fittings—ASTM A74-92.

Standard Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications—CISPI-301-90.

NONFERROUS PIPE AND FITTINGS

Standard Specification for Seamless Copper Pipe, Standard Sizes—ASTM B42-93.

Standard Specification for General Requirements for Wrought Seamless Copper and Copper-Alloy Tube—ASTM B251-93.

Standard Specification for Seamless Copper Water Tube—ASTM B 88-93.

Standard Specification for Copper Drainage Tube (DWV)—ASTM B306-92.

Wrought Copper and Copper Alloy Solder-Joint Pressure Fitting—ASME/ANSI B16.22-1989.

Wrought Copper and Wrought Copper Alloy Solder-Joint Drainage Fittings-DWV—ASME/ANSI B16.29-1986.

Cast Copper Alloy Solder-Joint Pressure Fittings—ANSI B16.18-1984.

Cast Copper Alloy Solder-Joint Drainage Fittings-DWV—ASME B16.23-1992.

Cast Copper Alloy Fittings for Flared Copper Tubes—ASME/ANSI B16.26-1988.

Standard Specification for Seamless Red Brass Pipe, Standard Sizes—ASTM B43-91.

Cast Bronze Threaded Fittings, Classes 125 and 250—ANSI/ASME B16.15-1985.

PLASTIC PIPE AND FITTINGS

Standard Specification Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic

Drain, Waste, and Vent Pipe and Fittings—ASTM D2661-91.

Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings—ASTM D2665-91b.

Standard Specification for Drain, Waste, and Vent (DWV) Plastic Fittings Patterns—ASTM D3311-92.

Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40, Plastic Drain, Waste, and Vent Pipe With a Cellular Core—ASTM F628-91.

Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Hot- and Cold-Water Distribution Systems—ASTM D2846-92.

Standard Specification for Polybutylene (PB) Plastic Hot- and Cold-Water Distribution Systems—ASTM D3309-92a.

Plastic Piping Components and Related Materials—ANSI/NSF 14-1990.

MISCELLANEOUS

Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings—ASTM C564-88.

Backflow Valves—ANSI A112.14.1-1975.

Plumbing Fixture Setting Compound—TTP 1536A-1975.

Material and Property Standard for Cast Brass and Tubing P-Traps—IAPMO PS 2-89.

Relief Valves and Automatic Gas Shutoff Devices for Hot Water Supply Systems—*ANSI Z21.22-1986, With Addendum Z21.22a-1990.

Standard Specification for Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings—ASTM D2235-88.

Standard Specification for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping Systems—ASTM D2564-91a.

Specification for Neoprene Rubber Gaskets for HUB and Spigot Cast Iron Soil Pipe and Fittings—CISPI-HSN-85.

Plumbing System Components for Manufactured Homes and Recreational Vehicles—ANSI/NSF 24-1988.

Material and Property Standard for Diversion Tees and Twin Waste Elbow—IAPMO PS 9-84.

Material and Property Standard for Flexible Metallic Water Connectors—IAPMO PS 14-89.

Material and Property Standard for Dishwasher Drain Airgaps—IAPMO PS 23-89.

Material and Property Standards for Backflow Prevention Assemblies—IAPMO PS 31-91.

PLUMBING FIXTURES

Plumbing Fixtures (General Specifications)—FS WW-P-541E/GEN-1980.

Vitreous China Plumbing Fixtures—ANSI/ASME A112.19.2(M)-1990.

Enameled Cast Iron Plumbing Fixtures—ANSI/ASME A112.19.1M-1987.

Porcelain Enameled Formed Steel Plumbing Fixtures—ANSI/ASME A112.19.4(M)-1984.

Plastic Bathtub Units With Addenda Z124.1a-1990 and Z124.16-1991—ANSI Z124.1-1987.

Standard for Porcelain Enameled Formed Steel Plumbing Fixtures—IAPMO TSC 22-85.

Plastic Shower Receptors and Shower Stalls With Addendum Z124.2a-1990—ANSI Z124.2-1987.

Stainless Steel Plumbing Fixtures (Designed for Residential Use)—ANSI/ASME A112.19.3M-1987.

Material and Property Standard for Drains for Prefabricated and Precast Showers—IAPMO PS 4-90.

Plastic Lavatories with addendum Z124.3a-1990—ANSI Z124.3-1986.

Safety Performance Specifications and Methods of Test for Safety Glazing Materials Used in Building—ANSI Z97.1-1984.

Plumbing Fixture Fittings—ANSI/ASME A112.18.1M-1989.

Trim for Water Closet, Bowls, Tanks, and Urinals—ANSI A112.19.5-1979.

Plastic Water Closets, Bowls and Tanks with Addenda Z124.4a-1990—ANSI Z124.4-1986.

Whirlpool Bathtub Appliances—ASME/ANSI A112.19.7M-1987.

Performance Requirements for Individual Thermostatic Pressure Balancing and Combination Control for Bathing Facilities—ASSE 1016-1988, (ANSI 1990).

Performance Requirements for Pressurized Flushing Devices (Flushometers) For Plumbing Fixtures—ASSE 1037-1990 (ANSI-1990).

Performance Requirements for Water Closet Flush Tank Fill Valves (Ballcocks)—ASSE 1002 Revision 5-1986, (ANSI/ASSE-1979).

Performance Requirements for Hand-held Showers—ASSE 1014-1989 (ANSI-1990).

Hydrants for Utility and Maintenance Use—ANSI/ASME A112.21.3M-1985.

Performance Requirements for Home Laundry Equipment—ASSE 1007-1986.

Performance Requirements for Hot Water Dispensers, Household Storage Type Electrical—ASSE 1023-ANSI/ASSE-1979.

Plumbing Requirements for Residential Use (Household) Dishwashers—ASSE 1006, ASSE/ANSI-1986.

Performance Requirements for Household Food Waste Disposer Units—ASSE 1008-1986.

Performance Requirements for Temperature Activated Mixing Valves for Primary Domestic Use—ASSE 1017-1986.

Water Hammer Arresters—ANSI A112.26.1-1969 (R 1975).

Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, Hot Tubs and Whirlpool Bathtub Appliances—ASME/ANSI A112.19.8M-1989.

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Air Gaps in Plumbing Systems—ASME A112.1.2-1991.
Performance Requirements for Diverters for Plumbing Faucets with Hose Spray, Anti-Siphon Type, Residential Applications—ASSE 1025—ANSI/ASSE-1978.
Performance Requirements for Pipe Applied Atmospheric Type Vacuum Breakers—ASSE 1001 ASSE/ASNI-1990.
Performance Requirements for Hose Connection Vacuum Breakers—ASSE 1011-1981 (ANSI-1982).
Performance Requirements for Wall Hydrants, Frost Proof Automatic Draining, Anti-Backflow Types—ANSI/ASSE 1019-1978.

[58 FR 55013, Oct. 25, 1993]

§ 3280.605 Joints and connections.

(a) *Tightness.* Joints and connections in the plumbing system shall be gas-tight and watertight for the pressures required under testing procedures.

(1) *Assembling of pipe.* All joints and connections shall be correctly assembled for tightness. Pipe threads shall be fully engaged with the threads of the fitting. Plastic pipe and copper tubing shall be inserted to the full depth of the solder cup or welding sockets of each fitting. Pipe threads and slip joints shall not be wrapped with string, paper, putty, or similar fillers.

(2) *Threaded joints.* Threads for screw pipe and fittings shall conform to the approved or listed standard. Pipe ends shall be reamed out to size of bore. All burrs, chips, cutting oil and foreign matter shall be removed. Pipe joint cement or thread lubricant shall be of approved type and applied to male threads only.

(3) *Solder joints.* Solder joints for tubing shall be made with approved or listed solder type fittings. Surfaces to be soldered shall be cleaned bright. The joints shall be properly fluxed with noncorrosive paste type flux and, for manufactured homes to be connected to a public water system, made with solder having not more than 0.2 percent lead.

(4) *Plastic pipe, fittings and joints.* Plastic pipe and fittings shall be joined by installation methods recommended by the manufacturer or in accordance with the provisions of a recognized, approved, or listed standard.

(5) *Union joints.* Metal unions in water piping shall have metal-to-metal ground seats.

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(6) *Flared joints.* Flared joints for soft-copper water tubing shall be made with approved or listed fittings. The tubing shall be expanded with a proper flaring tool.

(7) *Cast iron soil pipe joints.* Approved or listed cast iron pipe may be joined as follows:

(i) Approved or listed hubless pipe as per the manufacturer's recommendation.

(ii) Hub and plain-end soil pipe may be joined by compression fittings per the manufacturer's recommendation.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 53 FR 23611, June 23, 1988]

§ 3280.606 Traps and cleanouts.

(a) *Traps*—(1) *Traps required.* Each plumbing fixture, except listed toilets, shall be separately trapped by approved water seal "P" traps. All traps shall be effectively vented.

(2) *Dual fixtures.* A two-compartment sink, two single sinks, two lavatories, or a single sink and a single lavatory with waste outlets not more than 30 inches apart and in the same room and flood level rims at the same level may be connected to one "P" trap and may be considered as a single fixture for the purpose of drainage and vent requirements.

(3) *Prohibited traps.* A trap which depends for its seal upon concealed interior partitions shall not be used. Full "S" traps, bell traps, drum traps, crown-vented traps, and running traps are prohibited. Fixtures shall not be double-trapped.

(4) *Material and design.* Each trap shall be self-cleaning with a smooth and uniform interior waterway. Traps shall be manufactured of cast iron, cast brass, or drawn brass tubing of not less than No. 20 Brown and Sharpe gage, or approved or listed plastic, or other approved or listed material. Union joints for a trap shall be beaded to provide a shoulder for the union nut. Each trap shall have the manufacturer's name stamped or cast in the body of the trap, and each tubing trap shall show the gage of the tubing.

(5) *Trap seal.* Each "P" trap shall have a water seal of not less than 2 inches and not more than 4 inches and shall be set true to its seal.

(6) *Size.* Traps shall be not less than 1¼ inches in diameter. A trap shall not be larger than the waste pipe to which it is connected.

(7) *Location.* Each trap shall be located as close to its vent and to its fixture outlet as structural conditions will permit.

(8) *Length of tailpiece.* The vertical distance from a trap to the fixture outlet shall not exceed 24 inches.

(9) *Installation.* (i) *Grade of trap arm.* The piping between a "P" trap and the fixture tee or the vented waste line shall be graded ¼ inch per foot towards the vent and in no event shall have a slope greater than its diameter. The vent opening at fixture tees shall not be below the weir of the "P" trap outlet.

(ii) *Trap arm offset.* The piping between the "P" trap and vent may change direction or be offset horizontally with the equivalent of no more than 180 degrees total change in direction with a maximum of 90 degrees by any one fitting.

(iii) *Concealed traps.* Traps with mechanical joints shall be accessible for repair and inspection.

(iv) *Removability of traps, etc.* Traps shall be designed and installed so the "U" bend is removable without removing the strainers from the fixture. Continuous waste and tail pieces which are permanently attached to the "U" bend shall also be removable without removing the strainer from the fixture.

(b) *Cleanout openings—(1) Location of cleanout fittings.* (i) Cleanouts shall be installed if the drainage system cannot be cleaned through fixtures, drains, or vents. Cleanouts shall also be provided when fittings of more than 45 degrees are used to affect an offset except where long turn ells are used which provide sufficient "sweep" for cleaning.

(ii) A full size cleanout shall be installed at the upper end of any section of drain piping which does not have the required minimum slope of ¼ inch per foot grade.

(iii) A cleaning tool shall not be required to pass through more than 360 degrees of fittings, excluding removable "P" traps, to reach any part of the drainage system. Water closets may be removed for drainage system access.

(2) *Access to cleanouts.* Cleanouts shall be accessible through an unobstructed minimum clearance of 12 inches directly in front of the opening. Each cleanout fitting shall open in a direction opposite to the flow or at right angles to the pipe. Concealed cleanouts that are not provided with access covers shall be extended to a point above the floor or outside of the manufactured home, with pipe and fittings installed, as required, for drainage piping without sags and pockets.

(3) *Material.* Plugs and caps shall be brass or approved or listed plastic, with screw pipe threads.

(4) *Design.* Cleanout plugs shall have raised heads except that plugs at floor level shall have counter-sunk slots.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 58 FR 55014, Oct. 25, 1993]

§ 3280.607 Plumbing fixtures.

(a) *General requirements—(1) Quality of fixtures.* Plumbing fixtures shall have smooth impervious surfaces, be free from defects and concealed fouling surfaces, be capable of resisting road shock and vibration, and shall conform in quality and design to listed standards. Fixtures shall be permanently marked with the manufacturer's name or trademark.

(2) *Strainers.* The waste outlet of all plumbing fixtures, other than toilets, shall be equipped with a drain fitting that will provide an adequate unobstructed waterway.

(3) *Fixture connections.* Fixture tailpieces and continuous wastes in exposed or accessible locations shall be not less than No. 20 Brown and Sharpe gage seamless drawn-brass tubing or other approved pipe or tubing materials. Inaccessible fixture connections shall be constructed according to the requirements for drainage piping. Each fixture tailpiece, continuous waste, or waste and overflow shall be not less than 1½ inches for sinks of two or more compartments, dishwashers, clothes washing machines, laundry tubs, bath tubs, and not less than 1¼ inches for lavatories and single compartment sinks having a 2 inch maximum drain opening.

(4) *Concealed connections.* Concealed slip joint connections shall be provided

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with adequately sized unobstructed access panels and shall be accessible for inspection and repair.

(5) *Directional fitting.* An approved or listed "Y" or other directional-type branch fitting shall be installed in every tailpiece or continuous waste that receives the discharge from food waste disposal units, dishwashing, or other force-discharge fixture or appliance. (See also § 3280.607(b)(4)(ii).)

(b) *Fixtures.* (1) *Spacing.* All plumbing fixtures shall be so installed with regard to spacing as to be reasonably accessible for their intended use.

(2) *Water closets.* (i) Water closets shall be designed and manufactured according to approved or listed standards and shall be equipped with a water flushing device capable of adequately flushing and cleaning the bowl at each operation of the flushing mechanism.

(ii) Water closet flushing devices shall be designed to replace the water seal in the bowl after each operation. Flush valves, flushometer valves, flushometer tanks and ballcocks shall operate automatically to shut off at the end of each flush or when the tank is filled to operating capacity.

(iii) Flush tanks shall be fitted with an overflow pipe large enough to prevent flooding at the maximum flow rate of the ball cock. Overflow pipes shall discharge into the toilet, through the tank.

(iv) Water closets that have fouling surfaces that are not thoroughly washed at each discharge shall be prohibited. Any water closet that might permit the contents of the bowl to be siphoned back into the water system shall be prohibited.

(v) *Floor connection.* Water closets shall be securely bolted to an approved flange or other approved fitting which is secured to the floor by means of corrosion-resistant screws. The bolts shall be of solid brass or other corrosion-resistant material and shall be not less than one-fourth inch in diameter. A watertight seal shall be made between the water closet and flange or other approved fitting by use of a gasket or sealing compound.

(3) *Shower compartment.* (i) Each compartment stall shall be provided with an approved watertight receptor with sides and back extending at least 1 inch

above the finished dam or threshold. In no case shall the depth of a shower receptor be less than 2 inches or more than 9 inches measured from the top of the finished dam or threshold to the top of the drain. The wall area shall be constructed of smooth, noncorrosive, and nonabsorbent waterproof materials to a height not less than 6 feet above the bathroom floor level. Such walls shall form a watertight joint with each other and with the bathtub, receptor or shower floor. The floor of the compartment shall slope uniformly to the drain at not less than one-fourth nor more than one-half inch per foot.

(ii) The joint around the drain connection shall be made watertight by a flange, clamping ring, or other approved listed means.

(iii) Shower doors and tub and shower enclosures shall be constructed so as to be waterproof and, if glazed, glazing shall comply with the standard for Safety Performance Specifications and Methods of Test for Safety Glazing Materials Used in Buildings, ANSI Z97.1-1984.

(iv) Prefabricated plumbing fixtures shall be approved or listed.

(4) *Dishwashing machines.* (i) A dishwashing machine shall not be directly connected to any waste piping, but shall discharge its waste through a fixed air gap installed above the machine, or through a high loop as specified by the dishwashing machine manufacturer, or into an open standpipe-receptor with a height greater than the washing compartment of the machine. When a standpipe is used, it shall be at least 18 inches but not more than 30 inches above the trap weir. The drain connections from the air gap or high loop may connect to an individual trap, to a directional fitting installed in the sink tailpiece or to an opening provided on the inlet side of a food waste disposal unit.

(ii) Drain from a dishwashing machine shall not be connected to a sink tailpiece, continuous waste line, or trap on the discharge side of a food waste disposal unit.

(5) *Clothes washing machines.* (i) Clothes washing machines shall drain either into a properly vented trap, into a laundry tub tailpiece with watertight

connections, into an open standpipe receptor, or over the rim of a laundry tub.

(ii) Standpipes shall be 1½ inches minimum nominal iron pipe size, 1½ inches diameter nominal brass tubing not less than No. 20 Brown and Sharpe gage, or 1½ inches approved plastic materials. Receptors shall discharge into a vented trap or shall be connected to a laundry tub tailpiece by means of an approved or listed directional fitting. Each standpipe shall extend not less than 18 inches or more than 30 inches above its trap and shall terminate in an accessible location no lower than the top of clothes washing machine. A removable tightfitting cap or plug shall be installed on the standpipe when clothes washer is not provided.

(iii) Clothes washing machine drain shall not be connected to the tailpiece, continuous waste, or trap of any sink or dishwashing machine.

(c) *Installation*—(1) *Access*. Each plumbing fixture and standpipe receptor shall be located and installed in a manner to be accessible for usage, cleaning, repair and replacement. Access to diverter valves and other connections from the fixture hardware is not required.

(2) *Alignment*. Fixtures shall be set level and in true alignment with adjacent walls. Where practical, piping from fixtures shall extend to nearest wall.

(3) *Brackets*. Wall-hung fixtures shall be rigidly attached to walls by metal brackets or supports without any strain being transmitted to the piping connections. Flush tanks shall be securely fastened to toilets or to the wall with corrosive-resistant materials.

(4) *Tub supports*. Bathtub rims at wall shall be supported on metal hangers or on end-grain wood blocking attached to the wall unless otherwise recommended by the manufacturer of the tub.

(5) *Fixture fittings*. Faucets and diverters shall be installed so that the flow of hot water from the fittings corresponds to the left-hand side of the fitting.

(6) *Whirlpool bathtub appliances*—(i) *Access panel*. A door or panel of sufficient size shall be installed to provide access to the pump for repair and/or replacement.

(ii) *Piping drainage*. The circulation pump shall be accessibly located above the crown weir of the trap. The pump drain line shall be properly sloped to drain the volute after fixture use.

(iii) *Piping*. Whirlpool bathtub circulation piping shall be installed to be self-draining.

(iv) *Electrical*. Refer to the National Electrical Code, NFPA 70-1993, Article 685G.

[40 FR 58752, Dec. 18, 1975, as amended at 42 FR 961, Jan. 4, 1977. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 52 FR 4586, Feb. 12, 1987; 58 FR 55014, Oct. 25, 1993]

§ 3280.608 Hangers and supports.

(a) *Strains and stresses*. Piping in a plumbing system shall be installed without undue strains and stresses, and provision shall be made for expansion, contraction, and structural settlement.

(b) *Piping supports*. Piping shall be secured at sufficiently close intervals to keep the pipe in alignment and carry the weight of the pipe and contents. Unless otherwise stated in the standards for specific materials shown in the table in § 3280.604(a), or unless specified by the pipe manufacturer, plastic drainage piping shall be supported at intervals not to exceed 4 feet and plastic water piping shall be supported at intervals not to exceed 3 feet.

(c) *Hangers and anchors*. (1) Hangers and anchors shall be of sufficient strength to support their proportional share of the pipe alignments and prevent rattling.

(2) Piping shall be securely attached to the structure by hangers, clamps, or brackets which provide protection against motion, vibration, road shock, or torque in the chassis.

(3) Hangers and straps supporting plastic pipe shall not compress, distort, cut or abrade the piping and shall allow free movement of the pipe.

§ 3280.609 Water distribution systems.

(a) *Water supply*—(1) *Supply piping*. Piping systems shall be sized to provide an adequate quantity of water to each plumbing fixture at a flow rate sufficient to keep the fixture in a clean and sanitary condition without any danger of backflow or siphonage. (See

table in § 3280.609(f)(1)). The manufacturer shall include in his written installation instructions that the manufactured home has been designed for an inlet water pressure of 80 psi, and a statement that when the manufactured home is to be installed in areas where the water pressure exceeds 80 psi, a pressure reducing valve should be installed.

(2) *Hot water supply.* Each manufactured home equipped with a kitchen sink, and bathtub and/or shower shall be provided with a hot water supply system including a listed water heater.

(b) *Water outlets and supply connections*—(1) *Water connection.* Each manufactured home with a water distribution system shall be equipped with a ¾ inch threaded inlet connection. This connection shall be tagged or marked “Fresh Water Connection” (or marked “Fresh Water Fill”). A matching cap or plug shall be provided to seal the water inlet when it is not in use, and shall be permanently attached to the manufactured home or water supply piping. When a master cold water shutoff full flow valve is not installed on the main feeder line in an accessible location, the manufacturer’s installation instructions shall indicate that such a valve is to be installed in the water supply line adjacent to the home. When a manufactured home includes expandable rooms or is composed of two or more units, fittings or connectors designed for such purpose shall be provided to connect any water piping. When not connected, the water piping shall be protected by means of matching threaded caps or plugs.

(2) *Prohibited connections.* (i) The installation of potable water supply piping or fixture or appliance connections shall be made in a manner to preclude the possibility of backflow.

(ii) No part of the water system shall be connected to any drainage or vent piping.

(3) *Rim outlets.* The outlets of faucets, spouts, and similar devices shall be spaced at least 1 inch above the flood level of the fixture.

(4) *Appliance connections.* Water supplies connected to clothes washing or dishwashing machines shall be protected by an approved or listed fixed

air gap provided within the appliance by the manufacturer.

(5) *Flushometer valves or manually operated flush valves.* An approved or listed vacuum breaker shall be installed and maintained in the water supply line on the discharge side of a water closet flushometer valve or manually operated flush valve. Vacuum breakers shall have a minimum clearance of 6 inches above the flood level of the fixture to the critical level mark unless otherwise permitted in their approval.

(6) *Flush tanks.* Water closet flush tanks shall be equipped with an approved or listed anti-siphon ball cock which shall be installed and maintained with its outlet or critical level mark not less than 1 inch above the full opening of the overflow pipe.

(7) *Hose bibbs.* When provided, all exterior hose bibbs and laundry sink hose connections shall be protected by a listed non-removable backflow prevention device. This is not applicable to hose connections provided for automatic washing machines with built-in backflow prevention.

(8) *Flushometer tanks.* Flushometer tanks shall be equipped with an approved air gap on the vacuum breaker assembly located above the flood level rim above the fixture.

(c) *Water heater safety devices*—(1) *Relief valves.* (i) All water heaters shall be installed with approved and listed fully automatic valve or valves designed to provide temperature and pressure relief.

(ii) Any temperature relief valve or combined pressure and temperature relief valve installed for this purpose shall have the temperature sensing element immersed in the hottest water within the upper 6 inches of the tank. It shall be set to start relieving at a pressure of 150 psi or the rated working pressure of the tank whichever is lower and at or below a water temperature of 210° F.

(iii) Relief valves shall be provided with full-sized drains, with cross sectional areas equivalent to that of the relief valve outlet, which shall be directed downward and discharge beneath the manufactured home. Drain lines shall be of a material listed for hot water distribution and shall drain fully by gravity, shall not be trapped,

and shall not have their outlets threaded, and the end of the drain shall be visible for inspection.

(d) *Materials*—(1) *Piping material.* Water pipe shall be of standard weight brass, galvanized wrought iron, galvanized steel, Type K, L or M copper tubing, approved or listed plastic or other approved or listed material.

(i) *Plastic piping.* All plastic water piping and fittings in manufactured homes must be listed for use with hot water.

(ii) [Reserved]

(2) *Fittings.* Appropriate fittings shall be used for all changes in size and where pipes are joined. The material and design of fittings shall conform to the type of piping used. Special consideration shall be given to prevent corrosion when dissimilar metals are joined.

(i) Fittings for screw piping shall be standard weight galvanized iron for galvanized iron and steel pipe, and of brass for brass piping. They shall be installed where required for change in direction, reduction of size, or where pipes are joined together.

(ii) Fittings for copper tubing shall be cast brass or drawn copper (sweat-soldered) or shall be approved or listed fittings for the purpose intended.

(3) *Prohibited material.* Used piping materials shall not be permitted. Those pipe dopes, solder, fluxes, oils, solvents, chemicals, or other substances that are toxic, corrosive, or otherwise detrimental to the water system shall not be used. In addition, for those manufactured homes to be connected to a public water system, all water piping shall be lead-free (as defined in section 109(c)(2) of the Safe Drinking Water Act Amendments of 1986) with solders and flux containing not more than 0.2 percent lead and pipes and pipe fittings containing not more than 8.0 percent lead.

(e) *Installation of piping*—(1) *Minimum requirement.* All piping equipment, appurtenances, and devices shall be installed in workmanlike manner and shall conform with the provisions and intent of this standard.

(2) *Screw pipe.* Iron pipe-size brass or galvanized iron or steel pipe fittings shall be joined with approved or listed standard pipe threads fully engaged in the fittings. Pipe ends shall be reamed

to the full bore of the pipe. Pipe-joint compound shall be insoluble in water, shall be nontoxic and shall be applied to male threads only.

(3) *Solder fittings.* Joints in copper water tubes shall be made by the appropriate use of approved cast brass or wrought copper fittings, properly soldered together. The surface to be soldered shall be thoroughly cleaned bright mechanically. The joints shall be properly fluxed and made with a solder that contains no more than 0.2 percent lead.

(4) *Flared fittings.* A flaring tool shall be used to shape the ends of flared tubing to match the flare of fittings.

(5) *Plastic pipe and fittings.* Plastic pipe and fittings shall be joined by installation methods recommended by the manufacturer or in accordance with provisions of a listed standard.

(f) *Size of water supply piping*—(1) *Minimum size.* The size of water supply piping and branch lines shall not be less than sizes shown in the following table:

MINIMUM SIZE TUBING AND PIPE FOR WATER DISTRIBUTION SYSTEMS

Number of fixtures	Tubing (nominal)		Pipe iron pipe size (inches)
	Diameter (inches)	Outer diameter (inches)	
1	*1/4	3/8	1/2
2	3/8	1/2	1/2
3	1/2	5/8	1/2
4	1/2	5/8	1/2
5 or more	3/4	7/8	3/4

*6 ft maximum length.

Exceptions to table: 3/8 inch nominal diameter or 1/2 inch OD minimum size for clothes washing or dishwashing machines, unless larger size is recommended by the fixture manufacturer. 1/2 inch nominal diameter or 5/8 inch OD minimum size for flushometer or metering type valves unless otherwise specified in their listing. No galvanized screw piping shall be less than 1/2 inch iron pipe size.

(2) *Sizing procedure.* Both hot and cold water piping systems shall be computed by the following method:

(i) *Size of branch.* Start at the most remote outlet on any branch of the hot or cold water piping and progressively count towards the water service connection, computing the total number of fixtures supplied along each section of

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piping. Where branches are joined together, the number of fixtures on each branch shall be totalled so that no fixture is counted twice. Following down the left-hand column of the preceding table a corresponding number of fixtures will be found. The required pipe or tubing size is indicated in the other columns on the same line.

(ii) A water heater, food waste disposal unit, evaporative cooler or ice maker shall not be counted as a water-using fixture when computing pipe sizes.

(g) *Line valves.* Valves, when installed in the water supply distribution system (except those immediately controlling one fixture supply) and when fully opened, shall have a cross-sectional area of the smallest orifice or opening, through which the water flows, at least equal to the cross-sectional area of the nominal size of the pipe in which the valve is installed.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 52 FR 4586, Feb. 12, 1987; 53 FR 23611, June 23, 1988; 58 FR 55014, Oct. 25, 1993]

§ 3280.610 Drainage systems.

(a) *General.* (1) Each fixture directly connected to the drainage system shall be installed with a water seal trap (§ 3280.606(a)).

(2) The drainage system shall be designed to provide an adequate circulation of air in all piping with no danger of siphonage, aspiration, or forcing of trap seals under conditions of ordinary use.

(b) *Materials*—(1) *Pipe.* Drainage piping shall be standard weight steel, wrought iron, brass, copper tube DWV, listed plastic, cast iron, or other listed or approved materials.

(2) *Fittings.* Drainage fittings shall be recessed drainage pattern with smooth interior waterways of the same diameter as the piping and shall be of a material conforming to the type of piping used. Drainage fittings shall be designed to provide for a ¼ inch per foot grade in horizontal piping.

(i) Fittings for screw pipe shall be cast iron, malleable iron, brass, or listed plastic with standard pipe threads.

(ii) Fittings for copper tubing shall be cast brass or wrought copper.

(iii) Socket-type fittings for plastic piping shall comply with listed standards.

(iv) Brass or bronze adaptor or wrought copper fittings shall be used to join copper tubing to threaded pipe.

(c) *Drain outlets.* (1) Each manufactured home shall have only one drain outlet.

(2) *Clearance from drain outlet.* The drain outlet shall be provided with a minimum clearance of 3 inches in any direction from all parts of the structure or appurtenances and with not less than 18 inches unrestricted clearance directly in front of the drain outlet.

(3) *Drain connector.* The drain connector shall not be smaller than the piping to which it is connected and shall be equipped with a water-tight cap or plug matching the drain outlet. The cap or plug shall be permanently attached to the manufactured home or drain outlet.

(4) The drain outlet and drain connector shall not be less than 3 inches inside diameter.

(5) *Preassembly of drain lines.* Section(s) of the drain system, designed to be located underneath the home, are not required to be factory installed when the manufacturer designs the system for site assembly and also provides all materials and components, including piping, fittings, cement, supports, and instructions necessary for proper site installation.

(d) *Fixture connections.* Drainage piping shall be provided with approved or listed inlet fittings for fixture connections, correctly located according to the size and type of fixture to be connected.

(1) *Water closet connection.* The drain connection for each water closet shall be 3 inches minimum inside diameter and shall be fitted with an iron, brass, or listed plastic floor flange adaptor ring securely screwed, soldered or otherwise permanently attached to the drain piping, in an approved manner and securely fastened to the floor.

(2) [Reserved]

(e) *Size of drainage piping*—(1) *Fixture load.* Except as provided by § 3280.611(d), drain pipe sizes shall be determined by the type of fixture and the total number connected to each drain.

(i) A 1½ inch minimum diameter piping shall be required for one and not more than three individually vented fixtures.

(ii) A 2-inch minimum diameter piping shall be required for four or more fixtures individually vented.

(iii) A 3-inch minimum diameter piping shall be required for water closets.

(f) *Wet-vented drainage system.* Plumbing fixture traps may connect into a wet-vented drainage system which shall be designed and installed to accommodate the passage of air and waste in the same pipe.

(1) *Horizontal piping.* All parts of a wet-vented drainage system, including the connected fixture drains, shall be horizontal except for wet-vented vertical risers which shall terminate with a 1½ inch minimum diameter continuous vent. Where required by structural design, wet-vented drain piping may be offset vertically when other vented fixture drains or relief vents are connected to the drain piping at or below the vertical offsets.

(2) *Size.* A wet-vented drain pipe shall be 2 inches minimum diameter and at least one pipe size larger than the largest connected trap or fixture drain. Not more than three fixtures may connect to a 2-inch diameter wet-vented drain system.

(3) *Length of trap arm.* Fixture traps shall be located within the distance given in § 3280.611(c)(5). Not more than one trap shall connect to a trap arm.

(g) *Offsets and branch fittings—(1) Changes in direction.* Changes in direction of drainage piping shall be made by the appropriate use of approved or listed fittings, and shall be of the following angles: 11¼, 22½, 45, 60, or 90 degrees; or other approved or listed fittings or combinations of fittings with equivalent radius or sweep.

(2) *Horizontal to vertical.* Horizontal drainage lines, connecting with a vertical pipe shall enter through 45-degree “Y” branches, 60-degree “Y” branches, long-turn “TY” branches, sanitary “T” branches, or other approved or listed fittings or combination of fittings having equivalent sweep. Fittings having more than one branch at the same level shall not be used, unless the fitting is constructed so that the discharge from any one branch can-

not readily enter any other branch. However, a double sanitary “T” may be used when the drain line is increased not less than two pipe sizes.

(3) *Horizontal to horizontal and vertical to horizontal.* Horizontal drainage lines connecting with other horizontal drainage lines or vertical drainage lines connected with horizontal drainage lines shall enter through 45-degree “Y” branches, long-turn “TY” branches, or other approved or listed fittings or combination of fittings having equivalent sweep.

(h) *Grade of horizontal drainage piping.* Except for fixture connections on the inlet side of the trap, horizontal drainage piping shall be run in practical alignment and have a uniform grade of not less than ¼ inch per foot toward the manufactured home drain outlet. Where it is impractical, due to the structural features or arrangement of any manufactured home, to obtain a grade of ¼ inch per foot, the pipe or piping may have a grade of not less than ⅓ inch per foot, when a full size cleanout is installed at the upper end.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 52 FR 4586, Feb. 12, 1987; 58 FR 55015, Oct. 25, 1993]

§ 3280.611 Vents and venting.

(a) *General.* Each plumbing fixture trap shall be protected against siphonage and back pressure, and air circulation shall be ensured throughout all parts of the drainage system by means of vents installed in accordance with the requirements of this section and as otherwise required by this standard.

(b) *Materials—(1) Pipe.* Vent piping shall be standard weight steel, wrought iron, brass, copper tube DWV, listed plastic, cast iron or other approved or listed materials.

(2) *Fittings.* Appropriate fittings shall be used for all changes in direction or size and where pipes are joined. The material and design of vent fittings shall conform to the type of piping used.

(i) Fittings for screw pipe shall be cast iron, malleable iron, plastic, or brass, with standard pipe threads.

(ii) Fittings for copper tubing shall be cast brass or wrought copper.

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(iii) Fittings for plastic piping shall be made to approved applicable standards.

(iv) Brass adaptor fittings or wrought copper shall be used to join copper tubing to threaded pipe.

(v) Listed rectangular tubing may be used for vent piping only providing it has an open cross section at least equal to the circular vent pipe required. Listed transition fittings shall be used.

(c) *Size of vent piping*—(1) *Main vent.* The drain piping for each toilet shall be vented by a 1½ inch minimum diameter vent or rectangular vent of venting cross section equivalent to or greater than the venting cross section of a 1½ inch diameter vent, connected to the toilet drain by one of the following methods:

(i) A 1½ inch diameter (min.) individual vent pipe or equivalent directly connected to the toilet drain within the distance allowed in §3280.611(c)(5), for 3-inch trap arms undiminished in size through the roof,

(ii) A 1½ inch diameter (min.) continuous vent or equivalent, indirectly connected to the toilet drain piping within the distance allowed in §3280.611(c)(5) for 3 inch trap arms through a 2-inch wet vented drain that carries the waste of not more than one fixture, or,

(iii) Two or more vented drains when at least one is wet-vented, or 2-inch diameter (minimum), and each drain is separately connected to the toilet drain. At least one of the drains shall connect within the distance allowed in §3280.611(c)(5) for 3-inch trap arms.

(2) *Vent pipe areas.* Each individually vented fixture with a 1½ inch or smaller trap shall be provided with a vent pipe equivalent in area to a 1¼ inch nominal pipe size. The main vent, toilet vent and relief vent, and the continuous vent of wet-vented systems shall have an area equivalent to 1½ inch nominal pipe size.

(3) *Common vent.* When two fixture traps located within the distance allowed from their vent have their trap arms connected separately at the same level into an approved double fitting, an individual vent pipe may serve as a common vent without any increase in size.

(4) *Intersecting vents.* Where two or more vent pipes are joined together, no

increase in size shall be required; however, the largest vent pipe shall extend full size through the roof.

(5) Distance of fixture trap from vent shall not exceed the values given in the following table:

MAXIMUM DISTANCE OF FIXTURES FROM VENT TRAP

Size of fixture drain (inches)	Distance trap to vent
1¼	4 ft. 6 in.
1½	4 ft 6 in.
2	5 ft.
3	6 ft.

(d) *Anti-siphon trap vent.* An anti-siphon trap vent may be used as a secondary vent system for plumbing fixtures protected by traps not larger than 1½ inches, when installed in accordance with the manufacturers' recommendations and the following conditions:

(1) Not more than two fixtures individually protected by the device shall be drained by a common 1½ inch drain.

(2) Minimum drain size for three or more fixtures individually protected by the device shall be 2 inches.

(3) A primary vent stack must be installed to vent the toilet drain at the point of heaviest drainage fixture unit loading.

(4) The device shall be installed in a location that permits a free flow of air and shall be accessible for inspection, maintenance, and replacement and the sealing function shall be at least 6 inches above the top of the trap arm.

(5) Materials for the anti-siphon trap vent shall be as follows:

(i) Cap and housing shall be listed acrylonitrile-butadiene-styrene, DWV grade;

(ii) Stem shall be DWV grade nylon or acetal;

(iii) Spring shall be stainless steel wire, type 302;

(iv) Sealing disc shall be neoprene, conforming to CISPI-HSN-85, the Specification for Neoprene Rubber Gaskets for HUB and Spigot Cast Iron Soil Pipe and Fittings, and ASTM C 564-88, Standard Specification for Rubber Gaskets for Case Iron Soil Pipe and Fittings, or, Silicone Rubber, Low and High Temperature and Tear Resistant, Conforming to Rubber, Silicone, FS ZZ-R-765B-1970, With 1971 Amendment

1; and Liners, Case, and Sheet, Overwrap; Water-Vapor Proof or Waterproof, Flexible, MIL-L-10547E-1975.

(e) *Grade and connections*—(1) *Horizontal vents*. Each vent shall extend vertically from its fixture “T” or point of connection with the waste piping to a point not less than 6 inches above the extreme flood level of the fixture it is venting before offsetting horizontally or being connected with any other vent pipe. Vents for horizontal drains shall connect above the centerline of the drain piping ahead (downstream) of the trap. Where required by structural conditions, vent piping may offset below the rim of the fixture at the maximum angle or height possible.

(f) *Vent terminal*—(1) *Roof extension*. Each vent pipe shall extend through its flashing and terminate vertically, undiminished in size, not less than 2 inches above the roof. Vent openings shall not be less than 3 feet away from any motor-driven air intake that opens into habitable areas.

(2) *Flashing*. The opening around each vent pipe shall be made watertight by an adequate flashing or flashing material.

(g) *Vent caps*. Vent caps, if provided, shall be of the removable type (without removing the flashing from the roof). When vent caps are used for roof space ventilation and the caps are identical to vent caps used for the plumbing system, plumbing system caps shall be identified with permanent markings.

[40 FR 58752, Dec. 18, 1975, as amended at 42 FR 961, Jan. 4, 1977. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 58 FR 55015, Oct. 25, 1993]

§ 3280.612 Tests and inspection.

(a) *Water system*. All water piping in the water distribution system shall be subjected to a pressure test. The test shall be made by subjecting the system to air or water at 100 psi for 15 minutes without loss of pressure.

(b) *Drainage and vent system and plumbing fixtures*. The waste and vent system shall be tested by one of the three following alternate methods for evidence or indication of leakage:

(1) *Water test*. Before plumbing fixtures are connected, all of the openings into the piping shall be plugged and the entire piping system subjected to a

static water test for 15 minutes by filling it with water to the top of the highest vent opening. There shall be no evidence of leakage.

(2) *Air test*. After all fixtures have been installed, the traps filled with water, and the remaining openings securely plugged, the entire system shall be subjected to a 2-inch (manometer) water column air pressure test. If the system loses pressure, leaks may be located with smoke pumped into the system, or with soap suds spread on the exterior of the piping (Bubble test).

(3) *Flood level test*. The manufactured home shall be in a level position, all fixtures shall be connected, and the entire system shall be filled with water to the rim of the water closet bowl. (Tub and shower drains shall be plugged). After all trapped air has been released, the test shall be sustained for not less than 15 minutes without evidence of leaks. Then the system shall be unplugged and emptied. The waste piping above the level of the water closet bowl shall then be tested and show no indication of leakage when the high fixtures are filled with water and emptied simultaneously to obtain the maximum possible flow in the drain piping.

(c) *Fixture test*. The plumbing fixtures and connections shall be subjected to a flow test by filling them with water and checking for leaks and retarded flow while they are being emptied.

(d) *Shower compartments*. Shower compartments and receptors shall be tested for leaks prior to being covered by finish material. Each pan shall be filled with water to the top of the dam for not less than 15 minutes without evidence of leakage.

[40 FR 58752, Dec. 18, 1975, as amended at 42 FR 961, Jan. 4, 1977; 42 FR 54383, Oct. 5, 1977. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 58 FR 55015, Oct. 25, 1993]

Subpart H—Heating, Cooling and Fuel Burning Systems

§ 3280.701 Scope.

Subpart H of this standard covers the heating, cooling and fuel burning equipment installed within, on, or external to a manufactured home.

§ 3280.702 Definitions.

The definitions in this subpart apply to subpart H only.

Accessible, when applied to a fixture, connection, appliance or equipment, means having access thereto, but which may require the removal of an access panel, door or similar obstruction.

Air conditioner blower coil system means a comfort cooling appliance where the condenser section is placed external to the manufactured home and evaporator section with circulating blower attached to the manufactured home air supply duct system. Provision must be made for a return air system to the evaporator/blower section. Refrigerant connection between the two parts of the system is accomplished by tubing.

Air conditioner split system means a comfort cooling appliance where the condenser section is placed external to the manufactured home and the evaporator section incorporated into the heating appliance or with a separate blower/coil section within the manufactured home. Refrigerant connection between the two parts of the system is accomplished by tubing.

Air conditioning condenser section means that portion of a refrigerated air cooling or (in the case of a heat pump) heating system which includes the refrigerant pump (compressor) and the external heat exchanger.

Air conditioning evaporator section means a heat exchanger used to cool or (in the case of a heat pump) heat air for use in comfort cooling (or heating) the living space.

Air conditioning self contained system means a comfort cooling appliance combining the condenser section, evaporator and air circulating blower into one unit with connecting ducts for the supply and return air systems.

Air duct means conduits or passageways for conveying air to or from heating, cooling, air conditioning or ventilation equipment, but not including the plenum.

Automatic pump (oil lifter) means a pump, not an integral part of the oil-burning appliance, that automatically pumps oil from the supply tank and delivers the oil under a constant head to an oil-burning appliance.

Btu. British thermal units means the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit.

Btuh means British thermal units per hour.

Burner means a device for the final conveyance of fuel or a mixture of fuel and air to the combustion zone.

Central air conditioning system means either an air conditioning split system or an external combination heating/cooling system.

Class 0 air ducts means ducts of materials and connectors having a fire-hazard classification of zero.

Class 1 air ducts means ducts of materials and connectors having a flame-spread rating of not over 25 without evidence of continued progressive combustion and a smoke-developed rating of not over 50.

Class 2 air ducts means ducts of materials and connectors having a flame-spread rating of not over 50 without evidence of continued progressive combustion and a smoke-developed rating of not over 50 for the inside surface and not over 100 for the outside surface.

Clearance means the distance between the appliance, chimney, vent, chimney or vent connector or plenum and the nearest surface.

Connector-Gas appliance: means a flexible or semi-rigid connector used to convey fuel gas between a gas outlet and a gas appliance.

Energy Efficiency Ratio (EER) means the ratio of the cooling capacity output of an air conditioner for each unit of power input.

$EER = \text{Capacity (Btuh)} / \text{Power input (watts)}$

External combination heating/cooling system means a comfort conditioning system placed external to the manufactured home with connecting ducts to the manufactured home for the supply and return air systems.

Factory-built fireplace means a hearth, fire chamber and chimney assembly composed of listed factory-built components assembled in accordance with the terms of listing to form a complete fireplace.

Fireplace stove means a chimney connected solid fuel-burning stove having part of its fire chamber open to the room.

Fuel gas piping system means the arrangement of piping, tubing, fittings, connectors, valves and devices designed and intended to supply or control the flow of fuel gas to the appliance(s).

Fuel oil piping system means the arrangement of piping, tubing, fittings, connectors, valves and devices designed and intended to supply or control the flow of fuel oil to the appliance(s).

Gas clothes dryer means a device used to dry wet laundry by means of heat derived from the combustion of fuel gases.

Gas refrigerator means a gas-burning appliance which is designed to extract heat from a suitable chamber.

Gas supply connection means the terminal end or connection to which a gas supply connector is attached.

Gas supply connector, manufactured home means a listed flexible connector designed for connecting the manufactured home to the gas supply source.

Gas vents means factory-built vent piping and vent fittings listed by an approved testing agency, that are assembled and used in accordance with the terms of their listings, for conveying flue gases to the outside atmosphere.

(1) *Type B gas vent* means a gas vent for venting gas appliances with draft hoods and other gas appliances listed for use with Type B gas vents.

(2) *Type BW gas vent* means a gas vent for venting listed gas-fired vented wall furnaces.

Heat producing appliance means all heating and cooking appliances and fuel burning appliances.

Heating appliance means an appliance for comfort heating or for domestic water heating.

Liquefied petroleum gases. The terms *Liquefied petroleum gases*, *LPG* and *LP-Gas* as used in this standard shall mean and include any material which is composed predominantly of any of the following hydrocarbons, or mixtures of them: propane, propylene butanes (normal butane or isobutane), and butylenes.

Plenum means an air compartment which is part of an air-distributing system, to which one or more ducts or outlets are connected.

(1) Furnace supply plenum is a plenum attached directly to, or an inte-

gral part of, the air supply outlet of the furnace.

(2) Furnace return plenum is a plenum attached directly to, or an integral part of, the return inlet of the furnace.

Quick-disconnect device means a hand-operated device which provides a means for connecting and disconnecting a gas supply or connecting gas systems and which is equipped with an automatic means to shut off the gas supply when the device is disconnected.

Readily accessible means direct access without the necessity of removing any panel, door, or similar obstruction.

Roof jack means that portion of a manufactured home heater flue or vent assembly, including the cap, insulating means, flashing, and ceiling plate, located in and above the roof of a manufactured home.

Sealed combustion system appliance means an appliance which by its inherent design is constructed so that all air supplied for combustion, the combustion system of the appliance, and all products of combustion are completely isolated from the atmosphere of the space in which it is installed.

Water heater means an appliance for heating water for domestic purposes other than for space heating.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 52 FR 4586, Feb. 12, 1987; 58 FR 55015, Oct. 25, 1993]

§ 3280.703 Minimum standards.

Heating, cooling and fuel burning appliances and systems in manufactured homes shall be free of defects, and shall conform to applicable standards in the following table unless otherwise specified in this standard. (See § 3280.4) When more than one standard is referenced, compliance with any one such standard shall meet the requirements of this standard.

APPLIANCES

Central Cooling Air Conditioners—UL 465—Seventh Edition—1987 With Revisions through December 24, 1987.

Liquid Fuel-Burning Heating Appliances for Manufactured Homes and Recreational Vehicle—UL 307A—Sixth Edition—1990, With Revisions through August 21, 1990.

Electrical Air Heaters—UL 1025—Second Edition—1987 With Revisions July 13, 1989, February 6, 1990 and December 3, 1991.

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- Electric Baseboard Heating Equipment—UL 1042-Third Edition-1987 With Revision July 15, 1993.
- Electric Central Air Heating Equipment—UL 1096-Fourth Edition-1986 With Revisions July 16, 1986 and January 30, 1988.
- Gas Burning Heating Appliances for Mobile Homes and Recreational Vehicles—UL 307B-First Edition-1982 With Revision May 18, 1987.
- Gas Clothes Dryers Vol. 1, Type 1 Clothes Dryers—ANSI Z21.5.1-1992.
- Gas Fired Absorption Summer Air Conditioning Appliances—ANSI Z21.40.1-1981, With Addenda Z21.40.1a-1982.
- Gas-Fired Central Furnaces [Except Direct Vent System Central Furnaces]—ANSI Z21.47-1990, With Addendum Z21.47a-1990 and Z21.47b-1992.
- Household Cooking Gas Appliances ANSI Z21.1-1990 With Addenda Z21.1a-1991 and Z21.1b-1993.
- Refrigerators Using Gas Fuel—ANSI Z21.19-1990, With Addenda Z21.19a-1992.
- Gas Water Heaters Vol. 1, Storage Water Heaters With Input Ratings of 75,000 BTU per hour or Less—ANSI Z21.10.1-1990, With Addendum Z21.10.1a-1991 and Z21.10.1b-1992.
- Household Electric Storage Tank Water Heaters—UL 174-Seventh Edition-1989 With Revisions May 8, 1990 and January 22, 1991.

FERROUS PIPE AND FITTINGS

- Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless—ASTM A53-93.
- Standard Specification for Electric-Resistance-Welded Coiled Steel Tubing for Gas and Fuel Oil Lines—*ASTM A539-90a.
- Pipe Threads, General Purpose (Inch)—ANSI/ASME B1.20.1-1983.
- Welding and Seamless Wrought Steel Pipe—ANSI/ASME B36.10-1979.

NONFERROUS PIPE, TUBING AND FITTINGS

- Standard Specification for Seamless Copper Water Tube—ASTM B88-93.
- Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service—ASTM B280-93.
- Metal Connectors for Gas Appliances—ANSI Z21.24-1987, With Addenda Z21.24a 1990 and Z21.24b-1992.
- Manually Operated Gas Valves for Appliances, Appliance Connector Valves and Hose End Valves—ANSI Z21.15-1992.
- Standard for Gas Supply Connectors for Manufactured Homes—IAPMO TSC 9-92.
- Standard Specification for General Requirements for Wrought Seamless Copper and Copper-Alloy Tubes—ASTM B251-93.
- Standard Specification for Seamless Copper Pipe, Standard Sizes—ASTM B42-93.
- Direct Vent Central Furnaces—ANSI Z21.64-1990, With Addenda Z21.64a-1992.

Miscellaneous

- Factory-Made Air Ducts and Connectors—UL 181-Seventh Edition-1990, With Revision November 20, 1990.
- Tube Fittings for Flammable and Combustible Fluids, Refrigeration Service, and Marine Use—UL 109-Fifth Edition-1993.
- Pigtails and Flexible Hose Connectors for LP-Gas—UL 569-Sixth Edition-1990.
- Roof Jacks for Manufactured Homes and Recreational Vehicles—UL 311-Seventh Edition-1990.
- Relief Valves and Automatic Gas Shutoff Devices for Hot Water Supply Systems—ANSI Z21.22-1986, With Addenda Z21.22a-1990.
- Automatic Gas Ignition Systems and Components—ANSI Z21.20-1989, With Addendum Z21.20a-1991 and Z21.20b-1992.
- Automatic Valves for Gas Appliances—ANSI Z21.21-1987, With Addendum Z21.21a-1989 and Z21.21b-1992.
- Gas Appliance Thermostats—ANSI Z21.23-1989, With Addenda Z21.23a-1991.
- Gas Vents—UL 441-Seventh Edition-1991.
- Installation of Oil-Burning Equipment, NFPA 31-1992 Edition.

The following sections are applicable:

- 1-1
 - 1-2
 - 1-3
 - 1-4 except 1-4.1
 - 1-5.1
 - 1-5.2
 - 1-5.4.2
 - 1-5.4.3
 - 1-5.5
 - 1-5.6
 - 1-6
 - 1-7.2 except 1-7.2.4
 - 1-8
 - 1-9
 - 1-10.1
 - 3-1.1
 - 3-1.3
 - 3-1.4
 - 3-1.5
 - 3-1.6
 - 3-10
 - 4-1.3
 - 4-1.4
 - 4-1.5
 - 4-2
 - 4-3 except 4-3.2
 - 4-4 except 4-4.2, 4-4.5.4, 4-4.6
 - 4-4.7, 4-4.9 and 4-4.10 Appendices B, C, and E
 - National Fuel Gas Code—NFPA 54-1992 ANSI 223.1.
 - Warm Air Heating and Air Conditioning Systems, 1993 Edition, NFPA-90B.
- The following sections are applicable:
- 2-2.4
 - 2-3.6
 - Table 3-1.3, Section B
 - 4-1.6

Standard for the Storage and Handling of Liquefied Petroleum Gases, 1992 Edition—NFPA-58.

Flares for Tubing (1972)—SAE—J533b.

Chimneys, Factory-Built Residential Type and Building Heating Appliance—UL 103—Seventh Edition—1989 With Revision February 23, 1989.

Factory-Built Fireplaces—UL 127—Sixth Edition With Revisions January 4, 1989, June 10, 1991, June 29, 1992.

Room Heaters Solid-Fuel Type—UL 1482—Third Edition—1988 With Revision September 13, 1988.

Fireplace Stoves—UL 737—Sixth Edition—1988 With Revisions September 19, 1988, July 10, 1990 and June 10, 1991.

Unitary Air-Conditioning and Air-Source Heat Pump Equipment—ANSI/ARI 210/240-89.

AGA Requirements for Gas Connectors for Connection of Fixed Appliances for Outdoor Installation, Park Trailers and Manufactured (Mobile) Homes to the Gas Supply—No. 3-87.

[58 FR 55015, Oct. 25, 1993]

§ 3280.704 Fuel supply systems.

(a) *LP—Gas system design and service line pressure.* (1) Systems shall be of the vapor-withdrawal type.

(2) Gas, at a pressure not over 14 inches water column (½ psi), shall be delivered from the system into the gas supply connection.

(b) *LP-gas containers—(1) Maximum capacity.* No more than two containers having an individual water capacity of not more than 105 pounds (approximately 45 pounds LP-gas capacity), shall be installed on or in a compartment of any manufactured home.

(2) *Construction of containers.* Containers shall be constructed and marked in accordance with the specifications for LP-Gas Containers of the U.S. Department of Transportation (DOT) or the Rules for Construction of Pressure Vessels 1986, ASME Boiler and Pressure Vessel Code section VIII, Division 1 ASME Containers shall have a design pressure of at least 312.5 psig.

(i) Container supply systems shall be arranged for vapor withdrawal only.

(ii) Container openings for vapor withdrawal shall be located in the vapor space when the container is in service or shall be provided with a suitable internal withdrawal tube which communicates with the vapor space on or near the highest point in the container when it is mounted in service

position, with the vehicle on a level surface. Containers shall be permanently and legibly marked in a conspicuous manner on the outside to show the correct mounting position and the position of the service outlet connection. The method of mounting in place shall be such as to minimize the possibility of an incorrect positioning of the container.

(3) *Location of LP-gas containers and systems.* (i) LP-gas containers shall not be installed, nor shall provisions be made for installing or storing any LP-gas container, even temporarily, inside any manufactured home except for listed, completely self-contained hand torches, lanterns, or similar equipment with containers having a maximum water capacity of not more than 2½ pounds (approximately one pound LP-gas capacity).

(ii) Containers, control valves, and regulating equipment, when installed, shall be mounted on the “A” frame of the manufactured home, or installed in a compartment that is vaportight to the inside of the manufactured home and accessible only from the outside. The compartment shall be ventilated at top and bottom to facilitate diffusion of vapors. The compartment shall be ventilated with two vents having an aggregate area of not less than two percent of the floor area of the compartment and shall open unrestricted to the outside atmosphere. The required vents shall be equally distributed between the floor and ceiling of the compartment. If the lower vent is located in the access door or wall, the bottom edge of the vent shall be flush with the floor level of the compartment. The top vent shall be located in the access door or wall with the bottom of the vent not more than 12 inches below the ceiling level of the compartment. All vents shall have an unrestricted discharge to the outside atmosphere. Access doors or panels of compartments shall not be equipped with locks or require special tools or knowledge to open.

(iii) Permanent and removable fuel containers shall be securely mounted to prevent jarring loose, slipping or rotating and the fastenings shall be designed and constructed to withstand static loading in any direction equal to

twice the weight of the tank and attachments when filled with fuel, using a safety factor of not less than four based on the ultimate strength of the material to be used.

(4) *LP-gas container valves and accessories.* (i) Valves in the assembly of a two-cylinder system shall be arranged so that replacement of containers can be made without shutting off the flow of gas to the appliance(s). This provision is not to be construed as requiring an automatic change-over device.

(ii) Shutoff valves on the containers shall be protected as follows, in transit, in storage, and while being moved into final utilization by setting into a recess of the container to prevent possibility of their being struck if container is dropped upon a flat surface, or by ventilated cap or collar, fastened to the container, capable of withstanding a blow from any direction equivalent to that of a 30-pound weight dropped 4 feet. Construction shall be such that the blow will not be transmitted to the valve.

(iii) [Reserved]

(iv) Regulators shall be connected directly to the container shutoff valve outlets or mounted securely by means of a support bracket and connected to the container shutoff valve or valves with listed high pressure connections. If the container is permanently mounted the connector shall be as required above or with a listed semi-rigid tubing connector.

(5) *LP-gas safety devices.* (i) DOT containers shall be provided with safety relief devices as required by the regulations of the U.S. Department of Transportation. ASME containers shall be provided with relief valves in accordance with subsection 221 of the Standard for the Storage and Handling Liquefied Petroleum Gases, NFPA No. 58-1992. Safety relief valves shall have direct communication with the vapor space of the vessel.

(ii) The delivery side of the gas pressure regulator shall be equipped with a safety relief device set to discharge at a pressure not less than two times and not more than three times the delivery pressure of the regulator.

(iii) Systems mounted on the "A" frame assembly shall be so located that the discharge from the safety relief de-

vices shall be into the open air and not less than three feet horizontally from any opening into the manufactured home below the level of such discharge.

(iv) Safety relief valves located within liquefied petroleum gas container compartments may be less than three feet from openings provided the bottom vent of the compartment is at the same level or lower than the bottom of any opening into the vehicle, or the compartment is not located on the same wall plane as the opening(s) and is at least two feet horizontally from such openings.

(6) *LP-gas system enclosure and mounting.* (i) Housings and enclosures shall be designed to provide proper ventilation at least equivalent to that specified in § 3280.704(b)(3)(ii).

(ii) Doors, hoods, domes, or portions of housings and enclosures required to be removed or opened for replacement of containers shall incorporate means for clamping them firmly in place and preventing them from working loose during transit.

(iii) Provisions shall be incorporated in the assembly to hold the containers firmly in position and prevent their movement during transit.

(iv) Containers shall be mounted on a substantial support or a base secured firmly to the vehicle chassis. Neither the container nor its support shall extend below the manufactured home frame.

(c) *Oil tanks—(1) Installation.* Oil tanks and listed automatic pumps (oil lifters) installed for gravity flow of oil to heating equipment shall be installed so that the top of the tank is no higher than 8 feet above the appliance oil control and the bottom of the tank is not less than 18 inches above the appliance oil control.

(2) *Auxiliary oil storage tank.* Oil supply tanks affixed to a manufactured home shall be so located as to require filling and draining from the outside and shall be in a place readily available for inspection. If the fuel supply tank is located in a compartment of a manufactured home, the compartment shall be ventilated at the bottom to permit diffusion of vapors and shall be insulated from the structural members of the body. Tanks so installed shall be

provided with an outside fill and vent pipe and an approved liquid level gage.

(3) *Shutoff valve.* A readily accessible, approved manual shutoff valve shall be installed at the outlet of an oil supply tank. The valve shall be installed to close against the supply.

(4) *Fuel oil filters.* All oil tanks shall be equipped with an approved oil filter or strainer located downstream from the tank shutoff valve. The fuel oil filter or strainer shall contain a sump with a drain for the entrapment of water.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 47 FR 49390, Nov. 1, 1982; 52 FR 4587, Feb. 12, 1987; 58 FR 55016, Oct. 25, 1993]

§ 3280.705 Gas piping systems.

(a) *General.* The requirements of this section shall govern the installation of all fuel gas piping attached to any manufactured home. The gas piping supply system shall be designed for a pressure not exceeding 14 inch water column ($\frac{1}{2}$ psi) and not less than 7 inch water column ($\frac{1}{4}$ psi). The manufacturer shall indicate in his written installation instructions the design pressure limitations for safe and effective operation of the gas piping system. None of the requirements listed in this section shall apply to the piping supplied as a part of an appliance. All exterior openings around piping, ducts, plenums or vents shall be sealed to resist the entrance of rodents.

(b) *Materials.* All materials used for the installation, extension, alteration, or repair of any gas piping system shall be new and free from defects or internal obstructions. It shall not be permissible to repair defects in gas piping or fittings. Inferior or defective materials shall be removed and replaced with acceptable material. The system shall be made of materials having a melting point of not less than 1,450 F, except as provided in § 3280.705(e). They shall consist of one or more of the materials described in § 3280.705(b) (1) through (4).

(1) Steel or wrought-iron pipe shall comply with ANSI Standard B36.10-1979, Welded and Seamless Wrought Steel Pipe. Threaded brass pipe in iron pipe sizes may be used. Threaded brass pipe shall comply with ASTM B43-91,

Standard Specification for Seamless Red Brass Pipe, Standard Sizes.

(2) Fittings for gas piping shall be wrought iron, malleable iron, steel, or brass (containing not more than 75 percent copper).

(3) Copper tubing shall be annealed type, Grade K or L, conforming to the Standard Specification for Seamless Copper Water Tube (ASTM B88-93) or shall comply with the Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service, ASTM B 280-93. Copper tubing shall be internally tinned.

(4) Steel tubing shall have a minimum wall thickness of 0.032 inch for tubing of $\frac{1}{2}$ inch diameter and smaller and 0.049 inch for diameters $\frac{1}{2}$ inch and larger. Steel tubing shall be constructed in accordance with ASTM Standard Specification for Electric-Resistance-Welded Coiled Steel Tubing for Gas and Fuel Oil Lines, ASTM A 539-83, and shall be externally corrosion protected.

(c) *Piping design.* Each manufactured home requiring fuel gas for any purpose shall be equipped with a natural gas piping system acceptable for LP-gas. Where fuel gas piping is to be installed in more than one section of an expandable or multiple unit home, the design and construction of the crossover(s) shall be as follows:

(1) All points of crossover shall be readily accessible from the exterior of the home.

(2) The connection(s) between units shall be made with a connector(s) listed for exterior use or direct plumbing sized in accordance with § 3280.705(d). A shutoff valve of the nondisplaceable rotor type conforming to ANSI Z21.15-1992 Manually Operated Gas Valves for Appliances, Appliances Connector Valves and Hose End Valves, suitable for outdoor use shall be installed at each crossover point upstream of the connection when listed connectors are used.

(3) The connection(s) may be made by a listed quick disconnect device which shall be designed to provide a positive seal of the supply side of the gas system when such device is separated.

(4) The flexible connector, direct plumbing pipe, or "quick disconnect"

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device shall be provided with protection from mechanical and impact damage and located to minimize the possibility of tampering.

(5) For gas line cross over connections made with either hard pipe or flexible connectors, the crossover point(s) shall be capped on the supply side to provide a positive seal and covered on the other side with a suitable protective covering.

(6) Suitable protective coverings for the connection device(s) when separated, shall be permanently attached to the device or flexible connector.

(7) When a quick disconnect device is installed, a 3 inch by 1¾ inch minimum size tag made of etched, metal-stamped or embossed brass, stainless steel, anodized or alclad aluminum not less than 0.020 inch thick or other approved material (e.g., 0.005 inch plastic laminates) shall be permanently attached on the exterior wall adjacent to the access to the "quick disconnect" device. Each tag shall be legibly inscribed with the following information using letters no smaller than ¼ inch high:

Do Not Use Tools To Separate the "Quick-Disconnect" Device

(d) *Gas pipe sizing.* Gas piping systems shall be sized so that the pressure drop to any appliance inlet connection from any gas supply connection, when all appliances are in operation at maximum capacity, is not more than 0.5 inch water column as determined on the basis of test, or in accordance with table 3280.705(d). When determining gas pipe sizing in the table, gas shall be assumed to have a specific gravity of 0.65 and rated at 1000 B.T.U. per cubic foot.

The natural gas supply connection(s) shall be not less than the size of the gas piping but shall be not smaller than ¾ inch nominal pipe size.

(e) *Joints for gas pipe.* All pipe joints in the piping system, unless welded or brazed, shall be threaded joints that comply with Pipe Threads, General Purpose (Inch), adopted 25 October 1984, ANSI/ASME B1.20.1-1983. Right and left nipples or couplings shall not be used. Unions, if used, shall be of ground joint type. The material used for welding or brazing pipe connections shall have a melting temperature in excess of 1,000 F.

(f) *Joints for tubing.* (1) Tubing joints shall be made with either a single or a double flare of 45 degrees in accordance with Flares For Tubing, SAE-J533b-1972 or with other listed vibration-resistant fittings, or joints may be brazed with material having a melting point exceeding 1,000 F. Metallic ball sleeve compression-type tubing fittings shall not be used.

(2) Steel tubing joints shall be made with a double-flare in accordance with Flares For Tubing, SAE-J533b-1972.

(g) *Pipe joint compound.* Screw joints shall be made up tight with listed pipe joint compound, insoluble in liquefied petroleum gas, and shall be applied to the male threads only.

(h) *Concealed tubing.* Tubing shall not be run inside walls, floors, partitions, or roofs. Where tubing passes through walls, floors, partitions, roofs, or similar installations, such tubing shall be protected by the use of weather resistant grommets that shall snugly fit both the tubing and the hole through which the tubing passes.

PART I—MAXIMUM CAPACITY OF DIFFERENT SIZES OF PIPE AND TUBING IN THOUSANDS OF BTU'S PER HOUR OF NATURAL GAS FOR GAS PRESSURES OF 0.5 PSIG OR LESS AND A MAXIMUM PRESSURE DROP OF 1/2 INCH WATER COLUMN

Iron pipe sizes—Length in feet											Tubing—Length in feet										
I.D.	10	20	30	40	50	60	70	80	90	100	O.D.	10	20	30	40	50	60	70	80	90	100
1/4"	43	29	24	20	18	16	15	14	13	12	3/8"	27	18	15	13	11	10	9	9	8	8
3/8"	95	65	52	45	40	36	33	31	29	27	1/2"	56	38	31	26	23	21	19	18	17	16
1/2"	175	120	97	82	73	66	61	57	53	50	5/8"	113	78	62	53	47	43	39	37	34	33
3/4"	360	250	200	170	151	138	125	118	110	103	3/4"	197	136	109	93	83	75	69	64	60	57
1"	680	465	375	320	285	260	240	220	215	195	7/8"	280	193	155	132	117	106	98	91	85	81

PART II [RESERVED]

(i) *Concealed joints.* Piping or tubing joints shall not be located in any floor, wall partition, or similar concealed construction space.

(j) *Gas supply connections.* When gas appliances are installed, at least one gas supply connection shall be provided on each home. The connection shall not be located beneath an exit door. Where more than one connection is provided, the piping system shall be sized to provide adequate capacity from each supply connection.

(k) *Identification of gas supply connections.* Each manufactured home shall have permanently affixed to the exterior skin at or near each gas supply connection or the end of the pipe, a tag of 3 inches by 1¼ inches minimum size, made of etched, metal-stamped or embossed brass, stainless steel, anodized or alcalde aluminum not less than 0.020 inch thick, or other approved material (e.g., 0.005 inch plastic laminates), which reads as follows. The connector capacity indicated on this tag shall be equal to or greater than the total Btuh rating of all intended gas appliances.

Combination LP-Gas and Natural Gas System

This gas piping system is designed for use of either liquefied petroleum gas or natural gas.

NOTICE: BEFORE TURNING ON GAS BE CERTAIN APPLIANCES ARE DESIGNED FOR THE GAS CONNECTED AND ARE EQUIPPED WITH CORRECT ORIFICES. SECURELY CAP THIS INLET WHEN NOT CONNECTED FOR USE.

When connecting to lot outlet, use a listed gas supply connector for mobile homes rated at 100,000 Btuh or more; 250,000 Btuh or more.

Before turning on gas, make certain all gas connections have been made tight, all appliance valves are turned off, and any unconnected outlets are capped.

After turning on gas, test gas piping and connections to appliances for leakage with soapy water or bubble solution, and light all pilots.

The connector capacity indicated on this tag shall be equal to or greater than the total Btuh rating of all intended gas appliances.

(1) *LP-gas supply connectors.* (1) A listed LP-gas flexible connection conforming to the UL Standard for Pig-tails, and Flexible Hose Connectors for LP-Gas, UL 569—Sixth Edition—1990, or equal shall be supplied when LP-gas cylinder(s) and regulator(s) are supplied.

(2) *Appliance connections.* All gas burning appliances shall be connected to the fuel piping. Materials as provided in §3280.705(b) or listed appliance connectors shall be used. Listed appliance connectors when used shall not run through walls, floors, ceilings or partitions, except for cabinetry, and shall be 3 feet or less in length or 6 feet or less for cooking appliances. Connectors of aluminum shall not be used outdoors. A manufactured home containing a combination LP-natural-gas-system may be provided with a gas outlet to supply exterior appliances when

installed in accordance with the following:

(i) No portion of the completed installation shall project beyond the wall of the manufactured home.

(ii) The outlet shall be provided with an approved quick-disconnect device, which shall be designed to provided a positive seal on the supply side of the gas system when the appliance is disconnected. A shutoff valve of the non-displaceable rotor type conforming to ANSI Z21.15-1992, Manually Operated Gas Valves, shall be installed immediately upstream of the quick-disconnect device. The complete device shall be provided as part of the original installation.

(iii) Protective caps or plugs for the “quick-disconnect” device, when disconnected, shall be permanently attached to the manufactured home adjacent to the device.

(iv) A tag shall be permanently attached to the outside of the exterior wall of the manufactured home as close

as possible to the gas supply connection. The tag shall indicate the type of gas and the Btuh capacity of the outlet and shall be legibly inscribed as follows:

THIS OUTLET IS DESIGNED FOR USE WITH GAS PORTABLE APPLIANCES WHOSE TOTAL INPUT DO NOT EXCEED _____ BTUH. REPLACE PROTECTIVE COVERING OVER CONNECTOR WHEN NOT IN USE.

(3) *Valves.* A shutoff valve shall be installed in the fuel piping at each appliance inside the manufactured home structure, upstream of the union or connector in addition to any valve on the appliance and so arranged to be accessible to permit serving of the appliance and removal of its components. The shutoff valve shall be located within 6 feet of a cooking appliance and within 3 feet of any other appliance. A shutoff valve may serve more than one appliance if located as required above. Shut off valves shall be of the non-displaceable rotor type and conform ANSI Z21.15-1992, Manually Operated Gas Valves.

(4) *Gas piping system openings.* All openings in the gas piping system shall be closed gas-tight with threaded pipe plugs or pipe caps.

(5) *Electrical ground.* Gas piping shall not be used for an electrical ground.

(6) *Couplings.* Pipe couplings and unions shall be used to join sections of threaded piping. Right and left nipples or couplings shall not be used.

(7) *Hangers and supports.* All gas piping shall be adequately supported by galvanized or equivalently protected metal straps or hangers at intervals of not more than 4 feet, except where adequate support and protection is provided by structural members. Solid-iron-pipe gas supply connection(s) shall be rigidly anchored to a structural member within 6 inches of the supply connection(s).

(8) *Testing for leakage.* (i) Before appliances are connected, piping systems shall stand a pressure of at least six inches mercury or three PSI gage for a period of not less than ten minutes without showing any drop in pressure. Pressure shall be measured with a mercury manometer or slope gage calibrated so as to be read in increments of not greater than one-tenth pound, or

an equivalent device. The source of normal operating pressure shall be isolated before the pressure tests are made. Before a test is begun, the temperature of the ambient air and of the piping shall be approximately the same, and constant air temperature be maintained throughout the test.

(ii) After appliances are connected, the piping system shall be pressurized to not less than 10 inches nor more than 14 inches water column and the appliance connections tested for leakage with soapy water or bubble solution.

[40 FR 58752, Dec. 18, 1975, as amended at 42 FR 54383, Oct. 5, 1977. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 52 FR 4587, Feb. 12, 1987; 58 FR 55016, Oct. 25, 1993]

§ 3280.706 Oil piping systems.

(a) *General.* The requirements of this section shall govern the installation of all liquid fuel piping attached to any manufactured home. None of the requirements listed in this section shall apply to the piping in the appliance(s).

(b) *Materials.* All materials used for the installation extension, alteration, or repair, of any oil piping systems shall be new and free from defects or internal obstructions. The system shall be made of materials having a melting point of not less than 1,450 F, except as provided in §280.706(d) and (e). They shall consist of one or more of the materials described in §3280.706(b) (1) through (4).

(1) Steel or wrought-iron pipe shall comply with ANSI B 36.10-1979, Welded and Seamless Wrought Steel Pipe. Threaded copper or brass pipe in iron pipe sizes may be used.

(2) Fittings for oil piping shall be wrought-iron, malleable iron, steel, or brass (containing not more than 75 percent copper).

(3) Copper tubing shall be annealed type, Grade K or L conforming to the Standard Specification for Seamless Copper Water Tube, ASTM B88-93, or shall comply with the Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service, ASTM B280-93.

(4) Steel tubing shall have a minimum wall thickness of 0.032 inch for diameters up to ½ inch and 0.049 inch for diameters ½ inch and larger. Steel

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tubing shall be constructed in accordance with the Specification for Electric-Resistance-Welded Coiled Steel Tubing for Gas and Field Oil Lines, ASTM, A539-90a, and shall be externally corrosion protected.

(c) *Size of oil piping.* The minimum size of all fuel oil tank piping connecting outside tanks to the appliance shall be no smaller than $\frac{3}{8}$ inch OD copper tubing or $\frac{1}{4}$ inch IPS. If No. 1 fuel oil is used with a listed automatic pump (fuel lifter), copper tubing shall be sized as specified by the pump manufacturer.

(d) *Joints for oil piping.* All pipe joints in the piping system, unless welded or brazed, shall be threaded joints which comply with ANSI/ASME B1.20.1-1983, Pipe Threads, General Purpose (Inch). The material used for brazing pipe connections shall have a melting temperature in excess of 1,000 F.

(e) *Joints for tubing.* Joints in tubing shall be made with either a single or double flare of the proper degree, as recommended by the tubing manufacturer, by means of listed tubing fittings, or brazed with materials having a melting point in excess of 1,000 F.

(f) *Pipe joint compound.* Threaded joints shall be made up tight with listed pipe joint compound which shall be applied to the male threads only.

(g) *Couplings.* Pipe couplings and unions shall be used to join sections of threaded pipe. Right and left nipples or couplings shall not be used.

(h) *Grade of piping.* Fuel oil piping installed in conjunction with gravity feed systems to oil heating equipment shall slope in a gradual rise upward from a central location to both the oil tank and the appliance in order to eliminate air locks.

(i) *Strap hangers.* All oil piping shall be adequately supported by galvanized or equivalently protected metal straps or hangers at intervals of not more than 4 feet, except where adequate support and protection is provided by structural members. Solid-iron-pipe oil supply connection(s) shall be rigidly anchored to a structural member within 6 inches of the supply connection(s).

(j) *Testing for leakage.* Before setting the system in operation, tank installations and piping shall be checked for oil leaks with fuel oil of the same

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grade that will be burned in the appliance. No other material shall be used for testing fuel oil tanks and piping. Tanks shall be filled to maximum capacity for the final check for oil leakage.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 52 FR 4588, Feb. 12, 1987; 58 FR 55017, Oct. 25, 1993]

§ 3280.707 Heat producing appliances.

(a) Heat-producing appliances and vents, roof jacks and chimneys necessary for their installation in manufactured homes shall be listed or certified by a nationally recognized testing agency for use in manufactured homes.

(1) A manufactured home shall be provided with a comfort heating system.

(i) When a manufactured home is manufactured to contain a heating appliance, the heating appliance shall be installed by the manufacturer of the manufactured home in compliance with applicable sections of this subpart.

(ii) When a manufactured home is manufactured for field application of an external heating or combination heating/cooling appliance, preparation of the manufactured home for this external application shall comply with the applicable sections of this part.

(2) Gas and oil burning comfort heating appliances shall have a flue loss of not more than 25 percent, and a thermal efficiency of not less than that specified in nationally recognized standards (See § 3280.703).

(b) Fuel-burning heat-producing appliances and refrigeration appliances, except ranges and ovens, shall be of the vented type and vented to the outside.

(c) Fuel-burning appliances shall not be converted from one fuel to another fuel unless converted in accordance with the terms of their listing and the appliance manufacturer's instructions.

(d) *Performance efficiency.* (1) All automatic electric storage water heaters installed in manufactured homes shall have a standby loss not exceeding 43 watts/meter² (4 watts/ft²) of tank surface area. The method of test for standby loss shall be as described in section 4.3.1 of Household Automatic

Electric Storage Type Water Heaters, ANSI C72.1-1972.

(2) All gas and oil-fired automatic storage water heaters shall have a recovery efficiency, E, and a standby loss, S, as described below. The method of test of E and S shall be as described in section 2.7 of Gas Water heaters, Vol. I, Storage Water Heaters with Input/Ratings of 75,000 BTU per hour or less, ANSI Z21.10.1-1990, with addendums Z21.10.1a-1991 and Z21.10.1b-1992 except that for oil-fired units. CF=1.0, Q=total gallons of oil consumed and H=total heating value of oil in BTU/gallon.

Storage capacity in gallons	Recovery efficiency	Standby loss
Less than 25	At least 75 percent	Not more than 7.5 percent.
25 up to 35 ...	00	Not more than 7 percent.
35 or more	00	Not more than 6 percent.

(e) Each space heating, cooling or combination heating and cooling system shall be provided with at least one readily adjustable automatic control for regulation of living space temperature. The control shall be placed a minimum of 3 feet from the vertical edge of the appliance compartment door. It shall not be located on an exterior wall or on a wall separating the appliance compartment from a habitable room.

(f) *Oil-fired heating equipment.* All oil-fired heating equipment shall conform to liquid fuel-burning heating appliances for UL 307A—Fifth Edition—1987, Liquid Fuel-Burning Heating Appliances for Mobile Homes and Recreational Vehicles, and be installed in accordance with Installation of Oil Burning Equipment, NFPA 31-1983. Regardless of the requirements of the above referenced standards, or any other referenced standards, the following are not required:

(1) External switches or remote controls which shut off the burner or the flow of oil to the burner, or

(2) An emergency disconnect switch to interrupt electric power to the

equipment under conditions of excessive temperature.

[40 FR 58752, Dec. 17, 1975, as amended at 42 FR 54383, Oct. 5, 1977. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 47 FR 49391, Nov. 1, 1982; 52 FR 4588, Feb. 12, 1987; 52 FR 47553, Dec. 15, 1987; 58 FR 55017, Oct. 25, 1993]

§ 3280.708 Exhaust duct system and provisions for the future installation of a clothes dryer.

(a) *Clothes dryers.* (1) All gas and electric clothes dryers shall be exhausted to the outside by a moisture-lint exhaust duct and termination fitting. When the clothes dryer is supplied by the manufacturer, the exhaust duct and termination fittings shall be completely installed by the manufacturer. However, if the exhaust duct system is subject to damage during transportation, it need not be completely installed at the factory when:

(i) The exhaust duct system is connected to the clothes dryer, and

(ii) A moisture lint exhaust duct system is roughed in and installation instructions are provided in accordance with paragraph (b)(3) or (c) of this section.

(2) A clothes dryer moisture-lint exhaust duct shall not be connected to any other duct, vent or chimney.

(3) The exhaust duct shall not terminate beneath the manufactured home.

(4) Moisture-lint exhaust ducts shall not be connected with sheet metal screws or other fastening devices which extend into the interior of the duct.

(5) Moisture-lint exhaust duct and termination fittings shall be installed in accordance with the appliance manufacturer's printed instructions.

(b) *Provisions for future intallation of a gas clothes dryer.* A manufactured home may be provided with "stubbed in" equipment at the factory to supply a gas clothes dryer for future installation by the owner provided it complies with the following provisions:

(1) The "stubbed in" gas outlet shall be provided with a shutoff valve, the outlet of which is closed by threaded pipe plug or cap;

(2) The "stubbed in" gas outlet shall be permanently labeled to identify it

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for use only as the supply connection for a gas clothes dryer;

(3) A moisture lint duct system consisting of a complete access space (hole) through the wall or floor cavity with a cap or cover on the interior and exterior of the cavity secured in such a manner that they can be removed by a common household tool shall be provided. The cap or cover in place shall limit air infiltration and be designed to resist the entry of water or rodents. The manufacturer is not required to provide the moisture-lint exhaust duct or the termination fitting. The manufacturer shall provide written instructions to the owner on how to complete the exhaust duct installation in accordance with provisions of § 3280.708(a)(1) through (5).

(c) *Provisions for future installation of a electric clothes dryers.* When wiring is installed to supply an electric clothes dryer for future installation by the owner, the manufacturer shall:

(1) Provide a roughed in moisture-lint exhaust duct system consisting of a complete access space (hole) through the wall or floor cavity with a cap or cover on the interior and exterior of the cavity which are secured in such a manner that they can be removed by the use of common household tools. The cap or cover in place shall limit air filtration and be designed to resist the entry of water or rodents into the home. The manufacturer is not required to provide the moisture-lint exhaust duct or the termination fitting;

(2) Install a receptacle for future connection of the dryer;

(3) Provide written instructions on how to complete the exhaust duct installation in accordance with the provisions of paragraphs (a)(1) through (5) of this section.

[42 FR 54383, Oct. 5, 1977. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 58 FR 55018, Oct. 25, 1993]

§ 3280.709 Installation of appliances.

(a) The installation of each appliance shall conform to the terms of its listing and the manufacturer's instructions. The installer shall leave the manufacturer's instructions attached to the appliance. Every appliance shall be secured in place to avoid displacement. For the purpose of servicing and

replacement, each appliance shall be both accessible and removable.

(b) Heat-producing appliances shall be so located that no doors, drapes, or other such material can be placed or swing closer to the front of the appliance than the clearances specified on the labeled appliances.

(c) Clearances surrounding heat producing appliances shall not be less than the clearances specified in the terms of their listings.

(1) Prevention of storage. The area surrounding heat producing appliances installed in areas with interior or exterior access shall be framed-in or guarded with noncombustible material such that the distance from the appliance to the framing or guarding material is not greater than three inches unless the appliance is installed in compliance with paragraph (c)(2), of this section. When clearance required by the listing is greater than three inches, the guard or frame shall not be closer to the appliance than the distance provided in the listing.

(2) Clearance spaces surrounding heat producing appliances are not required to be framed-in or guarded when:

(i) A space is designed specifically for a clothes washer or dryer;

(ii) Dimensions surrounding the appliance do not exceed three inches; or

(iii) The manufacturer affixes either to a side of an alcove or compartment containing the appliance, or to the appliance itself, in a clearly visible location, a 3" x 5" adhesive backed plastic laminated label or the equivalent which reads as follows:

"Warning"

This compartment is not to be used as a storage area. Storage of combustible materials or containers on or near any appliance in this compartment may create a fire hazard. Do not store such materials or containers in this compartment.

(d) All fuel-burning appliances, except ranges, ovens, illuminating appliances, clothes dryers, solid fuel-burning fireplaces and solid fuel-burning fireplace stoves, shall be installed to provide for the complete separation of the combustion system from the interior atmosphere of the manufactured home. Combustion air inlets and flue gas outlets shall be listed or certified

as components of the appliance. The required separation may be obtained by:

(1) The installation of direct vent system (sealed combustion system) appliances, or

(2) The installation of appliances within enclosures so as to separate the appliance combustion system and venting system from the interior atmosphere of the manufactured home. There shall not be any door, removable access panel, or other opening into the enclosure from the inside of the manufactured home. Any opening for ducts, piping, wiring, etc., shall be sealed.

(e) A forced air appliance and its return-air system shall be designed and installed so that negative pressure created by the air-circulating fan cannot affect its or another appliance's combustion air supply or act to mix products of combustion with circulating air.

(1) The air circulating fan of a furnace installed in an enclosure with another fuel-burning appliance shall be operable only when any door or panel covering an opening in the furnace fan compartment or in a return air plenum or duct is in the closed position. This does not apply if both appliances are direct vent system (sealed combustion system) appliances.

(2) If a warm air appliance is installed within an enclosure to conform to §3280.709(d)(2), each warm-air outlet and each return air inlet shall extend to the exterior of the enclosure. Ducts, if used for that purpose, shall not have any opening within the enclosure and shall terminate at a location exterior to the enclosure.

(3) Cooling coils installed as a portion of, or in connection with, any forced-air furnace shall be installed on the downstream side unless the furnace is specifically otherwise listed.

(4) An air conditioner evaporator section shall not be located in the air discharge duct or plenum of any forced-air furnace unless the manufactured home manufacturer has complied with certification required in §3280.511.

(5) If a cooling coil is installed with a forced-air furnace, the coil shall be installed in accordance with its listing. When a furnace-coil unit has a limited listing, the installation must be in accordance with that listing.

(6) When an external heating appliance or combination cooling/heating appliance is to be field installed, the home manufacturer shall make provision for proper location of the connections to the supply and return air systems. The manufacturer is not required to provide said appliance(s). The preparation by the manufacturer for connection to the home's supply and return air system shall include all fittings and connection ducts to the main duct and return air system such that the installer is only required to provide:

(i) The appliance;
(ii) Any appliance connections to the home; and

(iii) The connecting duct between the external appliance and the fitting installed on the home by the manufacturer. The above connection preparations by the manufacturer do not apply to supply or return air systems designed only to accept external cooling (i.e., self contained air conditioning systems, etc.)

(7) The installation of a self contained air conditioner comfort cooling appliance shall meet the following requirements:

(i) The installation on a duct common with an installed heating appliance shall require the installation of an automatic damper or other means to prevent the cooled air from passing through the heating appliance unless the heating appliance is certified or listed for such application and the supply system is intended for such an application.

(ii) The installation shall prevent the flow of heated air into the external cooling appliance and its connecting ducts to the manufactured home supply and return air system during the operation of the heating appliance installed in the manufactured home.

(iii) The installation shall prevent simultaneous operation of the heating and cooling appliances.

(f) *Vertical clearance above cooking top.* Ranges shall have a vertical clearance above the cooking top of not less than 24 inches. (See §3280.204).

(g) Solid fuel-burning factory-built fireplaces and fireplace stoves listed for use in manufactured homes may be

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installed in manufactured homes provided they and their installation conform to the following paragraphs. A fireplace or fireplace stove shall not be considered as a heating facility for determining compliance with subpart F.

(1) A solid fuel-burning fireplace or fireplace stove shall be equipped with integral door(s) or shutter(s) designed to close the fireplace or fireplace stove fire chamber opening and shall include complete means for venting through the roof, a combustion air inlet, a hearth extension, and means to securely attach the fireplace or the fireplace stove to the manufactured home structure. The installation shall conform to the following paragraphs (g)(1)(i) to (vii) inclusive:

(i) A listed factory-built chimney designed to be attached directly to the fireplace or fireplace stove shall be used. The listed factory built chimney shall be equipped with and contain as part of its listing a termination device(s) and a spark arrester(s).

(ii) A fireplace or fireplace stove, air intake assembly, hearth extension and the chimney shall be installed in accordance with the terms of their listings and their manufacturer's instructions.

(iii) The combustion air inlet shall conduct the air directly into the fire chamber and shall be designed to prevent material from the hearth dropping onto the area beneath the manufactured home.

(iv) The fireplace or fireplace stove shall not be installed in a sleeping room.

(v) Hearth extension shall be of non-combustible material not less than $\frac{3}{8}$ -inch thick. The hearth shall extend at least 16 inches in front or and at least 8 inches beyond each side of the fireplace or fireplace stove opening. Furthermore the hearth shall extend over the entire surface beneath a fireplace stove and beneath an elevated or overhanging fireplace.

(vi) The label on each solid fuel-burning fireplace and solid fuel-burning fireplace stove shall include the following wording: For use with solid fuel only.

(vii) The chimney shall extend at least three feet above the part of the roof through which it passes and at

least two feet above the highest elevation of any part of the manufactured home within 10 feet of the chimney. Portions of the chimney and termination that exceed an elevation of $13\frac{1}{2}$ ft. above ground level may be designed to be removed for transporting the manufactured home.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 44 FR 66195, Nov. 19, 1979; 58 FR 55018, Oct. 25, 1993]

§ 3280.710 Venting, ventilation and combustion air.

(a) The venting as required by § 3280.707(b) shall be accomplished by one or more of the methods given in (a)(1) and (2) of this section:

(1) An integral vent system listed or certified as part of the appliance.

(2) A venting system consisting entirely of listed components, including roof jack, installed in accordance with the terms of the appliance listing and the appliance manufacturer's instructions.

(b) Venting and combustion air systems shall be installed in accordance with the following:

(1) Components shall be securely assembled and properly aligned at the factory in accordance with the appliance manufacturer's instructions except vertical or horizontal sections of a fuel fired heating appliance venting system that extend beyond the roof line or outside the wall line may be installed at the site. Sectional venting systems shall be listed for such applications and installed in accordance with the terms of their listings and manufacturers' instructions. In cases where sections of the venting system are removed for transportation, a label shall be permanently attached to the appliance indicating the following:

Sections of the venting system have not been installed. Warning-do not operate the appliance until all sections have been assembled and installed in accordance with the manufacturer's instructions.

(2) Draft hood connectors shall be firmly attached to draft hood outlets or flue collars by sheet metal screws or by equivalent effective mechanical fasteners.

(3) Every joint of a vent, vent connector, exhaust duct and combustion

air intake shall be secure and in alignment.

(c) Venting systems shall not terminate underneath a manufactured home.

(d) Venting system terminations shall be not less than three feet from any motor-driven air intake discharging into habitable areas.

(e) The area in which cooking appliances are located shall be ventilated by a metal duct which may be single wall, not less than 12.5 square inches in cross-sectional area (minimum dimension shall be two inches) located above the appliance(s) and terminating outside the manufactured home, or by listed mechanical ventilating equipment discharging outside the home, that is installed in accordance with the terms of listing and the manufacturer's instructions. Gravity or mechanical ventilation shall be installed within a horizontal distance of not more than ten feet from the vertical front of the appliance(s).

(f) Mechanical ventilation which exhausts directly to the outside atmosphere from the living space of a home shall be equipped with an automatic or manual damper. Operating controls shall be provided such that mechanical ventilation can be separately operated without directly energizing other energy consuming devices.

[49 FR 32012, Aug. 9, 1984, as amended at 58 FR 55018, Oct. 25, 1993]

§ 3280.711 Instructions.

Operating instructions shall be provided with each appliance. These instructions shall include directions and information covering the proper use and efficient operation of the appliance and its proper maintenance.

§ 3280.712 Marking.

(a) Information on clearances, input rating, lighting and shutdown shall be attached to the appliances with the same permanence as the nameplate, and so located that it is easily readable when the appliance is properly installed or shutdown for transporting of manufactured home.

(b) Each fuel-burning appliance shall bear permanent marking designating the type(s) of fuel for which it is listed.

§ 3280.713 Accessibility.

Every appliance shall be accessible for inspection, service, repair, and replacement without removing permanent construction. For those purposes, inlet piping supplying the appliance shall not be considered permanent construction. Sufficient room shall be available to enable the operator to observe the burner, control, and ignition means while starting the appliance.

[58 FR 55018, Oct. 25, 1993]

§ 3280.714 Appliances, cooling.

(a) Every air conditioning unit or a combination air conditioning and heating unit shall be listed or certified by a nationally recognized testing agency for the application for which the unit is intended and installed in accordance with the terms of its listing.

(1) Mechanical air conditioners shall be rated in accordance with the ARI Standard 210/240-89 Unitary Air Conditioning and Air Source Unitary Heat Pump Equipment and certified by ARI or other nationally recognized testing agency capable of providing follow-up service.

(i) Electric motor-driven unitary cooling systems with rated capacity less than 65,000 BTU/Hr when rated at ARI Standard rating conditions in ARI Standard 210/240-89 Unitary Air-Conditioning and Air-Source Heat Pump Equipment, shall show energy efficiency (EER) values not less than 7.2.

(ii) Heat pumps shall be certified to comply with all the requirements of the ARI Standard 210/240-89 Unitary Air Conditioning and Air Source Unitary Heat Pump Equipment. Electric motor-driven vapor compression heat pumps with supplemental electrical resistance heat shall be sized to provide by compression at least 60 percent of the calculated annual heating requirements for the manufactured home being served. A control shall be provided and set to prevent operation of supplemental electrical resistance heat at outdoor temperatures above 40 F, except for defrost operation.

(iii) Electric motor-driven vapor compression heat pumps with supplemental electric resistance heat conforming to ARI Standard 210/240-89 Unitary Air-Conditioning and Air-Source

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Heat Pump Equipment shall show coefficient of performance ratios not less than shown below:

COP	
Temperature degrees fahrenheit	Coefficient of performance
47	2.5
17	1.7
0	1.0

(2) Gas-fired absorption air conditioners shall be listed or certified in accordance with ANSI Standard Z21.40.1-1981 "Gas-fired Absorption Summer Air Conditioning Appliances" with addenda la-1982, and certified by a nationally recognized testing agency capable of providing follow-up service.

(3) Direct refrigerating systems serving any air conditioning or comfort-cooling system installed in a manufactured home shall employ a type of refrigerant that ranks no lower than Group 5 in the Underwriters' Laboratories, Inc. "Classification of Comparative Life Hazard of Various Chemicals."

(4) When a cooling or heat pump coil and air conditioner blower are installed with a furnace or heating appliance, they shall be tested and listed in combination for heating and safety performance by a nationally recognized testing agency.

(5) Cooling or heat pump indoor coils and outdoor sections shall be certified, listed and rated in combination for capacity and efficiency by a nationally recognized testing agency(ies). Rating procedures shall be based on U.S. Department of Energy test procedures.

(b) *Installation and instructions.* (1) The installation of each appliance shall conform to the terms of its listing as specified on the appliance and in the manufacturer's instructions. The installer shall include the manufacturer's installation instructions in the manufactured home. Appliances shall be secured in place to avoid displacement and movement from vibration and road shock.

(2) Operating instructions shall be provided with the appliance.

(c) Fuel-burning air conditioners shall also comply with § 280.707.

(d) The appliance rating plate shall be so located that it is easily readable

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when the appliance is properly installed.

(e) Every installed appliance shall be accessible for inspection, service, repair and replacement without removing permanent construction.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 58 FR 55018, Oct. 25, 1993]

§ 3280.715 Circulating air systems.

(a) *Supply system.* (1) Supply ducts and any dampers contained therein shall be made from galvanized steel, tin-plated steel, or aluminum, or shall be listed Class 0, Class 1, or Class 2 air ducts. Class 2 air ducts shall be located at least 3 feet from the furnace bonnet or plenum. A duct system integral with the structure shall be of durable construction that can be demonstrated to be equally resistant to fire and deterioration. Ducts constructed from sheet metal shall be in accordance with the following table:

MINIMUM METAL THICKNESS FOR DUCTS¹

Duct type	Diameter 14 in. or less	Width over 14 in.
Round	0.013	0.016
Enclosed rectangular013	.016
Exposed rectangular016	.019

¹When "nominal" thicknesses are specified, 0.003 in. shall be added to these "minimum" metal thicknesses.

(2) *Sizing of ducts for heating.* (i) Ducts shall be so designed that when a labeled forced-air furnace is installed and operated continuously at its normal heating air circulating rate in the manufactured home, with all registers in the full open position, the static pressure measured in the casing shall not exceed 90% of that shown on the label of the appliance. For upflow furnaces the static pressure shall be taken in the duct plenum. For external heating or combination heating/cooling appliances the static pressure shall be taken at the point used by the agency listing or certifying the appliance.

(ii) When an evaporator-coil specifically designed for the particular furnace is installed between the furnace and the duct plenum, the total static pressure shall be measured downstream of the coil in accordance with the appliance label and shall not exceed 90

percent of that shown on the label of the appliance.

(iii) When any other listed air-cooler coil is installed between the furnace and the duct plenum, the total static pressure shall be measured between the furnace and the coil and it shall not exceed 90 percent of that shown on the label of the furnace.

(iv) The minimum dimension of any branch duct shall be at least 1½ inches, and of any main duct, 2½ inches.

(3) *Sizing of ducts.* (i) The manufactured home manufacturer shall certify the capacity of the air cooling supply duct system for the maximum allowable output of ARI certified central air conditioning systems. The certification shall be at operating static pressure of 0.3 inches of water or greater. (See § 3280.511).

(ii) The refrigerated air cooling supply duct system including registers must be capable of handling at least 300 cfm per 10,000 btuh with a static pressure no greater than 0.3 inches of water when measured at room temperature. In the case of application of external self contained comfort cooling appliances or the cooling mode of combination heating/cooling appliances, either the external ducts between the appliance and the manufactured home supply system shall be considered part of, and shall comply with the requirements for the refrigerated air cooling supply duct system, or the connecting duct between the external appliance and the mobile supply duct system shall be a part of the listed appliance. The minimum dimension of any branch duct shall be at least 1½ inches, and of any main duct, 2½ inches.

(4) *Airtightness of supply duct systems.* A supply duct system shall be considered substantially airtight when the static pressure in the duct system, with all registers sealed and with the furnace air circulator at high speed, is at least 80 percent of the static pressure measured in the furnace casing, with its outlets sealed and the furnace air circulator operating at high speed. For the purpose of this paragraph and § 3280.715(b) pressures shall be measured with a water manometer or equivalent device calibrated to read in increments not greater than ¼₁₀ inch water column.

(5) *Expandable or multiple manufactured home connections.* (i) An expandable or multiple manufactured home may have ducts of the heating system installed in the various units. The points of connection must be so designed and constructed that when the manufactured home is fully expanded or coupled, the resulting duct joint will conform to the requirements of this part.

(ii) Installation instructions for supporting the crossover duct from the manufactured home shall be provided for onsite installation. The duct shall not be in contact with the ground.

(6) Air supply ducts shall be insulated with material having an effective thermal resistance (R) of not less than 4.0 unless they are within manufactured home insulation having a minimum effective value of R-4.0 for floors or R-6.0 for ceilings.

(7) Supply and return ducts exposed directly to outside air, such as under chassis crossover ducts or ducts connecting external heating, cooling or combination heating/cooling appliances shall be insulated with material having a minimum thermal resistance of R=4.0, with a continuous vapor barrier having a perm rating of not more than 1 perm. Where exposed underneath the manufactured home, all such ducts shall comply with § 3280.715(a)(5)(ii).

(b) *Return air systems*—(1) *Return air openings.* Provisions shall be made to permit the return of circulating air from all rooms and living spaces, except toilet room(s), to the circulating air supply inlet of the furnace.

(2) *Duct material.* Return ducts and any diverting dampers contained therein shall be in accordance with the following:

(i) Portions of return ducts directly above the heating surfaces, or closer than 2 feet from the outer jacket or casing of the furnace shall be constructed of metal in accordance with § 3280.715(a)(1) or shall be listed Class 0 or Class 1 air ducts.

(ii) Return ducts, except as required by paragraph (a) of this section, shall be constructed of one-inch (nominal) wood boards (flame spread classification of not more than 200), other suitable material no more flammable than

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one-inch board or in accordance with § 3280.715(a)(1).

(iii) The interior of combustible ducts shall be lined with noncombustible material at points where there might be danger from incandescent particles dropped through the register or furnace such as directly under floor registers and the bottom return.

(iv) Factory made air ducts used for connecting external heating, cooling or combination heating/cooling appliances to the supply system and return air system of a manufactured home shall be listed by a nationally recognized testing agency. Ducts applied to external heating appliances or combination heating/cooling appliances supply system outlets shall be constructed of metal in accordance with § 3280.715(a)(1) or shall be listed Class 0 or Class 1 air ducts for those portions of the duct closer than 2 feet from the outer casing of the appliance.

(v) Ducts applied to external appliances shall be resistant to deteriorating environmental effects, including but not limited to ultraviolet rays, cold weather, or moisture and shall be resistant to insects and rodents.

(3) *Sizing.* The cross-sectional areas of the return air duct shall not be less than 2 square inches for each 1,000 Btu per hour input rating of the appliance. Dampers shall not be placed in a combination fresh air intake and return air duct so arranged that the required cross-sectional area will not be reduced at all possible positions of the damper.

(4) *Permanent uncloseable openings.* Living areas not served by return air ducts or closed off from the return opening of the furnace by doors, sliding partitions, or other means shall be provided with permanent uncloseable openings in the doors or separating partitions to allow circulated air to return to the furnace. Such openings may be grilled or louvered. The net free area of each opening shall be not less than 1 square inch for every 5 square feet of total living area closed off from the furnace by the door or partition serviced by that opening. Undercutting doors connecting the closed-off space may be used as a means of providing return air area. However, in the event that doors are undercut, they shall be

undercut a minimum of 2 inches and not more than 2½ inches, as measured from the top surface of the floor decking to the bottom of the door and no more than one half of the free air area so provided shall be counted as return air area.

(c) *Joints and seams.* Joints and seams of ducts shall be securely fastened and made substantially airtight. Slip joints shall have a lap of at least 1 inch and shall be individually fastened. Tape or caulking compound may be used for sealing mechanically secure joints. Where used, tape or caulking compound shall not be subject to deterioration under long exposures to temperatures up to 200° F. and to conditions of high humidity, excessive moisture, or mildew.

(d) *Supports.* Ducts shall be securely supported.

(e) *Registers or grilles.* Fittings connecting the registers or grilles to the duct system shall be constructed of metal or material which complies with the requirements of Class 1 or 2 ducts under UL 181—Sixth Edition—1984, Factory Made Air Ducts and Connectors. Air supply terminal devices (registers) when installed in kitchens, bedrooms, and bathrooms shall be equipped with adjustable closeable dampers. Registers or grilles shall be constructed of metal or conform with the following:

(1) Be made of a material classified 94V-0 or 94V-1 when tested as described in Underwriters' Laboratories, Inc., Tests for Flammability of Plastic Materials for Parts in Devices and Appliances, UL 94—Fourth Edition-1991.

(2) Floor registers or grilles shall resist without structural failure a 200 lb. concentrated load on a 2-inch diameter disc applied to the most critical area of the exposed face of the register or grille. For this test the register or grille is to be at a temperature of not less than 165° F and is to be supported in accordance with the manufacturer's instructions.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 52 FR 4589, Feb. 12, 1987; 58 FR 55019, Oct. 25, 1993]

Subpart I—Electrical Systems**§ 3280.801 Scope.**

(a) Subpart I of this standard and part A of Article 550 of the National Electrical Code (NFPA No. 70-1993) cover the electrical conductors and equipment installed within or on manufactured homes and the conductors that connect manufactured homes to a supply of electricity.

(b) In addition to the requirements of this standard and Article 550 of the National Electrical Code (NFPA No. 70-1993) the applicable portions of other Articles of the National Electrical Code shall be followed covering electrical installations in manufactured homes. Wherever the requirements of this standard differ from the National Electrical Code, this standard shall apply.

(c) The provisions of this standard apply to manufactured homes intended for connection to a wiring system nominally rated 120/240 volts, 3-wire AC, with grounded neutral.

(d) All electrical materials, devices, appliances, fittings and other equipment shall be listed or labeled by a nationally recognized testing agency and shall be connected in an approved manner when in service.

(e) Aluminum conductors, aluminum alloy conductors, and aluminum core conductors such as copper clad aluminum; are not acceptable for use in branch circuit wiring in manufactured homes.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 58 FR 55019, Oct. 25, 1993]

§ 3280.802 Definitions.

(a) The following definitions are applicable to subpart I only.

(1) *Accessible* (i) (*As applied to equipment*) means admitting close approach because not guarded by locked doors, elevation, or other effective means. (See *readily accessible*.)

(ii) (*As applied to wiring methods*) means capable of being removed or exposed without damaging the manufactured home structure or finish, or not permanently closed-in by the structure or finish of the manufactured home (see *concealed* and *exposed*).

(2) *Air conditioning or comfort cooling equipment* means all of that equipment intended or installed for the purpose of processing the treatment of air so as to control simultaneously its temperature, humidity, cleanliness, and distribution to meet the requirements of the conditioned space.

(3)(i) *Appliance* means utilization equipment, generally other than industrial, normally built in standardized sizes or types, which is installed or connected as a unit to perform one or more functions, such as clothes washing, air conditioning, food mixing, deep frying, etc.

(ii) *Appliance, fixed* means an appliance which is fastened or otherwise secured at a specific location.

(iii) *Appliance, portable* means an appliance which is actually moved or can easily be moved from one place to another in normal use. For the purpose of this Standard, the following major appliances are considered portable if cord-connected: refrigerators, clothes washers, dishwashers without booster heaters, or other similar appliances.

(iv) *Appliance, stationary* means an appliance which is not easily moved from one place to another in normal use.

(4) *Attachment plug (plug cap) (cap)* means a device which, by insertion in a receptacle, establishes connection between the conductors of the attached flexible cord and the conductors connected permanently to the receptacle.

(5) *Bonding* means the permanent joining of metallic parts to form an electrically conductive path which will assure electrical continuity and the capacity to conduct safely any current likely to be imposed.

(6) *Branch circuit* (i) means the circuit conductors between the final overcurrent device protecting the circuit and the outlet(s). A device not approved for branch circuit protection, such as a thermal cutout or motor overload protective device, is not considered as the overcurrent device protecting the circuit.

(ii) *Branch circuit—appliance* means a branch circuit supplying energy to one or more outlets to which appliances are to be connected, such circuits to have no permanently connected lighting fixtures not a part of an appliance.

(iii) *Branch circuit—general purpose* means a circuit that supplies a number of outlets for lighting and appliances.

(iv) *Branch circuit—individual* means a branch circuit that supplies only one utilization equipment.

(7) *Cabinet* means an enclosure designed either for surface or flush mounting, and provided with a frame, mat, or trim in which swinging doors are hung.

(8) *Circuit breaker* means a device designed to open and close a circuit by nonautomatic means, and to open the circuit automatically on a predetermined overload of current without injury to itself when properly applied within its rating.

(9) *Concealed* means rendered inaccessible by the structure or finish of the manufactured home. Wires in concealed raceways are considered concealed, even though they may become accessible by withdrawing them. (See *accessible (As applied to wiring methods)*)

(10) *Connector, pressure (solderless)* means a device that establishes a connection between two or more conductors or between one or more conductors and a terminal by means of mechanical pressure and without the use of solder.

(11) *Dead front (as applied to switches, circuit-breakers, switchboards, and distribution panelboard)* means so designed, constructed, and installed that no current-carrying parts are normally exposed on the front.

(12) *Demand factor* means the ratio of the maximum demand of a system, or part of a system, to the total connected load of a system or the part of the system under consideration.

(13) *Device* means a unit of an electrical system that is intended to carry but not utilize electrical energy.

(14) *Disconnecting means* means a device, or group of devices, or other means by which the conductors of a circuit can be disconnected from their source of supply.

(15) *Distribution panelboard* means a single panel or a group of panel units designed for assembly in the form of a single panel, including buses, and with or without switches or automatic overcurrent protective devices or both, for the control of light, heat, or power circuits of small individual as well as aggregate capacity; designed to be placed

in a cabinet placed in or against a wall or partition and accessible only from the front.

(16) *Enclosed* means surrounded by a case that will prevent a person from accidentally contacting live parts.

(17) *Equipment* means a general term, including material, fittings, devices, appliances, fixtures, apparatus, and the like used as a part of, or in connection with, an electrical installation.

(18) *Exposed* (i) (As applied to live parts) means capable of being inadvertently touched or approached nearer than a safe distance by a person. It is applied to parts not suitably guarded, isolated, or insulated. (See *accessible and concealed*.)

(ii) (As applied to *wiring method*) means on or attached to the surface or behind panels designed to allow access. (See *Accessible (as applied to wiring methods)*)

(19) *Externally operable* means capable of being operated without exposing the operator to contact with live parts.

(20) *Feeder assembly* means the overhead or under-chassis feeder conductors, including the grounding conductor, together with the necessary fittings and equipment, or a power supply cord approved for manufactured home use, designed for the purpose of delivering energy from the source of electrical supply to the distribution panelboard within the manufactured home.

(21) *Fitting* means an accessory, such as a locknut, bushing, or other part of a wiring system, that is intended primarily to perform a mechanical rather than an electrical function.

(22) *Ground* means a conducting connection, whether intentional or accidental, between an electrical circuit or equipment and earth, or to some conducting body that serves in place of the earth.

(23) *Grounded* means connected to earth or to some conducting body that serves in place of the earth.

(24) *Grounded conductor* means a system or circuit conductor that is intentionally grounded.

(25) *Grounding conductor* means a conductor used to connect equipment or the grounded circuit of a wiring system to a grounding electrode or electrodes.

(26) *Guarded* means covered, shielded, fenced, enclosed, or otherwise protected by means of suitable covers, casings, barriers, rails, screens, mats or platforms to remove the likelihood of approach or contact by persons or objects to a point of danger.

(27) *Isolated* means not readily accessible to persons unless special means for access are used.

(28) *Laundry area* means an area containing or designed to contain either a laundry tray, clothes washer and/or clothes dryer.

(29) *Lighting outlet* means an outlet intended for the direct connection of a lampholder, a lighting fixture, or a pendant cord terminating in a lampholder.

(30) *Manufactured home accessory building or structure* means any awning, cabana, ramada, storage cabinet, carport, fence, windbreak or porch established for the use of the occupant of the manufactured home upon a manufactured home lot.

(31) *Manufactured home service equipment* means the equipment containing the disconnecting means, overcurrent protective devices, and receptacles or other means for connecting a manufactured home feeder assembly.

(32) *Outlet* means a point on the wiring system at which current is taken to supply utilization equipment.

(33) *Panelboard* means a single panel or group of panel units designed for assembly in the form of a single panel; including buses, automatic overcurrent protective devices, and with or without switches for the control of light, heat, or power circuits; designed to be placed in a cabinet or cutout box placed in or against a wall or partition and accessible only from the front.

(34) *Raceway* means any channel for holding wires, cables, or busbars that is designed expressly for, and used solely for, this purpose. Raceways may be of metal or insulating material, and the term includes rigid metal conduit, rigid nonmetallic conduit, flexible metal conduit, electrical metallic tubing, underfloor raceways, cellular concrete floor raceways, cellular metal floor raceways, surface raceways, structural raceways, wireways, and busways.

(35) *Raintight* means so constructed or protected that exposure to a beating rain will not result in the entrance of water.

(36) *Readily accessible* means capable of being reached quickly for operation, renewal, or inspection, without requiring those to whom ready access is requisite to climb over or remove obstacles or to resort to portable ladders, chairs, etc. (See *Accessible*.)

(37) *Receptacle* means a contact device installed at an outlet for the connection of a single attachment plug. A single receptacle is a single contact device with no other contact device on the same yoke. A multiple receptacle is a single device containing two or more receptacles.

(38) *Receptacle outlet* means an outlet where one or more receptacles are installed.

(39) *Utilization equipment* means equipment which utilizes electric energy for mechanical, chemical, heating, lighting, or similar purposes.

(40) *Voltage (of a circuit)* means the greatest root-mean-square (effective) difference of potential between any two conductors of the circuit concerned. Some systems, such as 3-phase 4-wire, single-phase 3-wire, and 3-wire direct-current may have various circuits of various voltages.

(41) *Weatherproof* means so constructed or protected that exposure to the weather will not interfere with successful operation. Rainproof, raintight, or watertight equipment can fulfill the requirements for weatherproof where varying weather conditions other than wetness, such as snow, ice, dust, or temperature extremes, are not a factor.

§ 3280.803 Power supply.

(a) The power supply to the manufactured home shall be a feeder assembly consisting of not more than one listed 50 ampere manufactured home power-supply cords, or a permanently installed circuit. A manufactured home that is factory-equipped with gas or oil-fired central heating equipment and cooking appliances shall be permitted to be provided with a listed manufactured home power-supply cord rated 40 amperes.

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(b) If the manufactured home has a power-supply cord, it shall be permanently attached to the distribution panelboard or to a junction box permanently connected to the distribution panelboard, with the free end terminating in an attachment plug cap.

(c) Cords with adapters and pigtail ends, extension cords, and similar items shall not be attached to, or shipped with, a manufactured home.

(d) A listed clamp or the equivalent shall be provided at the distribution panelboard knockout to afford strain relief for the cord to prevent strain from being transmitted to the terminals when the power-supply cord is handled in its intended manner.

(e) The cord shall be of an approved type with four conductors, one of which shall be identified by a continuous green color or a continuous green color with one or more yellow stripes for use as the grounding conductor.

(f) The attachment plug cap shall be a 3-pole, 4-wire grounding type, rated 50 amperes, 125/250 volts with a configuration as shown herein and intended for use with the 50-ampere, 125/250 receptacle configuration shown. It shall be molded of butyl rubber, neoprene, or other approved materials which have been found suitable for the purpose, and shall be molded to the flexible cord so that it adheres tightly to the cord at the point where the cord enters the attachment-plug cap. If a right-angle cap is used, the configuration shall be so oriented that the grounding member is farthest from the cord.

(g) The overall length of a power-supply cord, measured from the end of the cord, including bared leads, to the face of the attachment-plug cap shall not be less than 21 feet and shall not exceed 36½ feet. The length of cord from the face of the attachment-plug cap to the point where the cord enters the manufactured home shall not be less than 20 feet.

home supply cords and manufactured home parks. Complete details of the 50-ampere cap and receptacle can be found in the American National Standard Dimensions of Caps, Plugs and Receptacles, Grounding Type (ANSI C73.17-1972).

(h) The power supply cord shall bear the following marking: "For use with manufactured homes—40 amperes" or "For use with manufactured homes—50 amperes."

(i) Where the cord passes through walls or floors, it shall be protected by means of conduit and bushings or equivalent. The cord may be installed within the manufactured home walls, provided a continuous raceway is installed from the branch-circuit panelboard to the underside of the manufactured home floor. The raceway may be rigid conduit, electrical metallic tubing or polyethylene (PE), polyvinylchloride (PVC) or acrylonitrile-butadiene-styrene (ABS) plastic tubing having a minimum wall thickness of nominal ¼ inch.

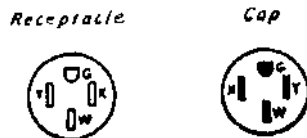
(j) Permanent provisions shall be made for the protection of the attachment-plug cap of the power supply cord and any connector cord assembly or receptacle against corrosion and mechanical damage if such devices are in an exterior location while the manufactured home is in transit.

(k) Where the calculated load exceeds 50 amperes or where a permanent feeder is used, the supply shall be by means of:

(1) One mast weatherhead installation installed in accordance with Article 230 of the National Electrical Code NFPA No. 70-1993 containing four continuous insulated, color-coded, feeder conductors, one of which shall be an equipment grounding conductor; or

(2) An approved raceway from the disconnecting means in the manufactured home to the underside of the manufactured home with provisions for the attachment of a suitable junction box or fitting to the raceway on the underside of the manufactured home. The manufacturer shall provide in his written installation instructions, the proper feeder conductor sizes for the raceway and the size of the junction box to be used; or

(3) Service equipment installed on the manufactured home in accordance



50-ampere 125/250 volt receptacle and attachment-plug-cap configurations, 3 pole, 4-wire grounding types used for manufactured

with Article 230 of the National Electrical Code NFPA No. 70-1993; and

(i) The installation shall be completed by the manufacturer except for the service connections, the meter and the grounding electrode conductor;

(ii) Exterior equipment, or the enclosure in which it is installed shall be weatherproof and installed in accordance with Article 373-2 of the National Electrical Code NFPA No. 70-1993. Conductors shall be suitable for use in wet locations;

(iii) The neutral conductor shall be connected to the system grounding conductor on the supply side of the main disconnect in accordance with Articles 250-23, 25, and 53 of NFPA No. 70-1993.

(iv) The manufacturer shall include in its written installation instructions one method of grounding the service equipment at the installation site;

(v) The minimum size grounding electrode conductor shall be specified in the instructions; and

(vi) A red "Warning" label shall be mounted on or adjacent to the service equipment. The label shall state:

"Warning—do not provide electrical power until the grounding electrode is installed and connected (see installation instructions)."

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 52 FR 4589, Feb. 12, 1987; 58 FR 55019, Oct. 25, 1993]

§ 3280.804 Disconnecting means and branch-circuit protective equipment.

(a) The branch-circuit equipment shall be permitted to be combined with the disconnecting means as a single assembly. Such a combination shall be permitted to be designated as a distribution panelboard. If a fused distribution panelboard is used, the maximum fuse size of the mains shall be plainly marked with lettering at least ¼-inch high and visible when fuses are changed. See section 110-22 of the National Electrical Code (NFPA No. 70-1993) concerning identification of each disconnecting means and each service, feeder, or branch circuit at the point where it originated and the type marking needed.

(b) Plug fuses and fuseholders shall be tamper-resistant, Type "S," enclosed in dead-front fuse panelboards.

Electrical distribution panels containing circuit breakers shall also be dead-front type.

(c) Disconnecting means. A single disconnecting means shall be provided in each manufactured home consisting of a circuit breaker, or a switch and fuses and their accessories installed in a readily accessible location near the point of entrance of the supply cord or conductors into the manufactured home. The main circuit breakers or fuses shall be plainly marked "Main." This equipment shall contain a solderless type of grounding connector or bar for the purposes of grounding with sufficient terminals for all grounding conductors. The neutral bar termination of the grounded circuit conductors shall be insulated.

(d) The disconnecting equipment shall have a rating suitable for the connected load. The distribution equipment, either circuit breaker or fused type, shall be located a minimum of 24 inches from the bottom of such equipment to the floor level of the manufactured home.

(e) A distribution panelboard employing a main circuit breaker shall be rated 50 amperes and employ a 2-pole circuit breaker rated 40 amperes for a 40-ampere supply cord, or 50 amperes for a 50-ampere supply cord. A distribution panelboard employing a disconnect switch and fuses shall be rated 60 amperes and shall employ a single 2-pole, 60-ampere fuseholder with 40- or 50-ampere main fuses for 40- or 50-ampere supply cords, respectively. The outside of the distribution panelboard shall be plainly marked with the fuse size.

(f) The distribution panelboard shall not be located in a bathroom, or in any other inaccessible location, but shall be permitted just inside a closet entry if the location is such that a clear space of 6 inches to easily ignitable materials is maintained in front of the distribution panelboard, and the distribution panelboard door can be extended to its full open position (at least 90 degrees). A clear working space at least 30 inches wide and 30 inches in front of the distribution panelboard shall be provided. This space shall extend from floor to the top of the distribution panelboard.

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(g) Branch-circuit distribution equipment shall be installed in each manufactured home and shall include overcurrent protection for each branch circuit consisting of either circuit breakers or fuses.

(1) The branch circuit overcurrent devices shall be rated:

(i) Not more than the circuit conductors; and

(ii) Not more than 150 percent of the rating of a single appliance rated 13.3 amperes or more which is supplied by an individual branch circuit; but

(iii) Not more than the fuse size marked on the air conditioner or other motor-operated appliance.

(h) A 15-ampere multiple receptacle shall be acceptable when connected to a 20-ampere laundry circuit.

(i) When circuit breakers are provided for branch-circuit protection 240 circuits shall be protected by 2-pole common or companion trip, or handle-tied paired circuit breakers.

(j) A 3 inch by 1-3/4 inch minimum size tag made of etched, metal-stamped or embossed brass, stainless steel, anodized or alclad aluminum not less than 0.020 inch thick, or other approval material (e.g., 0.005 inch plastic laminates) shall be permanently affixed on the outside adjacent to the feeder assembly entrance and shall read: This connection for 120/240 Volt, 3-Pole, 4-Wire, 60 Hertz, _____ Ampere Supply. The correct ampere rating shall be marked on the blank space.

(k) When a home is provided with installed service equipment, a single disconnecting means for disconnecting the branch circuit conductors from the service entrance conductors shall be provided in accordance with Part F of Article 230 of the National Electrical Code, NFPA No. 70-1993. The disconnecting means shall be listed for use as service equipment. The disconnecting means may be combined with the disconnect required by § 3280.804(c). The disconnecting means shall be rated not more than the ampere supply or service capacity indicated on the tag required by paragraph (l) of this section.

(l) When a home is provided with installed service equipment, the electrical nameplate required by § 3280.804(j) shall read: "This connection

for 120/240 volt, 3 pole, 3 wire, 60 Hertz, _____ Ampere Supply." The correct ampere rating shall be marked in the blank space.

[40 FR 58752, Dec. 18, 1975, as amended at 42 FR 961, Jan. 4, 1977. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 52 FR 4589, Feb. 12, 1987; 58 FR 55019, Oct. 25, 1993]

§ 3280.805 Branch circuits required.

(a) The number of branch circuits required shall be determined in accordance with the following:

(1) Lighting, based on 3 volt-amperes per square foot times outside dimensions of the manufactured home (coupler excluded) divided by 120 volts times amperes to determine number of 15 or 20 ampere lighting area circuits. e.g. $[3 \times \text{length} \times \text{width} - [120 \times (15 \text{ or } 20)]] = \text{number of 15 or 20 ampere circuits.}$

(2) *Small appliances.* For the small appliance load in kitchen, pantry dining room and breakfast rooms of manufactured homes, two or more 20-ampere appliance branch circuits, in addition to the branch circuit specified in § 3280.805(a)(1), shall be provided for all receptacle outlets in these rooms, and such circuits shall have no other outlets. Receptacle outlets supplied by at least two appliance receptacle branch circuits shall be installed in the kitchen.

(3) *General appliances (Including furnace, water heater, range, and central or room air conditioner, etc.).* There shall be one or more circuits of adequate rating in accordance with the following:

(i) Ampere rating of fixed appliances not over 50 percent of circuit rating if lighting outlets (receptacles, other than kitchen, dining area, and laundry, considered as lighting outlets) are on same circuit;

(ii) For fixed appliances on a circuit without lighting outlets, the sum of rated amperes shall not exceed the branch-circuit rating. Motor loads or other continuous duty loads shall not exceed 80 percent of the branch circuit rating.

(iii) The rating of a single cord and plug connected appliances on a circuit having no other outlets, shall not exceed 80 percent of the circuit rating.

(iv) The rating of range branch circuit shall be based on the range demand as specified or ranges in

§ 3280.811, Item B(5) of Method 1. For central air conditioning, see Article 440 of the National Electrical Code (NFPA No. 70-1993).

(v) Where a laundry area is provided, a 20 ampere branch circuit shall be provided to supply laundry receptacle outlets. This circuit shall have no other outlets. See § 3280.806(a)(7).

(b) [Reserved]

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 58 FR 55020, Oct. 25, 1993]

§ 3280.806 Receptacle outlets.

(a) All receptacle outlets shall be:

(1) Of grounding type;

(2) Installed according to section 210-7 of the National Electrical Code (NFPA No. 70-1993).

(3) Except when supplying specific appliances, be parallel-blade, 15-ampere, 125-volt, either single or duplex.

(b) All 120 volt single phase, 15 and 20 ampere receptacle outlets, including receptacles in light fixtures, installed outdoors, in compartments accessible from the outdoors, in bathrooms, and within 6 feet of a kitchen sink to serve counter top surfaces shall have ground-fault circuit protection for personnel. Feeders supplying branch circuits may be protected by a ground-fault circuit-interrupter in lieu of the provision for such interrupters specified above. Receptacles dedicated for washer and dryers, also located in a bathroom, are exempt from this requirement.

(c) There shall be an outlet of the grounding type for each cord-connected fixed appliance installed.

(d) Receptacle outlets required. Except in the bath and hall areas, receptacle outlets shall be installed at wall spaces 2 feet wide or more, so that no point along the floor line is more than 6 feet, measured horizontally, from an outlet in that space. In addition, a receptacle outlet shall be installed:

(1) Over or adjacent to counter tops in the kitchen (at least one on each side of the sink if counter tops are on each side and 12 inches or over in width).

(2) Adjacent to the refrigerator and free-standing gas-range space. A duplex receptacle may serve as the outlet for a countertop and a refrigerator.

(3) At counter top spaces for built-in vanities.

(4) At counter top spaces under wall-mounted cabinets.

(5) In the wall, at the nearest point where a bar type counter attaches to the wall.

(6) In the wall at the nearest point where a fixed room divider attaches to the wall.

(7) In laundry areas within 6 feet of the intended location of the appliance(s).

(8) At least one receptacle outlet shall be installed outdoors.

(9) Adjacent to bathroom basins or integral with the light fixture over the bathroom basin.

(10) Receptacle outlets are not required in the following locations:

(i) Wall space occupied by built-in kitchen or wardrobe cabinets,

(ii) Wall space behind doors which may be opened fully against a wall surface,

(iii) Room dividers of the lattice type, less than 8 feet long, not solid within 6 inches of the floor,

(iv) Wall space afforded by bar type counters.

(e) Receptacle outlets shall not be installed in or within reach (30 inches) of a shower or bathtub space.

(f) Receptacle outlets shall not be installed above electric baseboard heaters.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 58 FR 55020, Oct. 25, 1993]

§ 3280.807 Fixtures and appliances.

(a) Electrical materials, devices, appliances, fittings, and other equipment installed, intended for use in, or attached to the manufactured home shall be approved for the application and shall be connected in an approved manner when in service. Facilities shall be provided to securely fasten appliances when the manufactured home is in transit. (See § 3280.809.)

(b) Specifically listed pendant-type fixtures or pendant cords shall be permitted in manufactured homes.

(c) If a lighting fixture is provided over a bathtub or in a shower stall, it shall be of the enclosed and gasketed type, listed for wet locations. See also

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Article 410-4(d) of the National Electrical Code NFPA No. 70-1993.

(d) The switch for shower lighting fixtures and exhaust fans located over a tub or in a shower stall shall be located outside the tub shower space. (See § 3280.806(e).)

(e) Any combustible wall or ceiling finish exposed between the edge of a fixture canopy, or pan and an outlet box shall be covered with non-combustible or limited combustible material.

(f) Every appliance shall be accessible for inspection, service, repair, or replacement without removal of permanent construction.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 52 FR 35543, Sept. 22, 1987; 58 FR 55020, Oct. 25, 1993]

§ 3280.808 Wiring methods and materials.

(a) Except as specifically limited in this part, the wiring methods and materials specified in the National Electrical Code (NFPA No. 70-1993) shall be used in manufactured homes.

(b) Nonmetallic outlet boxes shall be acceptable only with nonmetallic cable.

(c) Nonmetallic cable located 15 inches or less above the floor, if exposed, shall be protected from physical damage by covering boards, guard strips, or conduit. Cable likely to be damaged by stowage shall be so protected in all cases.

(d) Nonmetallic sheathed cable shall be secured by staples, straps, or similar fittings so designed and installed as not to injure any cable. Cable shall be secured in place at intervals not exceeding 4½ feet and within 12 inches from every cabinet, box or fitting.

(e) Metal-clad and nonmetallic cables shall be permitted to pass through the centers of the wide side of 2-inch by 4-inch studs. However, they shall be protected where they pass through 2-inch by 2-inch studs or at other studs or frames where the cable or armor would be less than 1½ inches from the inside or outside surface of the studs when the wall covering materials are in contact with the studs. Steel plates on each side of the cable, or a tube, with not less than No. 16 MSG wall thickness shall be required to protect the

cable. These plates or tubes shall be securely held in place.

(f) Where metallic faceplates are used they shall be effectively grounded.

(g) If the range, clothes dryer, or similar appliance is connected by metalclad cable or flexible conduit, a length of not less than three feet of free cable or conduit shall be provided to permit moving the appliance. Type NM or Type SE cable shall not be used to connect a range or a dryer. This shall not prohibit the use of Type NM or Type SE cable between the branch circuit overcurrent protective device and a junction box or range or dryer receptacle.

(h) Threaded rigid metal conduit shall be provided with a locknut inside and outside the box, and a conduit bushing shall be used on the inside. Rigid nonmetallic conduit shall be permitted. Inside ends of the conduit shall be reamed.

(i) Switches shall be rated as follows:

(1) For lighting circuits, switches, shall have a 10-ampere, 120-125 volt rating; or higher if needed for the connected load.

(2) For motors or other loads, switches shall have ampere or horsepower ratings, or both, adequate for loads controlled. (An "AC general-use" snap switch shall be permitted to control a motor 2 horsepower or less with full-load current not over 80 percent of the switch ampere rating).

(j) At least 4 inches of free conductor shall be left at each outlet box except where conductors are intended to loop without joints.

(k) When outdoor or under-chassis line-voltage wiring is exposed to moisture or physical damage, it shall be protected by rigid metal conduit. The conductors shall be suitable for wet locations. Electrical metallic tubing may be used when closely routed against frames, and equipment enclosures.

(l) The cables or conductors shall be Type NMC, TW, or equivalent.

(m) Outlet boxes of dimensions less than those required in table 370-6(a) of the National Electrical Code (NFPA No. 70-1993) shall be permitted provided the box has been tested and approved for the purpose.

(n) Boxes, fittings, and cabinets shall be securely fastened in place, and shall

be supported from a structural member of the home, either directly or by using a substantial brace. Snap-in type boxes provided with special wall or ceiling brackets that securely fasten boxes in walls or ceilings shall be permitted.

(o) Outlet boxes shall fit closely to openings in combustible walls and ceilings, and they shall be flush with such surfaces.

(p) Appliances having branch-circuit terminal connections which operate at temperatures higher than 60° C (140° F) shall have circuit conductors as described in paragraphs (p) (1) and (2) of this section:

(1) Branch-circuit conductors having an insulation suitable for the temperature encountered shall be permitted to run directly to the appliance.

(2) Conductors having an insulation suitable for the temperature encountered shall be run from the appliance terminal connections to a readily accessible outlet box placed at least one foot from the appliance. These conductors shall be in a suitable raceway which shall extend for at least 4 feet.

(q) A substantial brace for securing a box, fitting or cabinet shall be as described in the National Electrical Code, NFPA 70-1993 Article 370-13(d), or the brace, including the fastening mechanism to attach the brace to the home structure, shall withstand a force of 50 lbs. applied to the brace at the intended point(s) of attachment for the box in a direction perpendicular to the surface in which the box is installed.

(r) Outlet boxes shall fit closely to the openings in combustible wall and ceilings with a maximum of a 1/8 inch gap. They shall be flush with the finish surface or project therefrom.

(s) Where the sheathing of NM cable has been cut or damaged and visual inspection reveals that the conductor and its insulation has not been damaged, it shall be permitted to repair the cable sheath with electrical tape which provides equivalent protection to the sheath.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 58 FR 55020, Oct. 25, 1993]

§ 3280.809 Grounding.

(a) *General.* Grounding of both electrical and nonelectrical metal parts in

a manufactured home shall be through connection to a grounding bus in the manufactured home distribution panelboard. The grounding bus shall be grounded through the green-colored conductor in the supply cord or the feeder wiring to the service ground in the service-entrance equipment located adjacent to the manufactured home location. Neither the frame of the manufactured home nor the frame of any appliance shall be connected to the neutral conductor in the manufactured home.

(b) *Insulated neutral.* (1) The grounded circuit conductor (neutral) shall be insulated from the grounding conductors and from equipment enclosures and other grounded parts. The grounded (neutral) circuit terminals in the distribution panelboard and in ranges, clothes dryers, counter-mounted cooking units, and wall-mounted ovens shall be insulated from the equipment enclosure. Bonding screws, straps, or buses in the distribution panelboard or in appliances shall be removed and discarded. However, when service equipment is installed on the manufactured home, the neutral and the ground bus may be connected in the distribution panel.

(2) Connection of ranges and clothes dryers with 120/240 volt, 3-wire ratings shall be made with 4 conductor cord and 3 pole, 4-wire grounding type plugs, or by type AC metal clad conductors enclosed in flexible metal conduit. For 120 volt rated devices a 3-conductor cord and a 2-pole, 3-wire grounding type plug shall be permitted.

(c) *Equipment grounding means.* (1) The green-colored grounding wire in the supply cord or permanent feeder wiring shall be connected to the grounding bus in the distribution panelboard or disconnecting means.

(2) In the electrical system, all exposed metal parts, enclosures, frames, lamp fixture canopies, etc., shall be effectively bonded to the grounding terminal or enclosure of the distribution panelboard.

(3) Cord-connected appliances, such as washing machines, clothes dryers, refrigerators, and the electrical system of gas ranges, etc., shall be grounded by means of an approved cord with

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grounding conductor and grounding-type attachment plug.

(d) *Bonding of noncurrent-carrying metal parts.* (1) All exposed noncurrent-carrying metal parts that may become energized shall be effectively bonded to the grounding terminal or enclosure of the distribution panelboard. A bonding conductor shall be connected between each distribution panelboard and an accessible terminal on the chassis.

(2) Grounding terminals shall be of the solderless type and approved as pressure-terminal connectors recognized for the wire size used. Star washers or other approved paint-penetrating fitting shall be used to bond terminals to chassis or other coated areas. The bonding conductor shall be solid or stranded, insulated or bare and shall be No. 8 copper minimum, or equal. The bonding conductor shall be routed so as not to be exposed to physical damage. Protection can be afforded by the configuration of the chassis.

(3) Metallic gas, water and waste pipes and metallic air-circulating ducts shall be considered bonded if they are connected to the terminal on the chassis (see §3280.809) by clamps, solderless connectors, or by suitable grounding-type straps.

(4) Any metallic roof and exterior covering shall be considered bonded if (i) the metal panels overlap one another and are securely attached to the wood or metal frame parts by metallic fasteners, and (ii) if the lower panel of the metallic exterior covering is secured by metallic fasteners at a cross member of the chassis by two metal straps per manufactured home unit or section at opposite ends. The bonding strap material shall be a minimum of 4 inches in width of material equivalent to the skin or a material of equal or better electrical conductivity. The straps shall be fastened with paint-penetrating fittings (such as screws and star washers or equivalent).

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 58 FR 55020, Oct. 25, 1993]

§ 3280.810 Electrical testing.

(a) *Dielectric strength test.* The wiring of each manufactured home shall be subjected to a 1-minute, 900 to 1079 volt dielectric strength test (with all

switches closed) between live parts and the manufactured home ground, and neutral and the manufactured home ground. Alternatively, the test may be performed at 1080 to 1250 volts for 1 second. This test shall be performed after branch circuits are complete and after fixtures or appliances are installed. Fixtures or appliances which are listed shall not be required to withstand the dielectric strength test.

(b) Each manufactured home shall be subject to:

(1) A continuity test to assure that metallic parts are properly bonded;

(2) Operational test to demonstrate that all equipment, except water heaters, electric furnaces, dishwashers, clothes washers/dryers, and portable appliances, is connected and in working order; and

(3) Polarity checks to determine that connections have been properly made. Visual verification shall be an acceptable check.

[58 FR 55020, Oct. 25, 1993]

§ 3280.811 Calculations.

(a) The following method shall be employed in computing the supply cord and distribution-panelboard load for each feeder assembly for each manufactured home and shall be based on a 3-wire, 120/240 volt supply with 120 volt loads balanced between the two legs of the 3-wire system. The total load for determining power supply by this method is the summation of:

(1) Lighting and small appliance load as calculated below:

(i) Lighting volt-amperes: Length time width of manufactured home (outside dimensions exclusive of coupler) times 3 volt-amperes per square foot; e.g. Length x width x 3=lighting volt-amperes.

(ii) Small appliance volt-amperes: Number of circuits time 1,500 volt-amperes for each 20-ampere appliance receptacle circuit (see definition of "Appliance Portable" with Note); e.g. Number of circuits x 1,500=small appliance volt-amperes.

(iii) Total volts-amperes: Lighting volts-amperes plus small appliance=total volt-amperes.

(iv) First 3,000 total volts-amperes at 100 percent plus remainder at 35 percent=watts to be divided by 240

volts to obtain current (amperes) per leg.

(2) Nameplate amperes for motors and heater loads (exhaust fans, air conditioners, electric, gas, or oil heating). Omit smaller of air conditioning and heating except include blower motor if used as air conditioner evaporator motor. When an air conditioner is not installed and a 40-ampere power supply cord is provided, allow 15 amperes per leg for air conditioning.

(3) 25 percent of current of largest motor in paragraph (a)(2) of this section.

(4) Total of nameplate amperes for: Disposal, dishwasher, water heater, clothes dryer, wall-mounted oven, cooking units. Where number of these appliances exceeds three, use 75 percent of total.

(5) Derive amperes for free-standing range (as distinguished from separate ovens and cooking units) by dividing values below by 240 volts.

Nameplate rating (in watts)	Use (in watts)
10,000 or less	80 percent of rating.
10,001 to 12,500	8,000.
12,501 to 13,500	8,400.
13,501 to 14,500	8,800.
14,501 to 15,500	9,200.
15,501 to 16,500	9,600.
16,501 to 17,500	10,000.

(6) If outlets or circuits are provided for other than factory-installed appliances, include the anticipated load. The following example is given to illustrate the application of this Method of Calculation:

Example A manufactured home is 70x10 feet and has two portable appliance circuits, a 1000 volt-ampere 240 volt heater, a 200 volt-ampere 120 volt exhaust fan, a 400 volts-ampere 120 volt dishwasher and a 7000 volt-ampere electric range.

Lighting and small appliance load	Volt-amperes	
Lighting 70x10x3	2,100	
Small Appliance	3,000	
Total	5,100	
1st. 3,000 Volt-Amperes at 100%	3,000	
Remainder (5,100 - 3,000 =2,100, at 35%	735	
Total	3,735	
	Amperes per leg A	Amperes per leg B
Lighting and small Appliance	15.5	15.5

	Amperes per leg A	Amperes per leg B
Heater 240 volt	4.1	4.1
Fan 120 volt	1.7
Dishwasher 120 volt	3.3
Range	23.3	23.3
Total	44.6	46.2

Note: Based on the higher current calculated for either leg, use one 50-A supply cord.

(b) The following is an optional method of calculation for lighting and appliance loads for manufactured homes served by single 3-wire 120/240 volt set of feeder conductors with an ampacity of 100 or greater. The total load for determining the feeder ampacity may be computed in accordance with the following table instead of the method previously specified. Feeder conductors whose demand load is determined by this optional calculation shall be permitted to have the neutral load determined by section 220-22 of the National Electrical Code (NFPA No. 70-1993). The loads identified in the table as "other load" and as "Remainder of other load" shall include the following:

(1) 1500 volt-amperes for each 2-wire, 20-ampere small appliance branch circuit and each laundry branch circuit specified.

(2) 3 volt-amperes per square foot for general lighting and general-use receptacles.

(3) The nameplate rating of all fixed appliances, ranges, wall-mounted ovens, counter-mounted cooking units, and including 4 or more separately controlled space heating loads.

(4) The nameplate ampere or kVA rating of all motors and of all low-power-factor loads.

(5) The largest of the following:

(i) Air conditioning load;

(ii) The 65 percent diversified demand of the central electric space heating load;

(iii) The 65 percent diversified demand of the load of less than four separately-controlled electric space heating units.

(iv) The connected load of four or more separately-controlled electric space heating units.

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OPTIONAL CALCULATION FOR MANUFACTURED HOMES WITH 110-AMPERE OR LARGER SERVICE

Load (in kilowatt or kilovoltampere)	Demand factor (percent)
Air-conditioning and cooling including heat pump compressors	100
Central electric space heating	65
Less than 4 separately controlled electric space heating units	65
1st 10 kW of all other load	100
Remainder of other load	40

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 58 FR 55021, Oct. 25, 1993]

§ 3280.812 Wiring of expandable units and dual units.

(a) Expandable or multiple unit manufactured homes shall use fixed-type wiring methods and materials for connecting such units to each other.

(b) Expandable or multiple unit manufactured homes not having permanently installed feeders and which are to be moved from one location to another, shall be permitted to have disconnecting means with branch circuit protective equipment in each unit when so located that after assembly or joining together of units the requirements of § 3280.803 will be met.

§ 3280.813 Outdoor outlets, fixtures, air-conditioning equipment, etc.

(a) Outdoor fixtures and equipment shall be listed for use in wet locations, except that if located on the underside of the home or located under roof extensions or similarly protected locations, they may be listed for use in damp locations.

(b) A manufactured home provided with an outlet designed to energize heating and/or air conditioning equipment located outside the manufactured home, shall have permanently affixed, adjacent to the outlet, a metal tag which reads:

This Connection Is for Air Conditioning Equipment Rated at Not More Than _____ Amperes, at _____ Volts, 60 Hertz. A disconnect shall be located within sight of the appliance.

The correct voltage and ampere ratings shall be given. The tag shall not be less than 0.020 inch, etched Brass, stainless steel, anodized or alclad aluminum or

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equivalent or other approved material (e.g., .005 inch plastic laminates). The tag shall be not less than 3 inches by 1¾ inches minimum size.

[40 FR 58752, Dec. 18, 1975, as amended at 42 FR 961, Jan. 4, 1977. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 58 FR 55021, Oct. 25, 1993]

§ 3280.814 Painting of wiring.

During painting or staining of the manufactured home, it shall be permitted to paint metal raceways (except where grounding continuity would be reduced) or the sheath of the non-metallic cable. Some arrangement, however, shall be made so that no paint shall be applied to the individual wires, as the color coding may be obliterated by the paint.

§ 3280.815 Polarization.

(a) The identified (white) conductor shall be employed for grounding circuit conductors only and shall be connected to the identified (white) terminal or lead on receptacle outlets and fixtures. It shall be the unswitched wire in switched circuits, except that a cable containing an identified conductor (white) shall be permitted for single-pole three-way or four-way switch loops where the connections are made so that the unidentified conductor is the return conductor from the switch to the outlet. Painting of the terminal end of the wire shall not be required.

(b) If the identified (white) conductor of a cable is used for other than grounded conductors or for other than switch loops as explained above (for a 240 volt circuit for example), the conductor shall be finished in a color other than white at each outlet where the conductors are visible and accessible.

(c) Green-colored wires or green with yellow stripe shall be used for grounding conductors only.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 58 FR 55021, Oct. 25, 1993]

§ 3280.816 Examination of equipment for safety.

The examination or inspection of equipment for safety, according to this standard, shall be conducted under uniform conditions and by organizations

properly equipped and qualified for experimental testing, inspections of the run of goods at factories, and service-value determinations through field examinations.

Subpart J—Transportation

§ 3280.901 Scope.

Subpart J of this standard covers the general requirement for designing the structure of the manufactured home to fully withstand the adverse effects of transportation shock and vibration without degradation of the integrated structure or of its component parts and the specific requirements pertaining to the transportation system and its relationship to the structure.

§ 3280.902 Definitions.

(a) *Chassis* means the entire transportation system comprising the following subsystems: drawbar and coupling mechanism, frame, running gear assembly, and lights.

(b) *Drawbar and coupling mechanism* means the rigid assembly, (usually an A frame) upon which is mounted a coupling mechanism, which connects the manufactured home's frame to the towing vehicle.

(c) *Frame* means the fabricated rigid substructure which provides considerable support to the affixed manufactured home structure both during transport and on-site; and also provides a platform for securement of the running gear assembly, the drawbar and coupling mechanism.

(d) *Running gear assembly* means the subsystem consisting of suspension springs, axles, bearings, wheels, hubs, tires, and brakes, with their related hardware.

(e) *Lights* means those safety lights and associated wiring required by applicable U.S. Department of Transportation regulations.

(f) *Transportation system*, (Same as chassis, above).

(g) *Highway*, includes all roads and streets to be legally used in transporting the manufactured home.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 47 FR 28093, June 29, 1982]

§ 3280.903 General requirements for designing the structure to withstand transportation shock and vibration.

(a) The cumulative effect of highway transportation shock and vibration upon a manufactured home structure may result in incremental degradation of its designed performance in terms of providing a safe, healthy and durable dwelling. Therefore, the manufactured home shall be designed, in terms of its structural, plumbing, mechanical and electrical systems, to fully withstand such transportation forces during its intended life. (See §§ 3280.303(c) and 3280.305(a)).

(b) Particular attention shall be given to maintaining watertight integrity and conserving energy by assuring that structural components in the roof and walls (and their interfaces with vents, windows, doors, etc.) are capable of resisting highway shock and vibration forces during primary and subsequent secondary transportation moves.

(c) In place of an engineering analysis, either of the following may be accepted:

(1) Documented technical data of suitable highway tests which were conducted to simulate transportation loads and conditions; or

(2) Acceptable documented evidence of actual transportation experience which meets the intent of this subpart.

§ 3280.904 Specific requirements for designing the transportation system.

(a) *General*. The entire system (frame, drawbar and coupling mechanism, running gear assembly, and lights) shall be designed and constructed as an integrated, balanced and durable unit which is safe and suitable for its specified use during the intended life of the manufactured home. In operation, the transportation system (supporting the manufactured home structure and its contents) shall effectively respond to the control of the braking, while traveling at applicable towing vehicle in terms of tracking and highway speeds and in normal highway traffic conditions.

NOTE: While the majority of manufactured homes utilize a fabricated steel frame assembly, upon which the manufactured home structure is constructed, it is not the intent

of this standard to limit innovation. Therefore, other concepts, such as integrating the frame function into the manufactured home structure, are acceptable provided that such design meets the intent and requirements of this part).

(b) *Specific requirements*—(1) *Drawbar*. The drawbar shall be constructed of sufficient strength, rigidity and durability to safely withstand those dynamic forces experienced during highway transportation. It shall be securely fastened to the manufactured home frame by either a continuous weld or by bolting.

(2) *Coupling mechanism*. The coupling mechanism (which is usually of the socket type) shall be securely fastened to the drawbar in such a manner as to assure safe and effective transfer of the maximum loads, including dynamic loads, between the manufactured home structure and the hitch-assembly of the towing vehicle. The coupling shall be equipped with a manually operated mechanism so adapted as to prevent disengagement of the unit while in operation. The coupling shall be so designed that it can be disconnected regardless of the angle of the manufactured home to the towing vehicle. With the manufactured home parked on level ground, the center of the socket of the coupler shall not be less than 20 inches nor more than 26 inches from ground level.

(3) *Chassis*. The chassis, in conjunction with the manufactured home structure, shall be designed and constructed to effectively sustain the designed loads consisting of the dead load plus a minimum of 3 pounds per square foot floor load, (example: free-standing range, refrigerator, and loose furniture) and the superimposed dynamic load resulting from highway movement but shall not be required to exceed twice the dead load. The integrated design shall be capable of insuring rigidity and structural integrity of the complete manufactured home structure and to insure against deformation of structural or finish members during the intended life of the home.

(4) *Running gear assembly*. (i) The running gear assembly, as part of the chassis, shall be designed to perform, as a balanced system, in order to effectively sustain the designed loads set forth in § 3280.904(b)(3) and to provide for dura-

ble dependable safe mobility of the manufactured home. It shall be designed to accept shock and vibration, both from the highway and the towing vehicle and effectively dampen these forces so as to protect the manufactured home structure from damage and fatigue. Its components shall be designed to facilitate routine maintenance, inspection and replacement.

(ii) Location of the running gear assembly shall be determined by documented engineering analysis, taking into account the gross weight (including all contents), total length of the manufactured home, the necessary coupling hitch weight, span distance, and turning radius. The coupling weight shall be not less than 12 percent nor more than 25 percent of the gross weight.

(5) *Spring assemblies*. Spring assemblies (springs, hangers, shackles, bushings and mounting bolts) shall be capable of withstanding all the design loads as outlined in § 3280.904(b)(3) without exceeding maximum allowable stresses for design spring assembly life as recommended by the spring assembly manufacturer. The capacity of the spring system shall assure, that under maximum operating load conditions, sufficient clearance shall be maintained between the tire and manufactured home frame or structure to permit unimpeded wheel movement and for changing tires.

(6) *Axles*. Axles, and their connecting hardware, shall be capable of withstanding all of the design loads outlined in § 3280.904(b)(3) without exceeding maximum allowable stresses for design axle life as recommended by the axle manufacturer. The number of axles required to provide a safe tow and good ride characteristics shall be determined and documented by engineering analysis. Those alternatives listed in § 3280.903(c) may be accepted in place of such an analysis.

(7) *Hubs and bearings*. Hubs and bearings shall meet the requirements of § 3280.904(b)(3) and good engineering practice. Both of these components shall be accessible for inspection, routine maintenance and replacement of parts.

(8) *Tires, wheels and rims.* Tires, wheels and rims shall meet the requirements of §3280.904(b)(3). Tires shall be selected for anticipated usage.

(9) *Brake assemblies.* (i) The number, type, size and design of brake assemblies required to assist the towing vehicle in providing effective control and stopping of the manufactured home shall be determined and documented by engineering analysis. Those alternatives listed in §3280.903(c) may be accepted in place of such an analysis.

(ii) Brakes on the towing vehicle and the manufactured home shall be capable of assuring that the maximum stopping distance from an initial velocity of 20 miles per hour does not exceed 40 feet (U.S. Department of Transportation Regulations).

(10) *Lights and associated wiring.* Highway safety electrical lights and associated wiring shall conform to applicable Federal requirements in terms of location and performance. The manufacturer shall have the option of meeting this requirement by utilizing a temporary light/wiring harness provided by the manufactured home transportation carrier.

PART 3282—MANUFACTURED HOME PROCEDURAL AND ENFORCEMENT REGULATIONS

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AUTHORITY: 28 U.S.C. 2461 note; 42 U.S.C. 5424; and 42 U.S.C. 3535(d).

SOURCE: 41 FR 19852, May 13, 1976, unless otherwise noted.

Subpart A—General

§ 3282.1 Scope and purpose.

(a) The National Manufactured Housing Construction and Safety Standards Act of 1974 (title VI of Pub. L. 93–383, 88 Stat. 700, 42 U.S.C. 5401, *et seq.*) (hereinafter referred to as the Act), requires the Secretary of the Department of Housing and Urban Development to establish Federal manufactured home construction and safety standards and to issue regulations to carry out the purpose of the Act. The standards promulgated pursuant to the Act appear at part 3280 of chapter XX of this title, and apply to all manufactured homes manufactured for sale to purchasers in the United States on or after the effective date of the standards (June 15, 1976). A manufactured home is manufactured on or after June 15, 1976, if it enters the first stage of production on or after that date.

(b) The Secretary is also authorized by the Act to conduct inspections and investigations necessary to enforce the standards, to determine that a manufactured home fails to comply with an applicable standard or contains a defect or an imminent safety hazard, and to direct the manufacturer to furnish notification thereof, and in some cases, to remedy the defect or imminent safety hazard. The purpose of this part is to prescribe procedures for the implementation of these responsibilities of the Secretary under the Act through the use of private and State inspection organizations and cooperation with State manufactured home agencies. It is the policy of the Department to involve State agencies in the enforcement of the Federal manufactured

home standards to the maximum extent possible consistent with the capabilities of such agencies and the public interest. The procedures for investigations and investigational proceedings are set forth in 24 CFR part 3800.

[41 FR 19852, May 13, 1976, as amended at 61 FR 10442, Mar. 13, 1996]

§ 3282.6 Separability of provisions.

If any clause, sentence, paragraph, section or other portion of part 3282 shall, for any reason, be adjudged by any court of competent jurisdiction to be invalid, such judgment shall not affect, impair, or invalidate the remainder thereof, but shall be confined by its operation to the clause, sentence, paragraph, or part thereof directly involved in the controversy in which such judgment shall have been rendered.

§ 3282.7 Definitions.

The terms *Department*, *HUD*, and *Secretary* are defined in 24 CFR part 5.

(a) *Act* means the National Manufactured Housing Construction and Safety Standards Act of 1974, title VI of the Housing and Community Development Act of 1974 (42 U.S.C. 5401 *et seq.*)

(b) *Add-on* means any structure (except a structure designed or produced as an integral part of a manufactured home) which, when attached to the basic manufactured home unit, increases the area, either living or storage, of the manufactured home.

(c) *Alteration* means the replacement, addition, and modification, or removal of any equipment or installation after sale by a manufacturer to a dealer or distributor but prior to sale by a dealer to a purchaser which may affect the construction, fire safety, occupancy, plumbing, heat-producing or electrical system. It includes any modification made in the manufactured home which may affect the compliance of the home with the standards, but it does not include the repair or replacement of a component or appliance requiring plug-in to an electrical receptacle where the replaced item is of the same configuration and rating as the one being replaced. It also does not include the addition of an appliance requiring *plug-in* to an electrical receptacle, which appliance was not provided with the manufactured home by the manufacturer, if

the rating of the appliance does not exceed the rating of the receptacle to which it is connected.

(d) *Certification label* see *label*.

(e) *Certification report* means the report prepared by an IPIA (see definition z) for each manufactured home manufacturing plant under § 3282.203 in which the IPIA provides a complete description of the initial comprehensive inspection of the plant, an evaluation of the quality assurance program under the approved quality assurance manual, and the identity of the DAPIA (see definition z) which approved the designs and quality assurance manual used in the plant. Where appropriate under § 3282.362(b)(5), the certification report may be made by a DAPIA.

(f) *Component* means any part, material or appliance which is built in as an integral part of the manufactured home during the manufacturing process.

(g) *Cost information* means information submitted by a manufacturer under section 607 of the Act with respect to alleged cost increases resulting from action by the Secretary, in such form as to permit the public and the Secretary to make an informed judgment on the validity of the manufacturer's statements. Such term includes both the manufacturer's cost and the cost to retail purchasers.

(h) *Date of manufacture* means the date on which the label required by § 3282.205(c) is affixed to the manufactured home.

(i) *Dealer* means any person engaged in the sale, leasing, or distribution of new manufactured homes primarily to persons who in good faith purchase or lease a manufactured home for purposes other than resale.

(j) *Defect* means a failure to comply with an applicable Federal manufactured home safety and construction standard that renders the manufactured home or any part or component thereof not fit for the ordinary use for which it was intended, but does not result in an unreasonable risk of injury or death to occupants of the affected manufactured home. See related definitions of *imminent safety hazard* (definition q), *noncompliance* (definition x), and *serious defect* (definition ff).

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(k) *Design* means drawings, specifications, sketches and the related engineering calculations, tests and data in support of the configurations, structures and systems to be incorporated in manufactured homes manufactured in a plant.

(l) *Director* means the Director of the Manufactured Housing Standards Division.

(m) *Distributor* means any person engaged in the sale and distribution of manufactured homes for resale.

(n) *Failure to conform* means an imminent safety hazard related to the standards, a serious defect, defect, or noncompliance and is used as a substitute for all of those terms.

(o) [Reserved]

(p) *Imminent safety hazard* means a hazard that presents an imminent and unreasonable risk of death or severe personal injury that may or may not be related to failure to comply with an applicable Federal manufactured home construction or safety standard. See related definitions of *defect* (definition j), *noncompliance* (paragraph x) and *serious defect* (paragraph ff).

(q) *Joint monitoring team* means a monitoring inspection team composed of personnel provided by the various State Administrative Agencies, or by HUD or its contract agent, operating under a contract with HUD for the purpose of monitoring, or otherwise aiding in the enforcement of the Federal standards.

(r) *Label* or *certification label* means the approved form of certification by the manufacturer that, under §3282.362(c)(2)(i), is permanently affixed to each transportable section of each manufactured home manufactured for sale to a purchaser in the United States.

(s) (Same as §3280.2(a)(13).)

(t) *Manufacturer* means any person engaged in manufacturing or assembling manufactured homes, including any person engaged in importing manufactured homes for resale.

(u) (Same as §3280.2(a)(16).)

(v) *Manufactured home construction* means all activities relating to the assembly and manufacture of a manufactured home including but not limited to those relating to durability, quality, and safety.

(w) *Manufactured home safety* means the performance of a manufactured home in such a manner that the public is protected against any unreasonable risk of the occurrence of accidents due to the design or construction of such manufactured home, or any unreasonable risk of death or injury to the user or to the public if such accidents do occur.

(x) *Noncompliance* means a failure of a manufactured home to comply with a Federal manufactured home construction or safety standard that does not constitute a defect, serious defect, or imminent safety hazard. See related definitions or *defect* (definition j), *imminent safety hazard* (definition q), and *serious defect* (definition ff).

(y) *Owner* means any person purchasing a manufactured home from any other person after the first purchase of the manufactured home, in good faith, for purposes other than resale.

(z) *Primary Inspection Agency* (PIA) means a State/or private organization that has been accepted by the Secretary in accordance with the requirement of subpart H of this part. There are two types of PIA:

(1) Design Approval PIA (DAPIA), which evaluates and approves or disapproves manufactured home designs and quality control procedures, and

(2) Production Inspection PIA (IPIA), which evaluates the ability of manufactured home manufacturing plants to follow approved quality control procedures and provides ongoing surveillance of the manufacturing process. Organizations may act as one or both of these types.

(aa) *Purchaser* means the first person purchasing a manufactured home in good faith for purposes other than resale.

(bb) *Quality Assurance Manual* means a manual, prepared by each manufacturer for its manufacturing plants and approved by a DAPIA which contains: a statement of the manufacturer's quality assurance program, a chart of the organization showing, by position, all personnel accountable for quality assurance, a list of tests and test equipment required, a station-by-station description of the manufacturing process, a list of inspections required at each station, and a list by title of personnel

in the manufacturer's organization to be held responsible for each inspection. Where necessary, the quality assurance manual used in a particular plant shall contain information specific to that plant.

(cc) *To red tag* means to affix a notice to a manufactured home which has been found to contain an imminent safety hazard or a failure to conform with any applicable standard. A *red tag* is the notice so affixed to the manufactured home.

(dd) [Reserved]

(ee) *Secretary's agent* means a party operating as an independent contractor under a contract with HUD.

(ff) *Serious defect* means any failure to comply with an applicable Federal manufactured home construction and safety standard that renders the manufactured home or any part thereof not fit for the ordinary use for which it was intended and which results in an unreasonable risk of injury or death to occupants of the affected manufactured home.

(gg) *Standards* means the Federal manufactured home construction and safety standards promulgated under section 604 of the Act, 42 U.S.C. 5403, as part 3280 of these regulations.

(hh) *State* includes each of the several States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, the Virgin Islands, the Canal Zone, and American Samoa.

(ii) *State Administrative Agency (SAA)* means an agency of a State which has been approved or conditionally approved to carry out the State plan for enforcement of the standards pursuant to section 623 of the Act, 42 U.S.C. 5422, and subpart G of this part.

(jj) *State plan application* means the application of any State organization which is submitted to the Secretary for approval as a State Administrative Agency under subpart G.

(kk) *System* means a set or arrangement of materials or components related or connected as to form an operating entity, i.e., heating, ventilating and air-conditioning systems, evaporative coolers.

(ll) [Reserved]

(mm) *United States District Courts* means the Federal district courts of the United States and the United

States courts of the Commonwealth of Puerto Rico, Guam, the Virgin Islands, the Canal Zone, and American Samoa. (nn) (Same as § 3280.2(a)(22).)

[41 FR 19852, May 13, 1976, as amended at 41 FR 24971, June 21, 1976; 47 FR 28093, June 29, 1982; 61 FR 5216, Feb. 9, 1996; 61 FR 10859, Mar. 15, 1996]

§ 3282.8 Applicability.

(a) *Mobile homes.* This part applies to all manufactured homes that enter the first stage of production on or after June 15, 1976, and to all manufactured homes that enter the first stage of production before June 15, 1976, to which labels are applied under § 3282.205(d).

(b) *States.* This part applies to States that desire to assume responsibility under the Federal manufactured home construction and safety standards enforcement program. It includes requirements which must be met in order for State agencies to be approved by the Secretary under section 623(c) of the Act, 42 U.S.C. 5422(c). It also includes requirements for States wishing to act as primary inspection agencies, as defined in § 3282.7, or to participate in monitoring activities under § 3282.308.

(c) *Primary inspection and engineering organizations.* This part applies to each private inspection and engineering organization that wishes to qualify as a primary inspection agency under subpart H.

(d) *Manufactured home manufacturers.* This part applies to all manufacturers producing manufactured homes for sale in the United States. It includes:

(1) Inspection procedures to be carried out in the manufacturing plants.

(2) Procedures by which a manufacturer obtains approval of manufactured home designs.

(3) Procedures by which a manufacturer obtains approval of manufacturing quality control and assurance programs.

(4) Procedures by which a manufacturer may obtain production inspections and certification labels for its manufactured homes.

(e) *Manufactured home dealers and distributors.* This part applies to any person selling, leasing, or distributing new manufactured homes for use in the United States. It includes prohibitions

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of the sale of new manufactured homes to which labels have not been affixed pursuant to subpart H of these regulations or that have been altered, damaged, or otherwise caused not to be in compliance with the Federal standards.

(f) *Purchasers, owners and consumers.* This part applies to purchasers, owners and consumers of manufactured homes in that it sets out procedures to be followed when purchasers, owners and consumers complain to manufacturers, States, the Secretary or others concerning problems in manufactured homes for which remedies are provided under the Act.

(g) *Recreational vehicles.* Recreational vehicles are not subject to this part, part 3280, or part 3283. A recreational vehicle is a vehicle which is:

- (1) Built on a single chassis;
- (2) 400 Square feet or less when measured at the largest horizontal projections;
- (3) Self-propelled or permanently towable by a light duty truck; and
- (4) Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

(h) *Imported manufactured homes.* Imported manufactured homes are covered by the regulations except as modified by regulations promulgated jointly by the Secretary and the Secretary of the Treasury.

(i) *Export manufactured homes.* Manufactured Homes intended solely for export are not governed by this part or by part 3280 of this title if a label or tag stating that the manufactured home is intended solely for export is placed on the manufactured home or the outside of the container, if any, in which it is to be exported. However, any manufactured home so tagged or labeled that is not exported but is sold to a purchaser in the United States is subject to this part and part 3280 of this title.

(j) *Add-on.* An add-on added by the dealer or some other party not the manufacturer (except where the manufacturer acts as a dealer) as part of a simultaneous transaction involving the sale of a new manufactured home, is not governed by the standards and is not subject to these regulations. How-

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ever, the addition of the add-on must not affect the ability of the basic manufactured home to comply with the standards. If the addition of an add-on causes the basic manufactured home to fail to conform to the standards, sale, lease, and offer for sale or lease of the home is prohibited until the manufactured home is brought into conformance with the standards. While the standards do not govern add-ons, the Secretary has the authority to promulgate standards for add-ons and may do so in the future.

(k) A structure (including an expandable room, tip-out, or tag-along unit) which is designed and produced as an integral part of a manufactured home when assembled on site, is governed by the standards and these regulations regardless of the dimensions of such structure.

(l) *Multifamily homes.* Mobile homes designed and manufactured with more than one separate living unit are not covered by the standards and these regulations.

[41 FR 19852, May 13, 1976, as amended at 41 FR 24970, June 21, 1976; 42 FR 35013, July 7, 1977; 44 FR 68733, Nov. 29, 1979; 47 FR 28093, June 29, 1982]

§ 3282.9 Computation of time.

(a) In computing any period of time prescribed by the regulations in this part, refer to § 26.16(a) of this title.

(b) Extensions of any of the time periods set out in these regulations may be granted by the Secretary or, as appropriate, by a State Administrative Agency, upon a showing of good cause by the party governed by the time period.

[42 FR 2580, Jan. 12, 1977, as amended at 61 FR 10859, Mar. 15, 1996]

§ 3282.10 Civil and criminal penalties.

Failure to comply with these regulations may subject the party in question to the civil and criminal penalties provided for in section 611 of the Act, 42 U.S.C. 5410. The maximum amount of penalties imposed under section 611 of the Act shall be \$1,100 for each violation, up to a maximum of \$1,100,000 for

any related series of violations occurring within one year from the date of the first violation.

[41 FR 19852, May 13, 1976, as amended at 61 FR 50219, Sept. 24, 1996]

§ 3282.11 Preemption and reciprocity.

(a) No State manufactured home standard regarding manufactured home construction and safety which covers aspects of the manufactured home governed by the Federal standards shall be established or continue in effect with respect to manufactured homes subject to the Federal standards and these regulations unless it is identical to the Federal standards.

(b) No State may require, as a condition of entry into or sale in the State, a manufactured home certified (by the application of the label required by § 3282.362(c)(2)(i)) as in conformance with the Federal standards to be subject to State inspection to determine compliance with any standard covering any aspect of the manufactured home covered by the Federal standards. Nor may any State require that a State label be placed on the manufactured home certifying conformance to the Federal standard or an identical standard. Certain actions that States are permitted to take are set out in § 3282.303.

(c) States may participate in the enforcement of the Federal standards enforcement program under these regulations either as SAAs or PIAs or both. These regulations establish the exclusive system for enforcement of the Federal standards. No State may establish or keep in effect through a building code enforcement system or otherwise, procedures or requirements which constitute systems for enforcement of the Federal standards or of identical State standards which are outside the system established in these regulations or which go beyond this system to require remedial actions which are not required by the Act and these regulations. A State may establish or continue in force consumer protections, such as warranty or warranty performance requirements, which respond to individual consumer complaints and so do not constitute systems of enforcement of the Federal standards, regard-

less of whether the State qualifies as an SAA or PIA.

(d) No State or locality may establish or enforce any rule or regulation or take any action that stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress. The test of whether a State rule or action is valid or must give way is whether the State rule can be enforced or the action taken without impairing the Federal superintendence of the manufactured home industry as established by the Act.

[42 FR 2580, Jan. 12, 1977, as amended at 56 FR 65186, Dec. 16, 1991; 61 FR 10859, Mar. 15, 1996]

§ 3282.12 Excluded structures—modular homes.

(a) The purpose of this section is to provide the certification procedure authorized by section 604(h) of the National Manufactured Housing Construction and Safety Standards Act under which modular homes may be excluded from coverage of the Act if the manufacturer of the structure elects to have them excluded. If a manufacturer wishes to construct a structure that is both a manufactured home and a modular home, the manufacturer need not make the certification provided for by this section and may meet both the Federal manufactured home requirements and any modular housing requirements. When the certification is not made, all provisions of the Federal requirements shall be met.

(b) Any structure that meets the definition of *manufactured home* at 24 CFR 3282.7(u) is excluded from the coverage of the National Manufactured Housing Construction and Safety Standards Act, 42 U.S.C. 5401 *et seq.*, if the manufacturer certifies as prescribed in paragraph (c) of this section that:

(1) The structure is designed only for erection or installation on a site-built permanent foundation;

(i) A structure meets this criterion if all written materials and communications relating to installation of the structure, including but not limited to designs, drawings, and installation or erection instructions, indicate that the structure is to be installed on a permanent foundation.

(ii) A site-built permanent foundation is a system of supports, including piers, either partially or entirely below grade which is:

(A) Capable of transferring all design loads imposed by or upon the structure into soil or bedrock without failure,

(B) Placed at an adequate depth below grade to prevent frost damage, and

(C) Constructed of concrete, metal, treated lumber or wood, or grouted masonry; and

(2) The structure is not designed to be moved once erected or installed on a site-built permanent foundation;

(i) A structure meets this criterion if all written materials and communications relating to erection or installation of the structure, including but not limited to designs, drawings, calculations, and installation or erection instructions, indicate that the structure is not intended to be moved after it is erected or installed and if the towing hitch or running gear, which includes axles, brakes, wheels and other parts of the chassis that operate only during transportation, are removable and designed to be removed prior to erection or installation on a site-built permanent foundation; and

(3) The structure is designed and manufactured to comply with the currently effective version of one of the following:

(i) One of the following nationally recognized building codes:

(A) That published by Building Officials and Code Administrators (BOCA) and the National Fire Protection Association (NFPA) and made up of the following:

(1) BOCA Basic Building Code,

(2) BOCA Basic Industrialized Dwelling Code,

(3) BOCA Basic Plumbing Code,

(4) BOCA Basic Mechanical Code, and

(5) National Electrical Code, or

(B) That published by the Southern Building Code Congress (SBCC) and the NFPA and made up of the following:

(1) Standard Building Code,

(2) Standard Gas Code,

(3) Standard Mechanical Code,

(4) Standard Plumbing Code, and

(5) National Electrical Code, or

(C) That published by the International Conference of Building Offi-

cial (ICBO), the International Association of Plumbing and Mechanical Officials (IAPMO), and the NFPA and made up of the following:

(1) Uniform Building Code,

(2) Uniform Mechanical Code,

(3) Uniform Plumbing Code, and

(4) National Electrical Code or

(D) The codes included in paragraphs (b)(3)(i)(A), (B), or (C) in connection with the One- and Two-Family Dwelling Code, or

(E) Any combination of the codes included in paragraphs (b)(3)(i)(A), (B), (C), and (D), that is approved by the Secretary, including combinations using the National Standard Plumbing Code published by the National Association of Plumbing, Heating and Cooling Contractors (PHCC), or

(F) Any other building code accepted by the Secretary as a nationally recognized model building code, or

(ii) Any local code or State or local modular building code accepted as generally equivalent to the codes included under paragraph (b)(3)(i), (the Secretary will consider the manufacturer's certification under paragraph (c) of this section to constitute a certification that the code to which the structure is built is generally equivalent to the referenced codes. This certification of equivalency is subject to the provisions of paragraph (f) of this section) or

(iii) The minimum property standards adopted by the Secretary pursuant to title II of the National Housing Act; and

(4) To the manufacturer's knowledge, the structure is not intended to be used other than on a site-built permanent foundation.

(c) When a manufacturer makes a certification provided for under paragraph (b) of this section, the certification shall state as follows:

The manufacturer of this structure, Name _____; Address _____ (location where structure was manufactured).

Certifies that this structure (Ser. No. _____) is not a manufactured home subject to the provisions of the National Manufactured Housing Construction and Safety Standards Act and is—

(1) designed only for erection or installation on a site-built permanent foundation,

(2) not designed to be moved once so erected or installed,

(3) designed and manufactured to comply with _____ (Here state which code included in paragraph (b)(3) of this section has been followed), and

(4) to the manufacturer's knowledge is not intended to be used other than on a site-built permanent foundation.

(d) This certification shall be affixed in a permanent manner near the electrical panel, on the inside of a kitchen cabinet door, or in any other readily accessible and visible location.

(e) As part of this certification, the manufacturer shall identify each certified structure by a permanent serial number placed on the structure during the first stage of production. If the manufacturer also manufactures manufactured homes that are certified under §§ 3282.205 and 3282.362(c), the series of serial numbers for structures certified under this section shall be distinguishable on the structures and in the manufacturer's records from the series of serial numbers for the manufactured homes that are certified under §§ 3282.205 and 3282.362(c).

(1) If a manufacturer wishes to certify a structure as a manufactured home under §§ 3282.205 and 3282.362(c) after having applied a serial number identifying it as exempted under this section, the manufacturer may do so only with the written consent of the Production Inspection Primary Inspection Agency (IPIA) after thorough inspection of the structure by the IPIA at at least one stage of production and such removal or equipment, components, or materials as the IPIA may require to perform inspections to assure that the structure conforms to the Federal manufactured home standards. The manufacturer shall remove the original serial number and add the serial number required by § 3280.6.

(2) A manufacturer may not certify a structure under this section after having applied the manufactured home serial number under § 3280.6.

(f) All certifications made under this section are subject to investigation by the Secretary to determine their accuracy. If a certification is false or inaccurate, the certification for purposes of this section is invalid and the structures that have been or may be the subject of the certification are not excluded from the coverage of the Act, the Federal Manufactured Home Con-

struction and Safety Standards, or these Regulations.

(1) If the Secretary has information that a certification may be false or inaccurate, the manufacturer will be given written notice of the nature of this information by certified mail and the procedure of this subparagraph will be followed.

(i) The manufacturer must investigate this matter and report its findings in writing as to the validity of this information to the Secretary within 15 days from the receipt of the Secretary's notice.

(ii) If a written report is received within the time prescribed in paragraph (f)(1)(i) of this section, the Secretary will review this report before determining whether a certification is false or inaccurate. If a report is not received within 15 days from the receipt of the Secretary's notice, the Secretary will make the determination on the basis of the information presented.

(iii) If the Secretary determines that a certification is false or inaccurate, the manufacturer will be given written notice and the reasons for this determination by certified mail.

(2) The Secretary may seek civil and criminal penalties provided for in section 611 of the Act, 42 U.S.C. 5410, if the party in question in the exercise of due care has reason to know that such certification is false or misleading as to any material fact.

[44 FR 68733, Nov. 29, 1979, as amended at 49 FR 10666, Mar. 22, 1984]

§ 3282.13 Voluntary certification.

(a) The purpose of this section is to provide a procedure for voluntary certification of non-conforming manufactured homes as required by 42 U.S.C. 5402(6) as amended by section 308(d)(B) of the Housing and Community Development Act of 1980.

(b) Structures which meet all of the requirements of a *manufactured home* as set out in § 3282.7(u), except the size requirements, shall be *manufactured homes* if the manufacturer files with the Secretary a certification in the following form:

[Name of manufacturer and address where structures are to be manufactured] certifies that it intends to manufacture structures

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that meet all of the requirements of manufactured homes set forth at 42 U.S.C. 5402(6) except the size requirements. Such structures are to be treated as manufactured homes for the purposes of the National Manufactured Housing Construction and Safety Standards Act of 1974 and the regulations promulgated pursuant thereto. Such structures will be built in conformance with the Standards. [Name of manufacturer] further certifies that if, at any time it manufactures structures which are not manufactured homes, it will identify each such structure by a permanent serial number placed on the structure during the first stage of production and that the series of serial numbers for such structures shall be distinguishable on the structures and in its records from the series of serial numbers used for manufactured homes.

(c) Whenever a manufacturer which has filed a certification pursuant to § 3282.13(b) produces structures which are not manufactured homes, it must identify each such structure by placing a permanent serial number on the structure during the first stage of production. The series of serial numbers placed on these structures shall be distinguishable on the structure and in the manufacturer's records from the series of serial numbers used for manufactured homes.

(d) A manufacturer may certify a structure as a manufactured home after having applied a serial number identifying it as a structure which is not a manufactured home. To do so, the manufacturer must secure the written consent of the IPIA. This consent may only be given after a DAPIA has approved the manufacturer's design and quality assistance manual in accordance with § 3282.361, and after the IPIA has thoroughly inspected the structure in at least one stage of production and after such removal of equipment, components or materials as the IPIA may require to assure that the structure conforms to the standards. After certification as a manufactured home has been approved, the manufacturer shall remove the original serial number and add the serial number required by § 3280.6.

(e) Once a manufacturer has certified under § 3282.13(b) that it intends to build structures which are manufactured homes in all respects except size, the manufacturer must then, with respect to those structures, comply with

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all of the requirements of the Act and its regulations. The structures may not thereafter be exempted under any other section of these regulations.

[47 FR 28093, June 29, 1982]

§ 3282.14 Alternative construction of manufactured homes.

(a) *Policy.* In order to promote the purposes of the Act, the Department will permit the sale or lease of one or more manufactured homes not in compliance with the Standards under circumstances wherein no affirmative action is needed to protect the public interest. The Department encourages innovation and the use of new technology in manufactured homes. Accordingly, HUD will permit manufacturers to utilize new designs or techniques not in compliance with the Standards in cases:

(1) Where a manufacturer proposes to utilize construction that would be prohibited by the Standards;

(2) Where such construction would provide performance that is equivalent to or superior to that required by the Standards; and

(3) Where (i) compliance with the Standards would be unreasonable because of the circumstances of the particular case, or (ii) the alternative construction would be for purposes of research, testing or development of new techniques or designs. If a request for alternative construction is submitted and the facts are consistent with these principles, the Secretary may issue a letter under paragraph (c) of this section stating that no action will be taken under the Act based upon specific failures to conform to the Standards or these regulations, provided that certain conditions are met. The issuance of a letter under paragraph (c) of this section will not affect any right that any purchaser may have under the Act or other applicable law and will not preclude any further agency action that may become necessary.

(b) *Request for alternative construction.* A manufacturer may submit a request for alternative construction of a manufactured home. The request should be sent to the U.S. Department of Housing and Urban Development, Manufactured

Housing Standards Division, 451 Seventh Street, SW., Washington, DC 20410. The request must include:

(1) A copy of the manufactured design or plan for each nonconforming model which a manufacturer plans to build;

(2) An explanation of the manner in which the design fails to conform with the Standards, including a list of the specific standards involved;

(3) An explanation of how the design will result in homes that provide the same level of performance, quality, durability and safety as would be provided under the Standards;

(4) A copy of data adequate to support the request, including applicable test data, engineering calculations or certifications from nationally recognized laboratories;

(5) An estimate of the maximum number of manufactured home units affected and the location, if known, to which the units will be shipped;

(6) An indication of the period of time during which the manufacturer proposes to engage in the manufacture, sale or lease of the nonconforming homes;

(7) A copy of the proposed notice to be provided to home purchasers;

(8) A list of the names and addresses of any dealers that would be selling the nonconforming homes; and

(9) A letter from the manufacturer's DAPIA indicating that the design(s) to which any nonconforming homes would be built meet the Standards in all other respects.

(c) *Issuance of the letter by the Secretary*—(1) *Contents of the letter*. If the Secretary issues a letter in response to a request for alternative construction, the letter shall include the specific standards affected, an explanation of the proposed activity or design, an explanation of how the request is consistent with the objectives of the Act, and any conditions that the manufacturer must meet.

(2) *Letter sent to IPIA, DAPIA and SAA*. The Secretary shall forward a copy of the letter to the manufacturer's IPIA and DAPIA along with a letter authorizing the DAPIA to approve plans containing the alternative construction, and authorizing the IPIA to permit use of the alternative construc-

tion, provided that the conditions set forth in the letter are met. The Secretary shall also forward a copy of the letter to the SAAs in the State of manufacture and the State(s) in which the homes are to be located, if known.

(3) *Alternative construction in additional models*. In cases where the Secretary grants a letter under this paragraph that is not model-specific, the Secretary may permit the manufacturer to include the alternative construction in additional models. In such cases, the DAPIA shall notify the Department of additional models that incorporate the alternative construction.

(d) *Revocation*. The Secretary may revoke or amend a letter issued under paragraph (c) of this section at any time. Such revocation or amendment will be prospective only. Where manufacturers have requested alternative construction for research, testing or development such alternative construction may not achieve the anticipated results. Therefore, the Secretary may require a manufacturer to bring those homes into compliance with the standards if, after the alternative construction has been in use for a period of time specified by the Secretary, these homes are not, in the Secretary's judgment, providing the levels of safety, quality and durability which would have been provided had the homes been built in compliance with the Standards.

(e) *Notice to prospective purchasers*. Manufacturers receiving letters under paragraph (c) of this section shall provide notice to prospective purchasers that the home does not conform to the Standards. Such notice shall be delivered to each prospective purchase before he or she enters into an agreement to purchase the home. The notice shall be in the following form or in such other form as may be approved by the Secretary:

NOTICE TO PURCHASERS

The Department of Housing and Urban Development has issued a letter to (Name of Manufacturer) concerning the homes in (location if known). As designed, the homes do not meet Federal Manufactured Home Construction and Safety Standards regarding (brief statement of manufacturer's non-conformance).

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HUD has evaluated the alternative construction and believes that it provides an equivalent level of quality, durability and safety to that provided by the Standards.

For further information about the specific Federal Standards involved, a copy of the letter issued pursuant to 24 CFR 3282.14(c) is available from this dealer or manufacturer upon request.

(f) *Serial numbers of homes constructed using alternative construction.* Manufacturers shall provide the Department with the serial numbers assigned to each home produced in conformance with the letter issued under paragraph (c) of this section within 90 days of their date of manufacture. Each serial number shall include the letters "AC" to indicate that the homes was produced under alternative construction procedures.

[49 FR 1967, Jan. 16, 1984]

Subpart B—Formal Procedures

§ 3282.51 Scope.

This subpart contains rules of procedure generally applicable to the transaction of official business under the National Manufactured Housing Construction and Safety Standards Act, including the rules governing public availability of information.

§ 3282.52 Address of communications.

Unless otherwise specified, communications shall be addressed to the Director, Manufactured Housing Standards Division, Department of Housing and Urban Development, 451 Seventh Street, SW., Washington, DC 20410.

§ 3282.53 Service of process on foreign manufacturers and importers.

The designation of an agent required by section 612(e) of the Act, 42 U.S.C. 5411(e), shall be in writing, dated, and signed by the manufacturer and the designated agent.

[61 FR 10860, Mar. 15, 1996]

§ 3282.54 Public information.

(a) *General.* Subject to the provisions of 24 CFR part 15 covering the production or disclosure of material or information and the provisions of 24 CFR part 16 at 40 FR 39729 relating to the Privacy Act, and except as otherwise

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provided by paragraphs (b), (c), (d), and (e) of this section, the Secretary may make available to the public:

(1) Any information which may indicate the existence of an imminent safety hazard, and

(2) Any information which may indicate the failure of a manufactured home to comply with applicable manufactured home construction and safety standards, and

(3) Such other information as the Secretary determines is necessary to carry out the Secretary's functions under the Act.

(b) *Protected information.* Data and information submitted or otherwise provided to the Secretary or an agent of the Secretary or a PIA or SAA which fall within the definitions of a trade secret or confidential commercial or financial information are exempt from disclosure under this section, only if the party submitting or providing the information so requests under paragraph (c) of this section. However, the Secretary may disclose such information to any person requesting it after deletion of the portions which are exempt, or in such combined or summary form as does not disclose the portions which are exempt from disclosure or in its entirety in accordance with section 614 of the Act, U.S.C. 5413.

(c) *Obtaining exemption.* Any party submitting any information to the Secretary in any form under this part, or otherwise in relation to the program established by the Act shall, if the party desires the information to be exempt from disclosure, at the time of submittal of the information or at any time thereafter, request that the information or any part thereof be protected from disclosure. The request for nondisclosure shall include the basis for the request under the Act or other authority and complete justification supporting the claim that the material should be exempt from disclosure. The request should also include a statement of the information in such combined or summary form that alleged trade secrets or other protected information and the identity of the submitting party would not be disclosed. This request need not be made with respect to information which was submitted to the Secretary, an SAA or a PIA prior

to the effective date of these regulations.

(d) *Request for information from PIAs or SAAs.* Whenever a PIA or SAA receives requests for disclosure of information, it shall disclose the information unless the party from which the information was originally obtained has submitted to the PIA or SAA a request that the information not be disclosed under paragraph (c) of this section, except that the PIA or SAA shall be governed by the provisions of 24 CFR part 16 (40 FR 39729) relating to the Privacy Act which may limit the disclosure of information. If a request for nondisclosure under paragraph (c) of this section has been received with respect to information whose disclosure is requested, the PIA or SAA shall refer the matter to the Secretary within 5 days of the request for disclosure. If a PIA or SAA receives a request for disclosure of information related to this program, which information was submitted to the PIA or SAA prior to the effective date of these regulations, the PIA or SAA shall refer the request for nondisclosure and required information to the Secretary.

[41 FR 19852, May 13, 1976, as amended at 61 FR 10860, Mar. 15, 1996]

Subpart C—Rules and Rulemaking Procedures

§ 3282.101 Generally.

Procedures that apply to the formulation, issuance, amendment, and revocation of rules pursuant to the Act are governed by the Act, the Administrative Procedure Act, 5 U.S.C. 551 *et seq.*, and part 10 of this title, except that the Secretary shall respond to a petition for rulemaking by an interested party within 180 days of receipt of the petition.

[61 FR 10860, Mar. 15, 1996]

§ 3282.111 Petitions for reconsideration of final rules.

(a) *Definition.* A petition for reconsideration of a final rule issued by the Secretary is a request in writing from any interested person which must be received not later than 60 days after

publication of the rule in the FEDERAL REGISTER. The petition shall state that it is a petition for reconsideration of a final rule, and shall contain an explanation as to why compliance with the rule is not practicable, is unreasonable, or is not in the public interest. If the petitioner requests the consideration of additional facts, the petitioner shall state the reason they were not presented to be treated as petitions for rulemaking.

(b) *Proceedings on petitions for reconsideration.* The Secretary may grant or deny, in whole or in part, any petition for reconsideration without further proceedings. The Secretary may issue a final decision on reconsideration without further proceeding, or may provide such opportunity to submit comments or information and data as the Secretary deems appropriate.

(c) Unless the Secretary determines otherwise, the filing of a petition under this section does not stay the effectiveness of the rule in question.

(d) Any party seeking to challenge any rule or regulation issued under the Act, except orders issued under section 604 42 U.S.C. 5403, if the challenge is brought before the expiration of the 60 day period set out in paragraph (a) of this section, shall file a timely petition for reconsideration under this section prior to seeking any other remedy.

§ 3282.113 Interpretative bulletins.

When appropriate, the Secretary shall issue interpretative bulletins interpreting the standards under the authority of § 3280.9 of this chapter or interpreting the provisions of this part. Issuance of interpretative bulletins shall be treated as rulemaking under this subpart C unless the Secretary deems such treatment not to be in the public interest and the interpretation is not otherwise required to be treated as rulemaking. All interpretative bulletins shall be indexed and made available to the public at the Manufactured Housing Standards Division and a copy of the index shall be published periodically in the FEDERAL REGISTER.

[61 FR 10860, Mar. 15, 1996]

Subpart D—Informal and Formal Presentations of Views, Hearings and Investigations

§ 3282.151 Applicability and scope.

(a) This subpart sets out procedures to be followed when an opportunity to present views provided for in the Act is requested by an appropriate party. Section 3282.152 provides for two types of procedures that may be followed, one informal and nonadversary, and one more formal and adversary. Section 3282.152 also sets out criteria to govern which type of procedure will be followed in particular cases.

(b) The procedures of § 3282.152 also apply to:

(1) Proceedings held by the Secretary whenever the suspension or disqualification of a primary inspection agency, which has been granted final approval, is recommended under § 3282.356 of these regulations, and

(2) Resolution of disputes where an SAA or manufacturer disagrees with a determination of a DAPIA under § 3282.361 that a manufactured home design does or does not conform to the standards or that a quality assurance manual is or is not adequate with a decision by an IPIA to red tag or not to red tag or to provide or not to provide a certification label for a manufactured home under § 3282.362 when the IPIA believes that the manufactured home does or does not conform to the standards.

(c) The procedures set out in § 3282.152 shall also be followed whenever State Administrative Agencies hold Formal or Informal Presentations of Views under § 3282.309.

(d) To the extent that these regulations provide for Formal or Informal Presentations of Views for parties that would otherwise qualify for hearings under 24 CFR part 24, the procedures of 24 CFR part 24 shall not be available and shall not apply.

[41 FR 19852, May 13, 1976, as amended at 51 FR 34467, Sept. 29, 1986; 61 FR 10442, Mar. 13, 1996]

§ 3282.152 Procedures to present views and evidence.

(a) *Policy.* All Formal and Informal Presentations of Views under this sub-

part shall be public, unless, for good cause, the Secretary determines it is in the public interest that a particular proceeding should be closed. If the Secretary determines that a proceeding should be closed, the Secretary shall state and make publicly available the basis for that determination.

(b) *Request.* Upon receipt of a request to present views and evidence under the Act, the Secretary shall determine whether the proceeding will be a Formal or an Informal Presentation of Views, and shall issue a notice under paragraph (c) of this section.

(c) *Notice.* When the Secretary decides to conduct a Formal or an Informal Presentation of Views under this section, the Secretary shall provide notice as follows:

(1) Except where the need for swift resolution of the question involved prohibits it, notice of a proceeding hereunder shall be published in the FEDERAL REGISTER at least 10 days prior to the date of the proceeding. In any case, notice shall be provided to interested persons to the maximum extent practicable. Direct notice shall be sent by certified mail to the parties involved in the hearing.

(2) The notice, whether published or mailed, shall include a statement of the time, place and nature of the proceeding; reference to the authority under which the proceeding will be held; a statement of the subject matter of the proceeding, the parties and issues involved; and a statement of the manner in which interested persons shall be afforded the opportunity to participate in the hearing.

(3) The notice shall designate the official who shall be the presiding officer for the proceedings and to whom all inquiries should be directed concerning such proceedings.

(4) The notice shall state whether the proceeding shall be held in accordance with the provisions of paragraph (f)—(Informal Presentation of Views) or paragraph (g)—(Formal Presentation of Views) of this section, except that when the Secretary makes the determinations provided for in sections 623 (d) and (f) of the Act, the requirements of paragraph (g) of this section shall apply. In determining whether the requirements of paragraph (f) or those of

paragraph (g) of this section shall apply the Secretary shall consider the following:

- (i) The necessity for expeditious action;
- (ii) The risk of injury to affected members of the public;
- (iii) The economic consequences of the decisions to be rendered; and
- (iv) Such other factors as the Secretary determines are appropriate.

(d) *Department representative.* If the Department is to be represented by Counsel, such representation shall be by a Department hearing attorney designated by the General Counsel.

(e) *Reporting and transcription.* Oral proceedings shall be stenographically or mechanically reported and transcribed under the supervision of the presiding officer, unless the presiding officer and the parties otherwise agree, in which case a summary approved by the presiding officer shall be kept. The original transcript or summary shall be a part of the record and the sole official transcript, or summary. A copy of the transcript or summary shall be available to any person at a fee established by the Secretary, which fee the Secretary may waive in the public interest. Any information contained in the transcript or summary which would be exempt from required disclosure under § 3282.54 of these regulations may be protected from disclosure if appropriate under that section upon a request for such protection under § 3282.54(c).

(f) *Informal presentation of views.* (1) An Informal Presentation of Views may be written or oral, and may include an opportunity for an oral presentation, whether requested or not, whenever the Secretary concludes that an oral presentation would be in the public interest, and so states in the notice. A presiding officer shall preside over all oral presentations held under this subsection. The purpose of any such presentation shall be to gather information to allow fully informed decision making. Informal Presentations of Views shall not be adversary proceedings. Oral presentations shall be conducted in an informal but orderly manner. The presiding officer shall have the duty and authority to conduct a fair proceeding, to take all necessary

action to avoid delay, and to maintain order. In the absence of extraordinary circumstances, the presiding officer at an oral Informal Presentation of Views shall not require that testimony be given under an oath or affirmation, and shall not permit either cross-examination of witnesses by other witnesses or their representatives, or the presentation of rebuttal testimony by persons who have already testified. The rules of evidence prevailing in courts of law or equity shall not control the conduct of oral Informal Presentations of Views.

(2) Within 10 days after an Informal Presentation of Views, the presiding officer shall refer to the Secretary all documentary evidence submitted, the transcript, if any, a summary of the issues involved and information presented in the Informal Presentation of Views and the presiding officer's recommendations, with the rationale therefor. The presiding officer shall make any appropriate statements concerning the apparent veracity of witnesses or the validity of factual assertions which may be within the competence of the presiding officer. The Secretary shall issue a Final Determination concerning the matters at issue within 30 days of receipt of the presiding officer's summary. The Final Determination shall include:

(i) A statement of findings, with specific references to principal supporting items of evidence in the record and conclusions, as well as the reasons or bases therefor, upon all of the material issues of fact, law, or discretion as presented on the record, and

(ii) An appropriate order. Notice of the Final Determination shall be given in writing and transmitted by certified mail, return receipt requested, to all participants in the presentation of views. The Final Determination shall be conclusive, with respect to persons whose interests were represented.

(g) *Formal presentation of views.* (1) A Formal Presentation of Views is an adversary proceeding and includes an opportunity for the oral presentation of evidence. All witnesses shall testify under oath or affirmation, which shall be administered by the presiding officer. Participants shall have the right to present such oral or documentary

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evidence and to conduct such cross-examination as the presiding officer determines is required for a full and true disclosure of facts. The presiding officer shall receive relevant and material evidence, rule upon offers of proof and exclude all irrelevant, immaterial or unduly repetitious evidence. However, the technicalities of the rules of evidence prevailing in courts of law or equity shall not control the conduct of a Formal Presentation of Views. The presiding officer shall take all necessary action to regulate the course of the Formal Presentation of Views to avoid delay and to maintain order. The presiding officer may exclude the attorney or witness from further participation in the particular Formal Presentation of Views and may render a decision adverse to the interests of the excluded party in his absence.

(2) *Decision.* The presiding officer shall make and file an initial written decision on the matter in question. The decision shall be filed within 10 days after completion of the oral presentation. The decision shall include:

(i) A statement of findings of fact, with specific references to principal supporting items of evidence in the record and conclusions, as well as the reasons or bases therefor, upon all of the material issues of law or discretion presented on the record, and

(ii) An appropriate order.

The presiding officer's decision shall be final and shall constitute the Final Determination of the Secretary unless reversed or modified within 30 days by the Secretary. Notice of the Final Determination shall be given in writing, and transmitted by registered or certified mail, return receipt requested, to all participants in the proceeding. The Final Determination shall be conclusive with respect to persons whose interests were represented.

[41 FR 19852, May 13, 1976, as amended at 51 FR 34467, Sept. 29, 1986]

§ 3282.153 Public participation in formal or informal presentation of views.

(a) Any interested persons may participate, in writing, in any Formal or Informal Presentation of Views held under the provisions of paragraph (f) or (g) of § 3282.152. The presiding officer

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shall, to the extent practicable, consider any such written materials.

(b) Any interested person may participate in the oral portion of any Formal or Informal Presentation of Views held under paragraphs (f) and (g) of § 3282.152 unless the presiding officer determines that participation should be limited or barred so as not unduly to prejudice the rights of the parties directly involved or unnecessarily to delay the proceedings.

[51 FR 34468, Sept. 29, 1986]

§ 3282.154 Petitions for formal or informal presentations of views, and requests for extraordinary interim relief.

Any person entitled to a Formal or an Informal Presentation of Views under paragraph (f) or paragraph (g) of § 3282.152 in order to address issues as provided for in § 3282.151(a) may petition the Secretary to initiate such a Presentation of Views. The petition may be accompanied by a request that the Secretary provide appropriate interim relief pending the issuance of the final determination or decision. No interim relief will be granted unless there is a showing of extraordinary cause. Upon receipt of a petition, the Secretary shall grant the petition and issue the notice provided for in § 3282.152(b) for Formal or Informal Presentation of Views, and may grant, deny or defer decision on any request for interim relief.

[51 FR 34468, Sept. 29, 1986]

§ 3282.155 Investigations.

The procedures for investigations and investigational proceedings are set forth in part 3800 of this chapter.

[61 FR 10442, Mar. 13, 1996]

§ 3282.156 Petitions for investigations.

(a) Any person may petition the Secretary in writing to open an investigation into whether noncompliances, defects, serious defects, or imminent safety hazards exist in manufactured homes. A petition shall include the reasons that the petitioner believes warrant an investigation, and it shall state any steps which have previously been taken to remedy the situation. The petition shall include all information

known to the petitioner concerning the identity of manufactured homes which may be affected and where those manufactured homes were manufactured. The Secretary shall respond to petitions concerning alleged imminent safety hazards and serious defects within 60 days and to petitions alleging the existence of defects or noncompliances within 120 days.

(b) Any person may petition the Secretary in writing to undertake an investigation for the purpose of determining whether a primary inspection agency should be disqualified. The petition shall set out all facts and information on which the petition is based and a detailed statement of why such information justifies disqualification. The Secretary shall consider such petitions when making determinations on final acceptance and continued acceptance. The Secretary shall respond to such petition within 120 days.

Subpart E—Manufacturer Inspection and Certification Requirements

§ 3282.201 Scope and purpose.

(a) This subpart sets out requirements which must be met by manufacturers of manufactured homes for sale to purchasers in the United States with respect to certification of manufactured home designs, inspection of designs, quality assurance programs, and manufactured home production, and certification of manufactured homes. Other than references and a general description of responsibilities, this subpart does not set out requirements with respect to remedial actions or reports which must be taken or filed under the Act and these regulations.

(b) The purpose of this subpart is to require manufacturers to participate in a system of design approvals and inspections which serve to assist them in assuring that manufactured homes which they manufacture will conform to Federal standards. Such approvals and inspections provide significant protection to the public by decreasing the number of manufactured homes with possible defects in them, and provide protection to manufacturers by reducing the number of instances in which costly remedial actions must be under-

taken after manufactured homes are sold.

§ 3282.202 Primary inspection agency contracts.

Each manufacturer shall enter into a contract or other agreement with as many Design Inspection Primary Inspection Agencies (DAPIAs) as it wishes and with enough Production Inspection Primary Inspection Agencies (IPIAs) to provide IPIA services for each manufacturing plant as set out in this subpart and in subpart H of this part. In return for the services provided by the DAPIAs and IPIAs, each manufacturer shall pay such reasonable fees as are agreed upon between the manufacturer and the primary inspection agency or, in the case of a State acting as an exclusive IPIA under § 3282.3 such fees as may be established by the State.

§ 3282.203 DAPIA services.

(a) Each manufacturer shall have each manufactured home design and each quality assurance manual which it intends to follow approved by a DAPIA under § 3282.361. The manufacturer is free to choose which DAPIA will evaluate and approve its designs and quality assurance materials manufacturer may obtain design and quality assurance manual approval from a single DAPIA regardless of the number of plants in which the design and quality assurance manual will be followed. A manufacturer may also obtain approval for the same design and quality assurance manual from more than one DAPIA. The choice of which DAPIA or DAPIAs to employ is left to the manufacturer.

(b) The manufacturer shall submit to the DAPIA such information as the DAPIA may require in order to carry out design approvals. This information shall, except where the manufacturer demonstrates to the DAPIA that it is not necessary, include the following:

(1) Construction drawings and/or specifications showing structural details and layouts of frames, floors, walls and roofs, and chassis; material specifications, framing details, door locations, etc., for each floor plan proposed to be manufactured,

(2) Structural analysis and calculations, test data and/or other accepted engineering practices used by the manufacturer to validate the design,

(3) Complete heat loss calculations for each significant variation of home design,

(4) Floor plans showing room arrangement and sizes, window sizes, emergency exits and locations, locations of smoke detectors, fixed appliance range hoods, and other standards related aspects of the manufactured home that can be shown on the floor plans,

(5) Diagrams of the fuel supply system, potable water system and drain, waste and vent systems. The diagrams shall specify the types of materials used, types of fittings and methods of installing required safety equipment,

(6) Wiring diagrams, including circuit allocation of electrical load and branch circuit calculations, a table of the branch circuit protection provided, the type of wiring used, and wiring methods,

(7) Details showing the design of air supply and return systems,

(8) Details of chassis construction, components, connections and running gear including rating capacities of tires,

(9) A list of fixed and portable appliances furnished with the manufactured home, including type of appliance, rating of appliance, and applicable minimum and maximum performance ratings and/or energy requirements,

(10) Detailed manufacturer installation instructions including specifications and procedures for the erection and hook-up of the home at its permanent location, and

(11) Reports of all tests that were run to validate the conformance of the design to the standards.

(c) The manufacturer shall submit to the DAPIA such information as the DAPIA may require in order to carry out quality assurance manual approvals. At a minimum, this information shall include the quality assurance manual for which approval is sought. That manual shall include the manufacturer's quality assurance program, an organizational chart showing the accountability, by position, of the manufacturer's quality control per-

sonnel, a description of production tests and test equipment required for compliance with the standards, a station-by-station description of the manufacturing process, a list of quality control inspections required by the manufacturer at each station, and identification by title of each person who will be held accountable for each quality control inspection.

(d) Manufacturers may be required to furnish supplementary information to the DAPIA if the design information or the quality assurance manual is not complete or if any information is not in accordance with accepted engineering practice.

(e) When a manufacturer wishes to make a change in an approved design or quality assurance manual, the manufacturer shall obtain the approval of the DAPIA which approved the design or manual prior to production for sale. The procedures for obtaining such approval are set out in §3282.361.

(f) The information to be submitted to a DAPIA under §3282.203 (b) and (c) may be prepared by the manufacturer's staff or outside consultants, including other DAPIAs. However, a DAPIA may not perform design or quality assurance manual approvals for any manufacturer whose design or manual has been created or prepared in whole or in part by members of the DAPIA's organization or of any affiliated organization.

(g) Each manufacturer shall maintain a copy of the drawings, specifications, and sketches from each approved design received from a DAPIA under §3282.361(b)(4) in each plant in which manufactured homes are being produced to the design. Each manufacturer shall also maintain in each manufacturing plant a copy of the approved quality assurance manual received from a DAPIA under §3282.361(c)(3) that is being followed in the plant. These materials shall be kept current and shall be readily accessible for use by the Secretary or other parties acting under these regulations.

§3282.204 IPIA services.

(a) Each manufacturer shall obtain the services of an IPIA as set out in §3282.362 for each manufacturing plant operated by the manufacturer.

(b) The manufacturer shall make available to the IPIA operating in each of its plants a copy of the drawings and specifications from the DAPIA approved design and the quality assurance manual for that plant, and the IPIA shall perform an initial factory inspection as set out in § 3282.362(b). If the IPIA issues a deviation report after the initial factory inspection, the manufacturer shall make any corrections or adjustments which are necessary to conform with the DAPIA approved designs and manuals. After the corrections required by the deviation report are completed to the satisfaction of the IPIA, the IPIA shall issue the certification report as described in § 3282.362(b)(2). In certain instances a DAPIA may provide the certification report. (See § 3282.362) The manufacturer shall maintain a current copy of each certification report in the plant to which the certification report relates.

(c) After the certification report has been signed by the IPIA, the manufacturer shall obtain labels from the IPIA and shall affix them to completed manufactured homes as set out in § 3282.362(c)(2). During the initial factory certification, the IPIA may apply labels to manufactured homes which it knows to be in compliance with the standards if it is performing complete inspections of all phases of production of each manufactured home and the manufacturer authorizes it to apply labels.

(d) During the course of production the manufacturer shall maintain a complete set of approved drawings, specifications, and approved design changes for the use of the IPIA's inspector and always available to that inspector when in the manufacturing plant.

(e) If, during the course of production, an IPIA finds that a failure to conform to a standard exists in a manufactured home in production, the manufacturer shall correct the failure to confirm in any manufactured homes still in the factory and held by distributors or dealers and shall carry out remedial actions under §§ 3282.404 and 3282.405 with respect to any other manufactured homes which may contain the same failure to conform.

§ 3282.205 Certification requirements.

(a) Every manufacturer shall make a record of the serial number of each manufactured home produced, and a duly authorized representative of the manufacturer shall certify that each manufactured home has been constructed in accordance with the Federal standards. The manufacturer shall furnish a copy of that certification to the IPIA for the purpose of determining which manufactured homes are subject to the notification and correction requirements of subpart I of this part.

(b) Every manufacturer of manufactured homes shall certify on the data plate as set out in § 3280.5 of chapter XX of 24 CFR and § 3282.362(c)(3) that the manufactured home is designed to comply with the Federal manufactured home construction and safety standards in force at the time of manufacture in addition to providing other information required to be completed on the data plate.

(c) Every manufacturer of manufactured homes shall furnish to the dealer or distributor of each of its manufactured homes a certification that such manufactured home, to the best of the manufacturer's knowledge and belief, conforms to all applicable Federal construction and safety standards. This certification shall be in the form of the label provided by the IPIA under § 3282.362(c)(2). The label shall be affixed only at the end of the last stage of production of the manufactured home.

(d) The manufacturer shall apply a label required or allowed by the regulations in this part only to a manufactured home that the manufacturer knows by its inspections to be in compliance with the standards.

[41 FR 19852, May 13, 1976, as amended at 41 FR 24970, June 21, 1976; 61 FR 10860, Mar. 15, 1996]

§ 3282.206 Disagreement with IPIA or DAPIA.

Whenever a manufacturer disagrees with a finding by a DAPIA or an IPIA acting in accordance with subpart H of this part, the manufacturer may request a Formal or Informal Presentation of Views as provided in § 3282.152. The manufacturer shall not, however,

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produce manufactured homes pursuant to designs which have not been approved by a DAPIA or produce manufactured homes which the relevant IPIA believes not to conform to the standards unless and until:

(a) The Secretary determines that the manufacturer is correct in believing the design of the manufactured home conforms to the standards; or

(b) Extraordinary interim relief is granted under § 3282.154; or

(c) The DAPIA or IPIA otherwise resolves the disagreement.

[41 FR 19852, May 13, 1976, as amended at 51 FR 34468, Sept. 29, 1986; 61 FR 10860, Mar. 15, 1996]

§ 3282.207 Manufactured home consumer manual requirements.

(a) The manufacturer shall provide a consumer manual with each manufactured home that enters the first stage of production on or after July 31, 1977, pursuant to section 617 of the National Manufactured Housing Construction and Safety Standards Act, 42 U.S.C. 5416.

(b) The manufacturer shall provide the consumer manual by placing a manual in each such manufactured home before the manufactured home leaves the manufacturing plant. The manual shall be placed in a conspicuous location in a manner likely to assure that it is not removed until the purchaser removes it.

(c) If a manufacturer is informed that a purchaser did not receive a consumer manual, the manufacturer shall provide the appropriate manual to the purchaser within 30 days of being so informed.

(d) No dealer or distributor may interfere with the distribution of the consumer manual. When necessary, the dealer or distributor shall take any appropriate steps to assure that the purchaser receives a consumer manual from the manufacturer.

(e) If a consumer manual or a change or revision to a manual does not substantially comply with the guidelines issued by HUD, the manufacturer shall cease distribution of the consumer manual and shall provide a corrected manual for each manufactured home for which the inadequate or incorrect manual or revision was provided. A

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manual substantially complies with the guidelines if it presents current material on each of the subjects covered in the guidelines in sufficient detail to inform consumers about the operation, maintenance, and repair of the manufactured home. An updated copy of guidelines published in the FEDERAL REGISTER on March 15, 1996, can be obtained by contacting the Office of Manufactured Housing and Regulatory Functions, Department of Housing and Urban Development, 451 Seventh Street, SW., Washington, DC, 20410; the Information Center, Department of Housing and Urban Development, Room 1202, 451 Seventh Street, SW., Washington, DC, 20410; or any HUD Area or State Office.

[61 FR 10860, Mar. 15, 1996]

§ 3282.208 Remedial actions—general description.

(a) *Notification.* A manufacturer may be required to provide formal notice to manufactured home owners and dealers, as set out in subpart I of this part, if the manufacturer, the Secretary, or a State Administrative Agency determines under that subpart that an imminent safety hazard, serious defect, defect, or noncompliance exists or may exist in a manufactured home produced by that manufacturer.

(b) *Correction.* A manufacturer may be required to correct imminent safety hazards and serious defects which the manufacturer or the Secretary determines under subpart I exist in manufactured homes produced by the manufacturer. This correction would be carried out in addition to the sending of formal notice as described in paragraph (a) of this section.

(c) *Cooperation.* The manufacturer shall be responsible for working with the DAPIA, IPIA, any SAA, the Secretary, and the Secretary's agent as necessary in the course of carrying out investigations and remedial actions under subpart I.

(d) *Avoidance of formalities.* The provisions for notification and required correction outlined in paragraphs (a) and (b) of this section and described more fully in subpart I may be waived or avoided in certain circumstances under that subpart.

§ 3282.209 Report requirements.

The manufacturer shall submit reports to the PIAs, SAAs, and the Secretary as required by subpart L of these regulations.

§ 3282.210 Payment of monitoring fee.

(a) Each manufacturer shall pay the monitoring fee established under §§ 3282.307 and 3282.454 for each transportable section of each manufactured housing unit that it manufactures under the Federal standards.

(b) The monitoring fee shall be paid in the form of a check made payable to the Secretary or the Secretary's agent. The manufacturer shall give to the IPIA (or to any other person or agency designated in writing by the Secretary) the required check in the amount of the number of labels, as required by § 3282.365, multiplied by the amount of the fee per transportable section of each manufactured housing unit.

[50 FR 28398, July 12, 1985]

§ 3282.211 Record of purchasers.

(a) *Information requirements for purchasers.* (1) Every manufacturer of manufactured homes shall, for each manufactured home manufactured under the Federal standards, provide with the manufactured home a booklet containing at least 3 detachable cards as described in paragraph (a)(2) of this section. On the front of the booklet, in bold faced type, shall be printed the following language:

“Keep this booklet with your manufactured home. Title VI of the Housing and Community Development Act of 1974 provides you with protection against certain construction and safety hazards in your manufactured home. To help assure your protection, the manufacturer of your manufactured home needs the information which these cards, when completed and mailed, will supply. If you bought your home from a dealer, please be sure that your dealer has completed and mailed a card for you. If you acquired your home from someone who is not a dealer, you should promptly fill out and send a card to the manufacturer. It is important that you keep this booklet and give it to any person who buys the manufactured home from you.”

(2) The detachable cards shall contain blanks for the following information:

(i) Name and address of the dealer or other person selling the manufactured home to the purchaser;

(ii) Name and complete mailing address of the manufactured home purchaser;

(iii) Address where the manufactured home will be located, if not the same as item (a)(2)(ii) of this section.

(iv) Date of sale to the purchaser;

(v) Month, day and year of manufacture;

(vi) Identification number of the manufactured home;

(vii) Model and/or type designation of the manufactured home as provided by the manufacturer; and

(viii) A designation of the zones for which the manufactured home is equipped, as set forth in § 3280.305 in this title.

Additionally, the cards shall have the name and address of the manufacturer printed clearly on the reverse side and shall contain adequate postage or business reply privileges to ensure return to the manufacturer. The manufacturer shall have the responsibility for filing in the blanks on the cards for paragraphs (a)(2) (v), (vi), (vii), and (viii) of this section.

(3) The manufacturer shall maintain all cards received so that the manufacturer has a readily accessible record of the current purchaser or owner and the current address of all manufactured homes manufactured by it for which a card has been received.

Subpart F—Dealer and Distributor Responsibilities**§ 3282.251 Scope and purpose.**

(a) This subpart sets out the responsibilities which shall be met by distributors and dealers with respect to manufactured homes manufactured after the effective date of the standards for sale to purchasers in the United States. It prohibits the sale, lease, or offer for sale or lease of manufactured homes known by the distributor or dealer not to be in conformance with the standards, and it includes responsibilities for maintaining certain records and assisting in the gathering of certain information.

(b) The purpose of this subpart is to inform distributors and dealers when

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they may sell manufactured homes, when they are prohibited from selling manufactured homes, and what they may do in order to prepare a manufactured home for sale if it is not in conformance with the standards.

(c) For purposes of this part, any manufacturer or distributor who sells, leases, or offers for sale or lease a manufactured home to a purchaser shall be a dealer for purposes of that transaction.

§ 3282.252 Prohibition of sale.

(a) No distributor or dealer shall make use of any means of transportation affecting interstate or foreign commerce or the mails to sell, lease, or offer for sale or lease in the United States any manufactured home manufactured on or after the effective date of an applicable standard unless:

(1) There is affixed to the manufactured home a label certifying that the manufactured home conforms to applicable standards as required by § 3282.205(c), and

(2) The distributor or dealer, acting as a reasonable distributor or dealer, does not know that the manufactured home does not conform to any applicable standards.

(b) This prohibition applies to any affected manufactured homes until the completion of the entire sales transaction. A sales transaction with a purchaser is considered completed when all the goods and services that the dealer agreed to provide at the time the contract was entered into have been provided. Completion of a retail sale will be at the time the dealer completes set-up of the manufactured home if the dealer has agreed to provide the set-up, or at the time the dealer delivers the home to a transporter, if the dealer has not agreed to transport or set up the manufactured home, or to the site if the dealer has not agreed to provide set-up.

(c) This prohibition of sale does not apply to manufactured homes which are placed in production prior to the effective date of the standards, and it does not apply to "used" manufactured homes which are being sold or offered for sale after the first purchase in good faith for purposes other than the resale.

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§ 3282.253 Removal of prohibition of sale.

(a) If a distributor or dealer has a manufactured home in its possession or a manufactured home with respect to which the sales transaction has not been completed, and the distributor or dealer, acting as a reasonable distributor or dealer, knows as a result of notification by the manufacturer or otherwise that the manufactured home contains a failure to conform or imminent safety hazard, the distributor or dealer may seek the remedies available to him under § 3282.415.

(b) When, in accordance with § 3282.415, a manufacturer corrects a failure to conform to the applicable standard or an imminent safety hazard, the distributor or dealer, acting as a reasonable distributor or dealer, may accept the remedies provided by the manufacturer as having corrected the failure to conform or imminent safety hazard. The distributor or dealer, therefore, may sell, lease, or offer for sale or lease any manufactured home so corrected by the manufacturer.

(c) When a distributor or dealer is authorized by a manufacturer to correct a failure to conform to the applicable standard or an imminent safety hazard and completes the correction in accordance with the manufacturer's instructions, the distributor or dealer may sell, or lease or offer for sale or lease the manufactured home in question, provided that the distributor or dealer, acting as a reasonable distributor or dealer knows that the manufactured home conforms to the standards. A distributor or dealer and a manufacturer, at the manufacturer's option, may agree in advance that the distributor or dealer is authorized to make such corrections as the manufacturer believes are within the expertise of the dealer.

(d) If the corrections made under paragraphs (b) and (c) of this section do not bring the manufactured home into conformance or correct the imminent safety hazard, the provisions of § 3282.415 will continue in effect prior to completion of the sales transaction.

§ 3282.254 Distributor and dealer alterations.

(a) If a distributor or dealer alters a manufactured home in such a way as to create an imminent safety hazard or to create a condition which causes a failure to conform with applicable Federal standards, the manufactured home affected may not be sold, leased, or offered for sale or lease.

(b) After correction by the distributor or dealer of the failure to conform or imminent safety hazard, the corrected manufactured home may be sold, leased, or offered for sale or lease.

(c) Distributors and dealers shall maintain complete records of all alterations made under paragraphs (a) and (b) of this section.

§ 3282.255 Completion of information card.

(a) Whenever a distributor or dealer sells a manufactured home subject to the standards to a purchaser, the distributor or dealer shall fill out the card with information provided by the purchaser and shall send the card to the manufacturer. (See § 3282.211.)

(b) Whenever a distributor or dealer sells a manufactured home to an owner which was originally manufactured under the standards, the distributor or dealer shall similarly use one of the detachable cards which was originally provided with the manufactured home. If such a card is no longer available, the distributor or dealer shall obtain the information which the card would require and send it to the manufacturer of the manufactured home in an appropriate format.

§ 3282.256 Distributor or dealer complaint handling.

(a) When a distributor or dealer believes that a manufactured home in its possession which it has not yet sold to a purchaser contains an imminent safety hazard, serious defect, defect, or noncompliance, the distributor or dealer shall refer the matter to the manufacturer for remedial action under § 3282.415. If the distributor or dealer is not satisfied with the action taken by the manufacturer, it may refer the matter to the SAA in the state in which the manufactured home is lo-

cated, or to the Secretary if there is no such SAA.

(b) Where a distributor or dealer receives a consumer complaint or other information concerning a manufactured home sold by the distributor or dealer, indicating the possible existence of an imminent safety hazard, serious defect, defect, or noncompliance in the manufactured home, the distributor or dealer shall refer the matter to the manufacturer.

Subpart G—State Administrative Agencies**§ 3282.301 General—scope.**

This subpart sets out procedures to be followed and requirements to be met by States which wish to participate as State Administrative Agencies (SAA) under the Federal standards enforcement program. Requirements relating to States which wish to participate as primary inspection agencies under the Federal standards enforcement program are set out in subpart H of this part. Requirements which States must meet in order to receive full or conditional approval as SAAs and the responsibilities of such agencies are set out in § 3282.302. Reporting requirements for approved and conditionally approved SAAs are set out in subpart L.

§ 3282.302 State plan.

A State wishing to qualify and act as a SAA under this subpart shall make a State Plan Application under this section. The State Plan Application shall be made to the Director, Manufactured Housing Standards Division, Department of Housing and Urban Development, 451 Seventh Street, SW., Washington, DC 20410, and shall include:

(a) An original and one copy of a cover sheet which shall show the following:

(1) The name and address of the State agency designated as the sole agency responsible for administering the plan throughout the State,

(2) The name of the administrator in charge of the agency,

(3) The name, title, address, and phone number of the person responsible for handling consumer complaints concerning standards related problems in

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manufactured homes under subpart I of this part,

(4) A list of personnel who will carry out the State plan,

(5) The number of manufactured home manufacturing plants presently operating in the State,

(6) The estimated total number of manufactured homes manufactured in the State per year,

(7) The estimated total number of manufactured homes set up in the State per year, and

(8) A certification signed by the administrator in charge of the designated State agency stating that, if it is approved by the Secretary, the State plan will be carried out in full, and that the regulations issued under the Act shall be followed,

(b) An original and one copy of appropriate materials which:

(1) Demonstrate how the designated State agency shall ensure effective handling of consumer complaints and other information referred to it that relate to noncompliances, defects, serious defects or imminent safety hazards as set out in subpart I of this part, including the holding of Formal and Informal Presentations of Views and the fulfilling of all other responsibilities of SAAs as set out in this subpart G,

(2) Provide that personnel of the designated agency shall, under State law or as agents of HUD, have the right at any reasonable time to enter and inspect all factories, warehouses, or establishments in the State in which manufactured homes are manufactured,

(3) Provide for the imposition under State authority of civil and criminal penalties which are identical to those set out in section 611 of the Act, 42 U.S.C. 5410 except that civil penalties shall be payable to the State rather than to the United States,

(4) Provide for the notification and correction procedures under subpart I of this part where the State Administrative Agency is to act under that subpart by providing for and requiring approval by the State Administrative Agency of the plan for notification and correction described in §3282.410, including approval of the number of units that may be affected and the proposed repairs, and by providing for approval

of corrective actions where appropriate under subpart I,

(5) Provide for oversight by the SAA of:

(i) Remedial actions carried out by manufacturers for which the SAA approved the plan for notification or correction under §3282.405, or §3282.407, or for which the SAA has waived formal notification under §3282.405 or §3282.407, and

(ii) A manufacturer's handling of consumer complaints and other information under §3282.404 as to plants located within the State,

(6) Provide for the setting of monitoring inspection fees in accordance with guidelines established by the Secretary and provide for participation in the fee distribution system set out in §3282.307.

(7) Contain satisfactory assurances in whatever form is appropriate under State law that the designated agency has or will have the legal authority necessary to carry out the State plan as submitted for full or conditional approval,

(8) Contain satisfactory assurances that the designated agency has or will have, in its own staff or provided by other agencies of the state or otherwise, the personnel, qualified by education or experience necessary to carry out the State plan,

(9) Include the resumes of administrative personnel in policy making positions and of all inspectors and engineers to be utilized by the designated agency in carrying out the State plan,

(10) Include a certification that none of the personnel who may be involved in carrying out the State plan in any way are subject to any conflict of interest of the type discussed in §3282.359 or otherwise, except that members of councils, committees, or similar bodies providing advice to the designated agency are not subject to the requirement,

(11) Include an estimate of the cost to the State of carrying out all activities called for in the State plan, under this section and §3282.303, which estimate shall be broken down by particular function and indicate the correlation between the estimate and the number of manufactured homes manufactured

in the State and the number of manufactured homes imported into the State, and the relationship of these factors to any fees currently charged and any fees charged during the preceding two calendar years. A description of all current and past State activities with respect to manufactured homes shall be included with this estimate.

(12) Give satisfactory assurances that the State shall devote adequate funds to carrying out its State plan,

(13) Indicate that State Law requires manufacturers, distributors, and dealers in the State to make reports pursuant to section 614 of the Act 42 U.S.C. 5413 and this chapter of these regulations in the same manner and to the same extent as if the State plan were not in effect,

(14) Provide that the designated agency shall make reports to the Secretary as required by subpart L of this part in such form and containing such information as the Secretary shall from time to time require,

(c) A state plan may be granted conditional approval if all of the requirements of §3282.302 (a) and (b) are met except paragraphs (b)(2), (b)(3), (b)(6) or (b)(13). When conditional approval is given, the state shall not be considered approved under section 623 of the Act, 42 U.S.C. 5422, but it will participate in all phases of the program as called for in its State plan. Conditional approval shall last for a maximum of five years, by which time all requirements shall be met for full approval, or conditional approval shall lapse. However, the Secretary may for good cause grant an extension of conditional approval upon petition by the SAA.

(d) If a State wishes to discontinue participation in the Federal enforcement program as an SAA, it shall provide the Secretary with a minimum of 90 days notice.

(e) *Exclusive IPIA status.* (1) A State that wishes to act as an exclusive IPIA under §3282.352 shall so indicate in its State Plan and shall include in the information provided under paragraph (b)(11) of this section the fee schedule for the State's activities as an IPIA and the relationship between the proposed fees and the other information provided under paragraph (b)(11) of this

section. If the Secretary determines that the fees to be charged by a State acting as an IPIA are unreasonable, the Secretary shall not grant the State status as an exclusive IPIA.

(2) The State shall also demonstrate in its State Plan that it has the present capability to act as an IPIA for all plants operating in the State.

[41 FR 19852, May 13, 1976, as amended at 47 FR 5888, Feb. 9, 1982; 51 FR 34468, Sept. 29, 1986; 61 FR 10860, Mar. 15, 1996]

§ 3282.303 State plan—suggested provisions.

The following are not required to be included in the State plan, but they are urged as necessary to provide full consumer protection and assurances of manufactured home safety:

(a) Provision for monitoring of dealers' lots within the State for transit damage, seal tampering, and dealer performance generally,

(b) Provision of approvals of all alterations made to certified manufactured homes by dealer in the State. Under this program, the State would assure that alterations did not result in the failure of the manufactured home to comply with the standards.

(c) Provision for monitoring of the installation of manufactured homes set up in the State to assure that the homes are properly installed and, where necessary, tied down,

(d) Provision for inspection of used manufactured homes and requirements under State authority that used manufactured homes meet a minimal level of safety and durability at the time of sale, and,

(e) Provision for regulation of manufactured home transportation over the road to the extent that such regulation is not preempted by Federal authority.

§ 3282.304 Inadequate State plan.

If the Secretary determines that a State plan submitted under this subpart is not adequate, the designated State agency shall be informed of the additions and corrections required for approval. A revised State plan shall be submitted within 30 days of receipt of such determination. If the revised State plan is inadequate or if the State fails to resubmit within the 30 day period or otherwise indicates that it does

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not intend to change its State plan as submitted, the Secretary shall notify the designated State agency that the State plan is not approved and that it has a right to a hearing on the disapproval in accordance with subpart D of this part.

§ 3282.305 State plan approval.

The Secretary's approval or conditional approval of a State plan Application shall qualify that State to perform the functions for which it has been approved.

§ 3282.306 Withdrawal of State approval.

The Secretary shall, on the basis of reports submitted by the State, and on the basis of HUD monitoring, make a continuing evaluation of the manner in which each State is carrying out its State plan and shall submit the reports of such evaluation to the appropriate committees of the Congress. Whenever the Secretary finds, after affording due notice and opportunity for a hearing in accordance with subpart D of this part, that in the administration of the State program there is a failure to comply substantially with any provision of the State plan or that the State plan has become inadequate, the Secretary shall notify the State of withdrawal of approval or conditional approval of the State program. The State program shall cease to be in effect at such time as the Secretary may establish.

§ 3282.307 Monitoring inspection fee establishment and distribution.

(a) Each approved State shall establish a monitoring inspection fee in an amount required by the Secretary. This fee shall be an amount paid by each manufactured home manufacturer in the State for each transportable section of each manufactured housing unit produced by the manufacturer in that State. In non-approved and conditionally-approved States, the fee shall be set by the Secretary.

(b) The monitoring inspection fee shall be paid by the manufacturer to the Secretary or to the Secretary's Agent, who shall distribute a portion of the fees collected from all manufactured home manufacturers among the approved and conditionally-approved

States in accordance with an agreement between the Secretary and the States and based upon the following formula:

(1) \$9.00 of the monitoring inspection fee collected for each transportable section of each new manufactured housing unit that, after leaving the manufacturing plant, is first located on the premises of a dealer, distributor, or purchaser in that State; plus

(2) \$2.50 of the monitoring inspection fee collected for each transportable section of each new manufactured housing unit produced in a manufacturing plant in that State.

(c) A portion of the monitoring inspection fee collected also shall be distributed by the Secretary or the Secretary's Agent based on the extent of participation of the State in the Joint Team Monitoring Program set out in § 3282.308.

(d) To assure that a State devotes adequate funds to carry out its State Plan, a State may impose an additional reasonable inspection fee to offset expenses incurred by that State in conducting inspections. Such fee shall not exceed that amount which is the difference between the amount of funds distributed to the State as provided in paragraph (b) of this section and the amount necessary to cover the costs of inspections. Such fee shall be part of the State Plan pursuant to § 3282.302(b) (11) and (12) and shall be subject to the approval of the Secretary pursuant to § 3282.305.

(e) The Secretary may establish by notice in the FEDERAL REGISTER a monitoring inspection fee which is to be paid by manufacturers for each transportable section of each manufactured housing unit manufactured in nonapproved and conditionally approved States as described in § 3282.210. To determine the amount of the inspection fee to be paid for each transportable section of each manufactured home, the Secretary shall divide the (estimated) number of transportable sections of manufactured homes (based on recent industry production figures) into the anticipated aggregate cost of conducting the inspection program in the foreseeable future. The time period selected for projecting the Department's inspection-related costs and

number of transportable sections need not always be the same, but must be for a period of sufficient duration to provide for access to reasonable underlying data. To determine the aggregate cost of conducting the inspection program, the Secretary shall calculate the sum necessary to support:

(1) Inspection-related activities of State Administrative Agencies;

(2) Inspection-related activities performed by the Department of Housing and Urban Development;

(3) Inspection-related activities performed by monitoring inspection contractors;

(4) Miscellaneous activities involving the performance of inspection-related activities by the Department, including on-site inspections on an ad hoc basis; and

(5) Maintenance of adequate funds to offset short-term fluctuations in costs that do not warrant revising the fee under the authority of this section.

(f) The Secretary may at any time revise the amount of the fees established under paragraph (a) or (e) of this section by placing a notice of the amount of the revised fee in the FEDERAL REGISTER.

[50 FR 28398, July 12, 1985, as amended at 56 FR 65186, Dec. 16, 1991]

§ 3282.308 State participation in monitoring of primary inspection agencies.

(a) An SAA may provide personnel to participate in joint team monitoring of primary inspection agencies as set out in subpart J. If an SAA wishes to do so, it must include in its State plan a list of what personnel would be supplied for the teams, their qualifications, and how many person-years the State would supply. All personnel will be subject to approval by the Secretary or the Secretary's agent. A person-year is 2,080 hours of work.

(b) If an SAA wishes to monitor the performance of primary inspection agencies acting within the State, it must include in its State plan a description of how extensively, how often, and by whom this will be carried out. This monitoring shall be coordinated by the Secretary, or the Secretary's agent with monitoring carried out by joint monitoring teams, and in

no event shall an SAA provide monitoring where the State is also acting as a primary inspection agency.

§ 3282.309 Formal and informal presentations of views held by SAAs.

(a) When an SAA is the appropriate agency to hold a Formal or Informal Presentation of Views under § 3282.407 of subpart I, the SAA shall follow the procedures set out in §§ 3282.152 and 3282.153, with the SAA acting as the Secretary otherwise would under that section. Where § 3282.152 requires publication of notice in the FEDERAL REGISTER, the SAA shall, to the maximum extent possible, provide equivalent notice throughout the State by publication in the newspaper or newspapers having State-wide coverage or otherwise. The determination of whether to provide an Informal Presentation of Views under § 3282.152(f), or a Formal Presentation of Views under § 3282.152(g), is left to the SAA.

(b) Notwithstanding the provisions of § 3282.152(f)(2) and (g)(2) relating to the conclusive effect of a final determination, any party, in a proceeding held at an SAA under this section, including specifically the owners of affected manufactured homes, States in which affected manufactured homes are located, consumer groups representing affected owners and manufacturers (but limited to parties with similar substantial interest) may appeal to the Secretary in writing any Final Determination by an SAA which is adverse to the interest of that party. This appeal on the record shall be made within 30 days of the date on which the Final Determination was made by the SAA.

[41 FR 19852, May 13, 1976, as amended at 51 FR 34468, Sept. 29, 1986]

Subpart H—Primary Inspection Agencies

§ 3282.351 General.

(a) This subpart sets out the requirements which must be met by States or private organizations which wish to qualify as primary inspection agencies under these regulations. It also sets out the various functions which will be carried out by primary inspection agencies.

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(b) There are four basic functions which are performed by primary inspection agencies:

(1) Approval of the manufacturer's manufactured home design to assure that it is in compliance with the standard;

(2) Approval of the manufacturer's quality control program to assure that it is compatible with the design;

(3) Approval of the manufacturer's plant facility and manufacturing process to assure that the manufacturer can perform its approved quality control program and can produce manufactured homes in conformance with its approved design, and

(4) Performance of ongoing inspections of the manufacturing process in each manufacturing plant to assure that the manufacturer is continuing to perform its approved quality control program and, with respect to those aspects of manufactured homes inspected, is continuing to produce manufactured homes in performance with its approved designs and in conformance with the standards (see § 3282.362(c)(1)).

(c) There are two types of primary inspection agencies which perform these functions:

(1) Those which approve designs and quality control programs (Design Approval Primary Inspection Agencies—DAPIAs) and

(2) Those which approve plants and perform ongoing inspections in the manufacturing plants (Production Inspection Primary Inspection Agencies—IPIAs).

(d) States and private organizations whose submissions under this subpart are acceptable shall be granted provisional acceptance. Final acceptance shall be conditioned upon adequate performance, which will be determined through monitoring of the actions of the primary inspection agencies. Monitoring of all primary inspection agencies shall be carried out as set out in subpart J. HUD accepted agencies can perform DAPIA functions for any manufacturer in any State and IPIA functions in any State except those in which the State has been approved to act as the exclusive IPIA under § 3282.352.

(e) Primary inspection agencies approved under this subpart may contract with manufactured home manufacturers (see § 3282.202) to provide the services set out in this subpart. Any IPIA which charges fees which are excessive in relation to the services rendered shall be subject to disqualification under § 3282.356.

§ 3282.352 State exclusive IPIA functions.

(a) Any State which has an approved State Administrative Agency may, if accepted as an IPIA, act as the exclusive IPIA within the State. A State which acts as an IPIA but is not approved as an SAA may not act as the exclusive IPIA in the State. A State which acts as an exclusive IPIA shall be staffed to provide IPIA services to all manufacturers within the state and may not charge unreasonable fees for those services.

(b) States which wish to act as exclusive IPIAs shall apply for approval to do so in their State plan applications. They shall specify the fees they will charge for IPIA services and shall submit proposed fee revisions to the Secretary prior to instituting any change in fees. If at any time the Secretary finds that those fees are not commensurate with the fees generally being charged for similar services, the Secretary will withhold or revoke approval to act as an exclusive IPIA. States acting as DAPIAs and also as exclusive IPIAs shall establish separate fees for the two functions and shall specify what additional services (such as approval of design changes and full time inspections) these fees cover. As provided in § 3282.302(b)(11), each State shall submit fee schedules for its activities and, where appropriate, the fees presently charged for DAPIA and IPIA services, and any fees charged for DAPIA and IPIA services during the preceding two calendar years.

(c) A State's status as an exclusive IPIA shall commence upon approval of the State Plan Application and acceptance of the State's submission under § 3282.355. Where a private organization accepted or provisionally accepted as an IPIA under this subpart H is operating in a manufacturing plant within the State on the date the State's status

as an exclusive IPIA commences, the private organization may provide IPIA services in that plant for 90 days after that date.

[61 FR 10861, Mar. 15, 1996]

§ 3282.353 Submission format.

States and private organizations which wish to act as primary inspection agencies shall submit to the Director, Manufactured Housing Standards Division, Department of Housing and Urban Development, 451 Seventh St. SW., Washington, DC 20410, an application which includes the following:

(a) A cover sheet which shall show the following:

(1) Name and address of the party making the application;

(2) The capacity (DAPIA, IPIA) in which the party wishes to be approved to act;

(3) A list of the key personnel who will perform the various functions required under these regulations;

(4) The number of manufactured home manufacturers and manufacturing plants for which the submitting party proposes to act in each of the capacities for which it wishes to be approved to act;

(5) The estimated total number of manufactured homes produced by those manufacturers and in those plants per year;

(6) The number of years the proposed primary inspection agency has been actively engaged in the enforcement of manufactured home standards; and

(7) A certification by the party applying that it will follow the Federal manufactured home construction and safety standards set out at 24 CFR part 3280 and any interpretations of those standards which may be made by the Secretary.

(b) A detailed schedule of fees to be charged broken down by the services for which they will be charged.

(c) A detailed description of how the submitting party intends to carry out all of the functions for which it wishes to be approved under this subpart, with appropriate cross-references to sections of this subpart, including examples and complete descriptions of all reports, tests, and evaluations which the party would be required to make. Where appropriate, later sections of

this subpart identify particular items which must be included in the submission. The Secretary may request further detailed information, when appropriate.

(d) A party wishing to be approved as a DAPIA shall submit a copy of a manufactured home design that it has approved (or if it has not approved a design, one that it has evaluated and a deviation report showing where the design is not in conformance with the standards) and a copy of a quality assurance manual that it has approved (or if it was not approved a manual, one that it has evaluated and a deviation report showing where the manual is inadequate).

(e) A party wishing to be approved as an IPIA shall submit a copy of a certification report which it has prepared for a manufactured home plant or, if it has not prepared such a report, an evaluation of a manufacturing plant which it has inspected with a description of what changes shall be made before a certification report can be issued. A party that has not previously inspected manufactured homes may nevertheless be accepted on the basis of the qualifications of its personnel and its commitment to perform the required functions.

[41 FR 19852, May 13, 1976, as amended at 61 FR 10861, Mar. 15, 1996]

§ 3282.354 Submittal of false information or refusal to submit information.

The submittal of false information or the refusal to submit information required under this subpart may be sufficient cause for the Secretary to revoke or withhold acceptance.

§ 3282.355 Submission acceptance.

(a) A party whose submission is determined by the Department to be adequate shall be granted provisional acceptance until December 15, 1976, or for a six month period from the date of such determination, whichever is later.

(b) Final acceptance of a party to act as a primary inspection agency will be contingent upon adequate performance during the period of provisional acceptance as determined through monitoring carried out under subpart J and upon satisfactory acceptance under

§ 3282.356

§ 3282.361(e) or § 3282.362(e). Final acceptance shall be withheld if performance is inadequate.

(c) Continued acceptance as a primary inspection agency shall be contingent upon continued adequacy of performance as determined through monitoring carried out under subpart J. If the Secretary determines that a primary inspection agency that has been granted final acceptance is performing inadequately, the Secretary shall suspend the acceptance, and the primary inspection agency shall be entitled to a Formal or Informal Presentation of Views as set out in subpart D of this part.

[41 FR 19852, May 13, 1976, as amended at 51 FR 34468, Sept. 29, 1986; 61 FR 10861, Mar. 15, 1996]

§ 3282.356 Disqualification and re-qualification of primary inspection agencies.

(a) The Secretary, based on monitoring reports or on other reliable information, may determine that a primary inspection agency which has been accepted under this subpart is not adequately carrying out one or more of its required functions. In so determining, the Secretary shall consider the impact of disqualification on manufacturers and other affected parties and shall seek to assure that the manufacturing process is not disrupted unnecessarily. Whenever the Secretary disqualifies a primary inspection agency under this section, the primary inspection agency shall have a right to a Formal or Informal Presentation of Views under subpart D of this part.

(b) Interested persons may petition the Secretary to disqualify a primary inspection agency under the provisions of § 3282.156(b).

(c) A primary inspection agency which has been disqualified under paragraph (a) may resubmit an application under § 3282.353. The submission shall include a full explanation of how problems or inadequacies which resulted in disqualifications have been rectified and how the primary inspection agency shall assure that such problems shall not recur.

(d) When appropriate, the Secretary shall publish in the FEDERAL REGISTER or otherwise make available to the

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public for comment a disqualified PIA's application for requalification, subject to the provisions of § 3282.54.

(e) Both provisional and final acceptance of any IPIA (or DAPIA) automatically expires at the end of any period of one year during which it has not acted as an IPIA (or DAPIA). An IPIA (or DAPIA) has not acted as such unless it has actively performed its services as an IPIA (or DAPIA) for at least one manufacturer by which it has been selected. An IPIA (or DAPIA) whose acceptance has expired pursuant to this section may resubmit an application under § 3282.353 in order to again be qualified as an IPIA (or DAPIA), when it can show a bona fide prospect of performing IPIA (or DAPIA) services.

[41 FR 19852, May 13, 1976, as amended at 45 FR 59311, Sept. 9, 1980; 51 FR 34468, Sept. 29, 1986]

§ 3282.357 Background and experience.

All private organizations shall submit statements of the organizations' experience in the housing industry, including a list of housing products, equipment, and structures for which evaluation, testing and follow-up inspection services have been furnished. They shall also submit statements regarding the length of time these services have been provided by them. In addition, all such submissions shall include a list of other products for which the submitting party provides evaluation, inspection, and listing or labeling services and the standard applied to each product, as well as the length of time it has provided these additional services.

§ 3282.358 Personnel.

(a) Each primary inspection agency shall have qualified personnel capable of carrying out all of the functions for which the primary inspection agency is seeking to be approved or disapproved. Where a State intends to act as the exclusive IPIA in the State, it shall show that it has adequate personnel to so act in all plants in the State.

(b) Each submission shall indicate the total number of personnel employed by the submitting party, the number of personnel available for this

program, and the locations of the activities of the personnel to be used in the program.

(c) Each submission shall include the names and qualifications of the administrator and the supervisor who will be directly responsible for the program, and résumés of their experience.

(d) Each submission shall contain the information set out in paragraphs (d)(1) through (d)(9) of this section. Depending upon the functions (DAPIA or IPIA) to be undertaken by a particular primary inspection agency, some of the categories of personnel listed may not be required. In such cases, the submission should indicate which of the categories of information are not required and explain why they are not needed. The submission should identify which personnel will carry out each of the functions the party plans to perform. The qualifications of the personnel to perform one or more of the functions will be judged in accordance with the requirements of ASTM Standard E-541 except that the requirement for registration as a professional engineer or architect may be waived for personnel whose qualifications by experience or education equal those of a registered engineer or architect. The categories of personnel to be included in the submission are as follows:

(1) The names of engineers practicing structural engineering who will be involved in the evaluation, testing, or followup inspection services, and résumés of their experience.

(2) The names of engineers practicing mechanical engineering who will be involved in the evaluation, testing, or followup, inspection services and résumés of their experience.

(3) The names of engineers practicing electrical engineering who will be involved in the evaluation, testing, or followup inspection services and résumés of their experience.

(4) The names of engineers practicing fire protection engineering who will be involved in the evaluation, testing, or followup inspection services, and résumés of their experience.

(5) The names of all other engineers assigned to this program, the capacity in which they will be employed, and résumés of their experience.

(6) The names of all full-time and part-time consulting architects and engineers, their registration, and résumés of their experience.

(7) The names of inspectors and other technicians along with résumés of experience and a description of the type of work each will perform.

(8) A general outline of the applicant agency's training program for assuring that all inspectors and other technicians are properly trained to do each specific job assigned.

(9) The names and qualifications of individuals serving on advisory panels that assist the applicant agency in making its policies conform with the public interest in the field of public health and safety.

(e) All information required by this section shall be kept current. The Secretary shall be notified of any change in personnel or management or change of ownership or State jurisdiction within 30 days of such change.

§ 3282.359 Conflict of interest.

(a) All submissions by private organizations shall include a statement that the submitting party is independent in that it does not have any actual or potential conflict of interest and is not affiliated with or influenced or controlled by any producer, supplier, or vendor of products in any manner which might affect its capacity to render reports of findings objectively and without bias.

(b) A private organization shall be judged to be free of conflicting affiliation, influence, and control if it demonstrates compliance with all of the following criteria:

(1) It has no managerial affiliation with any producer, supplier, or vendor of products for which it performs PIA services, and is not engaged in the sale or promotion of any such product or material;

(2) The results of its work do not accrue financial benefits to the organization via stock ownership of any producer, supplier or vendor of the products involved;

(3) Its directors and other management personnel and its engineers and inspectors involved in certification activities hold no stock in and receive no

stock option or other benefits, financial, or otherwise, from any producer, supplier, or vendor of the product involved, other than compensation under § 3282.202 of this part;

(4) The employment security status of its personnel is free of influence or control of any producer, supplier, or vendor, and

(5) It does not perform design or quality assurance manual approval services for any manufacturer whose design or manual has been created or prepared in whole or in part by engineers of its organization or engineers of any affiliated organization.

(c) All submissions by States shall include a statement that personnel who will be in any way involved in carrying out the State plan or PIA function are free of any conflict of interest except that with respect to members of councils, committees or similar bodies providing advice to the designated agency are not subject to this requirement.

§ 3282.360 PIA acceptance of product certification programs or listings.

In determining whether products to be included in a manufactured home are acceptable under the standards set out in part 3280 of 24 CFR, all PIAs shall accept all product verification programs, labelings, and listings unless the PIA has reason to believe that a particular certification is not acceptable, in which case, the PIA shall so inform the Secretary and provide the Secretary with full documentation and information on which it bases its belief. Pending a determination by the Secretary, the PIA shall provisionally accept the certification. The Secretary's determination shall be binding on all PIAs.

§ 3282.361 Design Approval Primary Inspection Agency (DAPIA).

(a) *General.* (1) The DAPIA selected by a manufacturer under § 3282.203 shall be responsible for evaluating all manufactured home designs submitted to it by the manufacturer and for assuring that they conform to the standards. It shall also be responsible for evaluating all quality control programs submitted to it by the manufacturer by reviewing the quality assurance manuals in

which the programs are set out to assure that the manuals reflect programs which are compatible with the designs to be followed and which commit the manufacturer to make adequate inspections and tests of every part of every manufactured home produced.

(2) A design or quality assurance manual approved by a DAPIA shall be accepted by all IPIAs acting under § 3282.362 who deal with the design, quality assurance manual, or manufactured homes built to them, and by all other parties, as, respectively, being in conformance with the Federal standards or as providing for adequate quality control to assure conformance. However, each design and quality assurance manual is subject to review and verification by the Secretary or the Secretary's agent at any time.

(b) *Designs.* (1) In evaluating designs for compliance with the standards, the DAPIA will not allow any deviations from accepted engineering practice standards for design calculations or any deviations from accepted test standards, except that the DAPIA, for good cause, may request the Secretary to accept innovations which are not yet accepted practices. Acceptances by the Secretary shall be published in the form of interpretative bulletins, where appropriate.

(2) The DAPIA shall require the manufacturer to submit floor plans and specific information for each manufactured home design or variation which the DAPIA is to evaluate. It shall also require the submission of drawings, specifications, calculations, and test records of the structural, electrical and mechanical systems of each such manufactured home design or variation. The manufacturer need not supply duplicate information where systems are common to several floor plans. Each DAPIA shall develop and carry out procedures for evaluating original manufactured home designs by requiring manufacturers to submit necessary drawings and calculations and carry out such verifications and calculations as it deems necessary. Where compliance with the standards cannot be determined on the basis of drawings and calculations, the DAPIA shall require any necessary tests to be carried out at

its own facility, at separate testing facilities or at the manufacturer's plant.

(3) *Design deviation report.* After evaluating the manufacturer's design, the DAPIA shall furnish the manufacturer with a design deviation report which specifies in detail, item by item with appropriate citations to the standards, the specific deviations in the manufacturer's design which must be rectified in order to produce manufactured homes which comply with the standards. The design deviation report may acknowledge the possibility of alternative designs, tests, listings, and certifications and state the conditions under which they will be acceptable. The design deviation report shall, to the extent practicable, be complete for each design evaluated in order to avoid repeated rejections and additional costs to the manufacturer.

(4) *Design approval.* The DAPIA shall signify approval of a design by placing its stamp of approval or authorized signature on each drawing and each sheet of test results. The DAPIA shall clearly cross-reference the calculations and test results to applicable drawings. The DAPIA may require the manufacturer to do the cross-referencing if it wishes. It shall indicate on each sheet how any deviations from the standards have been or shall be resolved. Within 5 days after approving a design, the DAPIA shall forward a copy of the design to the manufacturer and the Secretary or the Secretary's agent (prior to the effective date of the standards the latter copy shall go to the Secretary.)

The DAPIA shall maintain a complete up-to-date set of approved designs and design changes approved under paragraph (b)(5) of this section which it can duplicate and copies of which it can furnish to interested parties as needed when disputes arise.

(5) *Design change approval.* The DAPIA shall also be responsible for approving all changes which a manufacturer wishes to make in a design approved by the DAPIA. In reviewing design changes, the DAPIA shall respond as quickly as possible to avoid disruption of the manufacturing process. Within 5 days after approving a design change, the DAPIA shall forward a copy of this change to the manufacturer and the Secretary or the Sec-

retary's agent as set out in paragraph (b)(4) of this section to be included in the design to which the change was made.

(c) *Quality assurance manuals.* (1) In evaluating a quality assurance manual, the DAPIA shall identify any aspects of designs to be manufactured under the manual which require special quality control procedures. The DAPIA shall determine whether the manual under which a particular design is to be manufactured reflects those special procedures, and shall also determine whether the manuals which it evaluates provide for such inspections and testing of each manufactured home so that the manufacturer, by following the manual, can assure that each manufactured home it manufactures will conform to the standards. The manual shall, at a minimum, include the information set out in § 3282.203(c).

(2) *Manual deviation report.* After evaluating a manufacturer's quality assurance manual, the DAPIA shall furnish the manufacturer with a manual deviation report which specifies in detail any changes which a manufacturer must make in order for the quality assurance manual to be acceptable. The manual deviation report shall, to the extent practicable, be complete for each design in order to avoid repeated rejections and additional costs to the manufacturer.

(3) *Manual approval.* The DAPIA shall signify approval of the manufacturer's quality assurance manual by placing its stamp of approval or authorized signature on the cover page of the manual. Within 5 days of approving a quality assurance manual, the DAPIA shall forward a copy of the quality assurance manual to the manufacturer and the Secretary or the Secretary's agent (prior to the effective date of the standards, the latter copy shall go to the Secretary). The DAPIA shall maintain a complete up-to-date set of approved manuals and manual changes approved under paragraph (c)(4) of this section which it can duplicate and copies of which it can furnish to interested parties as needed when disputes arise.

(4) *Manual change approval.* Each change the manufacturer wishes to make in its quality assurance manual

shall be approved by the DAPIA. Within 5 days after approving a manual change, the DAPIA shall forward a copy of the change to the manufacturer and the Secretary or the Secretary's agent as set out in paragraph (c)(3) of this section to be included in the manual to which the change was made.

(d) *Requirements for full acceptance—DAPIA.* (1) Before granting full acceptance to a DAPIA, the Secretary or the Secretary's agent shall review and evaluate at least one complete design and one quality assurance manual which has been approved by the DAPIA. These shall be designs and manuals approved to the Federal standards, and they shall be chosen at random from those approved by the DAPIA during the period of provisional acceptance.

(2) If the Secretary determines that a design or quality assurance manual shows an inadequate level of performance, the Secretary or the Secretary's agent shall carry out further evaluations. If the Secretary finds the level of performance to be unacceptable, the Secretary shall not grant full acceptance. If full acceptance has not been granted by the end of the provisional acceptance period, provisional acceptance shall lapse unless the Secretary determines that the failure to obtain full acceptance resulted from the fact that the Secretary or her agent has not had adequate time in which to complete an evaluation.

[41 FR 19852, May 13, 1976, as amended at 61 FR 10861, Mar. 15, 1996]

§ 3282.362 Production Inspection Primary Inspection Agencies (IPIAs).

(a) *General—(1) IPIA responsibilities.* An IPIA selected by a manufacturer under § 3282.204 to act in a particular manufacturing plant shall be responsible for assuring:

(i) That the plant is capable of following the quality control procedures set out in the quality assurance manual to be followed in that plant;

(ii) That the plant continues to follow the quality assurance manual;

(iii) That any part of any manufactured home that it actually inspects conforms with the design, or where the design is not specific with respect to an

aspect of the standards, to the standards;

(iv) That whenever it finds a manufactured home in production which fails to conform to the design or where the design is not specific, to the standards, the failure to conform is corrected before the manufactured home leaves the manufacturing plant; and

(v) That if a failure to conform to the design, or where the design is not specific, to the standards, is found in one manufactured home, all other homes still in the plant which the IPIA's records or the records of the manufacturer indicate might not conform to the design or to standards are inspected and, if necessary, brought up to the standards before they leave the plant.

(2) No more than one IPIA shall operate in any one manufacturing plant, except that where a manufacturer decides to change from one IPIA to another, the two may operate in the plant simultaneously for a limited period of time to the extent necessary to assure a smooth transition.

(b) *Plant approval.* (1) Each IPIA shall, with respect to each manufacturing plant for which it is responsible, evaluate the quality control procedures being followed by the manufacturer in the plant to determine whether those procedures are consistent with and fulfill the procedures set out in the DAPIA approved quality assurance manual being followed in the plant. As part of this evaluation, and prior to the issuance of any labels to the manufacturer, the IPIA shall make a complete inspection of the manufacture of at least one manufactured home through all of the operations in the manufacturer's plant. The purpose of this initial factory inspection is to determine whether the manufacturer is capable of producing manufactured homes in conformance with the approved design and, to the extent the design is not specific with respect to an aspect of the standards, with the standards and to determine whether the manufacturer's quality control procedures as set out in the quality assurance manual, plant equipment, and personnel, will assure that such conformance continues. This inspection should be made by one or

more qualified engineers who have reviewed the approved design and by an inspector who has been carefully briefed by the engineers on the restrictive aspects of the design. The manufactured home shall be inspected to the approved design for the home except that where the design is not specific with respect to any aspect of the standards, the inspection shall be to the standards as to that aspect of the manufactured home. If the first manufactured home inspected fails to conform to the design or, with respect to any aspect of the standards not specifically covered by the design, to the standards, additional units shall be similarly inspected until the IPIA is satisfied that the manufacturer is conforming to the approved design, or where the design is not specific with respect to any aspect of the standards, to the standards and quality assurance manual.

(2) *Certification report.* If, on the basis of the initial comprehensive factory inspection required by paragraph (b)(1) of this section, the IPIA determines that the manufacturer is performing adequately, the IPIA shall prepare and forward to the manufacturer, to HUD, and to HUD's agent a certification report as described in this paragraph (b)(2) of this section. The issuance of the certification report is a prerequisite to the commencement of production surveillance under paragraph (c) of this section in the plant for which the report is issued. At the time the certification report is issued, the IPIA may provide the manufacturer with a two to four week supply of labels to be applied to manufactured homes produced in the plant. The IPIA shall maintain a copy of each certification report which it issues.

(3) The certification report shall include:

(i) The name of the DAPIA which approved the manufacturer's design and quality assurance manual and the dates of those approvals,

(ii) The names and titles of the IPIA engineers and inspectors who performed the initial comprehensive inspection,

(iii) A full report of inspections made, serial numbers inspected, any failures to comply which were ob-

served, corrective actions taken, and dates of inspections, and

(iv) A certification that at least one manufactured home has been completely inspected in all phases of its production in the plant, that the manufacturer is performing in conformance with the approved designs and quality assurance manual and, to the extent the design is not specific with respect to any aspects of the standards, with the standards, and the IPIA is satisfied that the manufacturer can produce manufactured homes in conformance with the designs, and where the designs are not specific, with the standards on a continuing basis.

(4) *Inadequate manufacturer performance.* Where an IPIA determines that the performance of a manufacturer is not yet adequate to justify the issuance of a certification report and labels to the manufacturer, the IPIA may label manufactured homes itself by using such of its personnel as it deems necessary to perform complete inspections of all phases of production of each manufactured home being produced and labeling only those determined after any necessary corrections to be in conformance with the design and, as appropriate, with the standards. This procedure shall continue until the IPIA determines that the manufacturer's performance is adequate to justify the issuance of a certification report.

(c) *Production surveillance.* (1) After it has issued a certification report under paragraph (b) of this section, the IPIA shall carry out ongoing surveillance of the manufacturing process in the plant. The IPIA shall be responsible for conducting representative inspections to assure that the manufacturer is performing its quality control program pursuant to and consistent with its approved quality assurance manual and to assure that whatever part of a manufactured home is actually inspected by the IPIA is fully in conformance with the design and, as appropriate under paragraph (a)(1)(iii) of this section, with the standards before a label is issued for or placed on that manufactured home. The surveillance visits shall commence no later than that date on which the IPIA determines they must commence so that the IPIA can

assure that every manufactured home to be produced after the effective date of the standards to which a label provided for in paragraph (c)(2) of this section is affixed, is inspected in at least one stage of its production. The frequency of subsequent visits to the plant shall continue to be such that every manufactured home is inspected at some stage in its production. In the course of each visit, the IPIA shall make a complete inspection of every phase of production and of every visible part of every manufactured home which is at each stage of production. The inspection shall be made to the approved design except where the design is not specific with respect to an aspect of the standards, in which case the inspection of that aspect of the manufactured home shall be made to the standards. The IPIA shall assure that no label is placed on any manufactured home which it finds fails to conform with the approved design or, as appropriate, the standards in the course of these inspections and shall assure that no labels are placed on other manufactured homes still in the plant which may also not conform until those homes are inspected and if necessary corrected to the design or the standards. If an IPIA finds a manufactured home that fails to conform to the design, or as appropriate under paragraph (a)(1)(iii) of this section, to the standards, the IPIA may, in addition to withholding the label for the unit, proceed to red tag the home until the failure to conform is corrected. Only the IPIA is authorized to remove a red tag. When manufactured homes repeatedly fail to conform to the design, or as appropriate under paragraph (a)(1)(iii) of this section, to the standards in the same assembly station or when there is evidence that the manufacturer is ignoring or not performing under its approved quality assurance manual, the IPIA shall increase the frequency of these inspections until it is satisfied that the manufacturer is performing to its approved quality assurance manual. Failure to perform to the approved manual justifies withholding labels until an adequate level of performance is attained. As part of its function of assuring quality control, the IPIA shall inspect materials in storage and test

equipment used by the manufacturer at least once a month, and more frequently if unacceptable conditions are observed. With the prior approval of the Secretary, an IPIA may decrease the frequency of any inspections.

(2) *Labeling*—(i) *Labels required.* (A) The IPIA shall continuously provide the manufacturer with a two- to four-week supply (at the convenience of the IPIA and the manufacturer) of the labels described in this subsection, except that no labels shall be issued for use when the IPIA is not present if the IPIA is not satisfied that the manufacturer can and is producing manufactured homes which conform to the design and, as appropriate, to the standards. Where necessary, the IPIA shall reclaim labels already given to the manufacturer. In no event shall the IPIA allow a label to be affixed to a manufactured home if the IPIA believes that the manufactured home fails to conform to the design, or, where the design is not specific with respect to an aspect of the standards, to the standards. Labels for such manufactured homes shall be provided only after the failure to conform has been remedied, or after the Secretary has determined that there is no failure to conform.

(B) A permanent label shall be affixed to each transportable section of each manufactured home for sale or lease to a purchaser or lessor in the United States in such a manner that removal will damage the label so that it cannot be reused. This label is provided by the IPIA and is separate and distinct from the data plate that the manufacturer is required to provide under § 3280.5.

(C) The label shall read as follows:

“As evidenced by this label No. ABC 000 001, the manufacturer certifies to the best of the manufacturer’s knowledge and belief that this manufactured home has been inspected in accordance with the requirements of the Department of Housing and Urban Development and is constructed in conformance with the Federal Manufactured Home Construction and Safety Standards in effect on the date of manufacture. See data plate.”

(D) The label shall be 2 in. by 4 in. in size and shall be permanently attached to the manufactured home by means of 4 blind rivets, drive screws, or other

means that render it difficult to remove without defacing it. It shall be etched on .032 in. thick aluminum plate. The label number shall be etched or stamped with a 3 letter IPIA designation which the Secretary shall assign and a 6 digit number which the label supplier shall stamp sequentially on labels supplied to each IPIA.

(E) The label shall be located at the tail-light end of each transportable section of the manufactured home approximately one foot up from the floor and one foot in from the road side, or as near that location on a permanent part of the exterior of the manufactured home as practicable. The roadside is the right side of the manufactured home when one views the manufactured home from the tow bar end of the manufactured home. It shall be applied to the manufactured home unit in the manufacturing plant by the manufacturer or the IPIA, as appropriate.

(F) The label shall be provided to the manufacturer only by the IPIA. The IPIA shall provide the labels in sequentially numbered series. The IPIA may obtain labels from the Secretary or the Secretary's agent, or where the IPIA obtains the prior approval of the Secretary, from a label manufacturer. However, if the IPIA obtains labels directly from a label supplier, those labels must be sequentially numbered without any duplication of label numbers.

(G) Whenever the IPIA determines that a manufactured home which has been labeled, but which has not yet been released by the manufacturer may not conform to the design or, as appropriate under paragraph (a)(1)(iii) of this section, to the standards, the IPIA by itself or through an agent shall red tag the manufactured home. Where the IPIA determines that a manufactured home which has been labeled and released by the manufacturer, but not yet sold to a purchaser (as described in § 3282.252(b)) may not conform, the IPIA may, in its discretion, proceed to red tag the manufactured home. Only the IPIA is authorized to remove red tags, though it may do so through agents which it deems qualified to determine that the failure to conform has been corrected. Red tags may be removed when the IPIA is satisfied, through in-

spections, assurances from the manufacturer, or otherwise, that the affected homes conform.

(H) Labels that are damaged, destroyed, or otherwise made illegible or removed shall be replaced by the IPIA, after determination that the manufactured home is in compliance with the standards, by a new label of a different serial number. The IPIA's labeling record shall be permanently marked with the number of the replacement label and a corresponding record of the replacement label.

(ii) *Label control.* The labels used in each plant shall be under the direct control of the IPIA acting in that plant. Only the IPIA shall provide the labels to the manufacturer. The IPIA shall assure that the manufacturer does not use any other label to indicate conformance to the standards.

(A) The IPIA shall be responsible for obtaining labels. Labels shall be obtained from HUD or its agent, or with the approval of the Secretary, from a label manufacturer. The labels shall meet the requirements of this section. Where the IPIA obtains labels directly from a label manufacturer, the IPIA shall be responsible for assuring that the label manufacturer does not provide labels directly to the manufacturer of manufactured homes. If the label manufacturer fails to supply correct labels or allows labels to be released to parties other than the IPIA, the IPIA shall cease dealing with the label manufacturer.

(B) The labels shall be shipped to and stored by the IPIA's at a location which permits ready access to manufacturing plants under its surveillance. The labels shall be stored under strict security and inventory control. They shall be released only by the IPIA to the manufacturer under these regulations.

(C) The IPIA shall be able to account for all labels which it has obtained through the date on which the manufactured home leaves the manufacturing plant, and it shall be able to identify the serial number of the manufactured home to which each particular label is affixed.

(D) The IPIA shall keep in its central record office a list of the serial numbers of labels issued from the label producer to the IPIA and by the IPIA to the manufacturing plant.

(E) Failure to maintain control of labels through the date the manufactured home leaves the manufacturing plant and failure to keep adequate records of which label is on which manufactured home shall render the IPIA subject to disqualification under § 3282.356.

(3) *Data plate.* (i) The IPIA shall assure that each manufactured home produced in each manufacturing plant under its surveillance is supplied with a data plate which meets the requirements of this section and of § 3280.5 of chapter XX of 24 CFR. The data plate shall be furnished by the manufacturer and affixed inside the manufactured home on or near the main electrical distribution panel. The data plate shall contain the following information:

(A) The name and address of the manufacturing plant in which the manufactured home was manufactured,

(B) The serial number and model designation of the unit and the date the unit was manufactured,

(C) The statement “This manufactured home is designed to comply with the Federal Manufactured Home Construction and Safety Standards in force at the time of manufacture.”,

(D) A list of major factory-installed equipment including the manufacturer’s name and the model designation of each appliance,

(E) Reference to the roof load zone and wind load zone for which the home is designed and duplicates of the maps as set forth in § 3280.305. This information may be combined with the heating/cooling certificate and insulation zone map required by §§ 3280.510 and 3280.511. The Wind Zone Map on the Data Plate shall also contain the statement:

This home has not been designed for the higher wind pressures and anchoring provisions required for ocean/coastal areas and should not be located within 1500’ of the coastline in Wind Zones II and III, unless the home and its anchoring and foundation system have been designed for the increased requirements specified for Exposure D in ANSI/ASCE 7-88.

(F) The statement:

This home has ___ has not ___ (appropriate blank to be checked by manufacturer) been equipped with storm shutters or other protective coverings for windows and exterior door openings. For homes designed to be located in Wind Zones II and III, which have not been provided with shutters or equivalent covering devices, it is strongly recommended that the home be made ready to be equipped with these devices in accordance with the method recommended in the manufacturers printed instructions.

(G) The statement: “Design Approval by”, followed by the name of the agency that approved the design.

(ii) A copy of the data plate shall be furnished to the IPIA, and the IPIA shall keep a permanent record of the data plate as part of its labeling record so that the information is available during the life of the manufactured home in case the data plate in the manufactured home is defaced or destroyed.

(d) *Permanent records.* The IPIA shall maintain the following records as appropriate:

(1) Records of all labels issued, applied, removed, and replaced by label number, manufactured home serial number, manufactured home type, manufacturer’s name, dealer destination, and copies of corresponding data plates.

(2) Records of all manufactured homes which are red tagged, and the status of each home.

(3) Records of all inspections made at each manufacturing plant on each manufactured home serial number, each failure to conform found, and the action taken in each case.

(4) Records of all inspections made at other locations of manufactured homes identified by manufacturer and serial number, all manufactured homes believed to contain the same failure to conform, and the action taken in each case.

All records shall specify the precise section of the standard which is in question and contain a clear and concise explanation of the process by which the IPIA reached any conclusions. All records shall be traceable to specific manufactured home serial numbers and through the manufacturer’s records to dealers and purchasers.

(e) *Requirements for full acceptance— IPIA.* (1) Before granting full acceptance to an IPIA, the Secretary or the Secretary's agent shall review and evaluate at least one certification report which has been prepared by the IPIA during the period of provisional acceptance. The Secretary or the Secretary's agent shall also review in depth the IPIA's administrative capabilities and otherwise review the IPIA's performance of its responsibilities under these regulations.

(2) Where the Secretary determines on the basis of these reviews that an IPIA is not meeting an adequate level of performance, the Secretary or the Secretary's agent shall carry out further evaluations. If the Secretary finds the level of performance to be unacceptable, the Secretary shall not grant full acceptance. If full acceptance has not been granted by the end of the provisional acceptance period, provisional acceptance shall lapse unless the Secretary determines that the failure to obtain full acceptance resulted from the fact that the Secretary or the Secretary's agent has not had adequate time in which to complete an evaluation.

[41 FR 19852, May 13, 1976, as amended at 42 FR 2580, Jan. 12, 1977; 42 FR 35157, July 8, 1977; 59 FR 2474, Jan. 14, 1994; 61 FR 10861, Mar. 15, 1996]

§ 3282.363 Right of entry and inspection.

Each primary inspection agency shall secure from each manufacturer and manufacturing plant under its surveillance an agreement that the Secretary, the State Administrative Agency and the primary inspection agency have the right to inspect the plant and its manufactured home inspection, labeling, and delivery records, and any of its manufactured homes in the hands of dealers or distributors at any reasonable time.

§ 3282.364 Inspection responsibilities and coordination.

All primary inspection agencies shall be responsible for acting as necessary under their contractual commitment with the manufacturer to determine whether alleged failures to conform to the standards may exist in manufac-

tured homes produced under their surveillance and to determine the source of the problems. The DAPIA may be required to examine the designs in question or the quality assurance manual under which the manufactured homes were produced. The IPIA may be required to reexamine the quality control procedures which it has approved to determine if they conform to the quality assurance manual, and the IPIA shall have primary responsibility for inspecting actual units produced and, where necessary, for inspecting units released by the manufacturer. All primary inspection agencies acting with respect to particular manufacturer or plant shall act in close coordination so that all necessary functions are performed effectively and efficiently.

§ 3282.365 Forwarding monitoring fee.

The IPIA shall, whenever it provides labels to a manufacturer, obtain from the manufacturer the monitoring fee to be forwarded to the Secretary or the Secretary's agent as set out in § 3282.210. If a manufacturer fails to provide the monitoring fee as required by § 3282.210 to be forwarded by the IPIA under this section, the IPIA shall immediately inform the Secretary; or the Secretary's Agent.

§ 3282.366 Notification and correction campaign responsibilities.

(a) Both IPIAs and DAPIAs are responsible for assisting the Secretary or an SAA in identifying the class of manufactured homes that may have been affected where the Secretary or an SAA makes or is contemplating making a preliminary determination of imminent safety hazard, serious defect, defect, or noncompliance under § 3282.407 with respect to manufactured homes for which the IPIA or DAPIA provided either plant inspection or design approval services.

(b) The IPIA in each manufacturing plant is responsible for reviewing manufacturer determinations of the class of manufactured homes affected when the manufacturer is acting under § 3282.404. The IPIA shall concur in the method used to determine the class of potentially affected manufactured homes or shall state why it finds the

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method to be inappropriate, inadequate or incorrect.

[42 FR 2580, Jan. 12, 1977]

Subpart I—Consumer Complaint Handling and Remedial Actions

SOURCE: 42 FR 2580, Jan. 12, 1977, unless otherwise noted.

§ 3282.401 Purpose and scope.

(a) The purpose of this subpart is to establish a system under which the protections of the Act are provided with a minimum of formality and delay, but in which the rights of all parties are protected.

(b) This subpart sets out the procedures to be followed by manufacturers, State Administrative Agencies, primary inspection agencies, and the Secretary to assure that manufacturers provide notification and correction with respect to their manufactured homes as required by the Act. Notification and correction may be required to be provided with respect to manufactured homes that have been sold or otherwise released by the manufacturer to another party when the manufacturer, an SAA or the Secretary determines that an imminent safety hazard, serious defect, defect, or non-compliance may exist in those manufactured homes as set out herein.

(c) This subpart sets out the rights of dealers under section 613 of the Act, 42 U.S.C. 5412, to obtain remedies from manufacturers in certain circumstances.

§ 3282.402 General principles.

(a) Nothing in this subpart or in these regulations shall limit the rights of the purchaser under any contract or applicable law.

(b) The liability of manufactured home manufacturers to provide remedial actions under this subpart is limited by the principle that manufacturers are not responsible for failures that occur in manufactured homes or components solely as the result of normal year and aging, gross and unforeseeable consumer abuse, or unforeseeable neglect of maintenance.

(c) The extent of a manufacturer's responsibility for providing notification

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or correction depends upon the seriousness of problems for which the manufacturer is responsible under this subpart.

(d) When manufacturers act under § 3282.404 of these regulations, they will not be required to classify the problem that triggered their action as a non-compliance, defect, serious defect, or imminent safety hazard.

(e) It is the policy of these regulations that all consumer complaints or other information indicating the possible existence of an imminent safety hazard, serious defect, defect, or non-compliance should be referred to the manufacturer of the potentially affected manufactured homes as early as possible so that the manufacturer can begin to timely respond to the consumer and take any necessary remedial actions.

§ 3282.403 Consumer complaint and information referral.

When a consumer complaint or other information indicating the possible existence of a noncompliance, defect, serious defect, or imminent safety hazard is received by a State Administrative Agency or the Secretary, the SAA or the Secretary shall forward the complaint or other information to the manufacturer of the manufactured home in question. The SAA or the Secretary shall, when it appears from the complaint or other information that more than one manufactured home may be involved, simultaneously send a copy of the complaint or other information to the SAA of the State where the manufactured home was manufactured or to the Secretary if there is no such SAA, and when it appears that an imminent safety hazard or serious defect may be involved, simultaneously send a copy to the Secretary.

§ 3282.404 Notification pursuant to manufacturer's determination.

(a) The manufacturer shall provide notification as set out in this subpart with respect to all manufactured homes produced by the manufacturer in which there exists or may exist an imminent safety hazard or serious defect. The manufacturer shall provide

such notification with respect to manufactured homes produced by the manufacturer in which a defect exists or may exist if the manufacturer has information indicating that the defect may exist in a class of manufactured homes that is identifiable because the cause of the defect or defects actually known to the manufacturer is such that the same defect would probably have been systematically introduced into more than one manufactured home during the course of production. This information may include, but is not limited to, complaints that can be traced to the same cause, defects known to exist in supplies of components or parts, information related to the performance of a particular employee and information indicating a failure to follow quality control procedures with respect to a particular aspect of the manufactured home. A manufacturer is required to provide notification with respect to a noncompliance only after the issuance of a final determination under § 3282.407.

(b) Whenever the manufacturer receives from any source information that may indicate the existence of a problem in a manufactured home for which the manufacturer is responsible for providing notification under paragraph (a) of this section, the manufacturer shall, as soon as possible, but not later than 20 days after receipt of the information, carry out any necessary investigations and inspections to determine and shall determine whether the manufacturer is responsible for providing notification under paragraph (a) of this section. The manufacturer shall maintain complete records of all such information and determinations in a form that will allow the Secretary or an SAA readily to discern who made the determination with respect to a particular piece of information, what the determination was, and the basis for the determination. Such records shall be kept for a minimum of five years from the date the manufacturer received the information. Consumer complaints or other information indicating the possible existence of non-compliances or defects received prior to the effective date of this section shall, for purposes of this subpart, be

deemed to have been received on the date this section became effective.

(c) If a manufacturer determines under paragraph (b) of this section that the manufacturer is responsible for providing notification under paragraph (a) of this section, the manufacturer shall prepare a plan for notification as set out in § 3282.409. Where the manufacturer is required to correct under § 3282.406, the manufacturer shall include in the plan provision for correction of affected manufactured homes. The manufacturer shall, as soon as possible, but not later than 20 days after making the determination, submit the plan to one of the following, as appropriate:

(1) Where the manufactured homes covered by the plan were all manufactured in one State, to the SAA of the State of manufacture;

(2) Where the manufactured homes were manufactured in more than one State, to the Secretary; or

(3) Where there is no appropriate SAA under paragraph (c)(1) of this section, to the Secretary.

However, Where only one manufactured home is involved, the manufacturer need not submit the plan if the manufacturer corrects the manufactured home within the 20 day period. The manufacturer shall maintain, in the plant where the manufactured home was manufactured, a complete record of the correction. The record shall describe briefly the facts of the case and state what corrective actions were taken, and it shall be maintained in a separate file in a form that will allow the Secretary or an SAA to review all such corrections.

(d) Upon approval of the plan with any necessary changes, the manufacturer shall carry out the approved plan within the time limits stated in it.

(e) In any case, the manufacturer may act prior to obtaining approval of the plan. However, such action is subject to review and disapproval by the SAA of the State where the manufactured home is located, the SAA of the State where the manufactured home was manufactured, or the Secretary, except to the extent that agreement to the correction is obtained as described in this paragraph. To be assured that the corrective action will be accepted,

the manufacturer may obtain the agreement of either SAA or the Secretary that the corrective action is adequate before the correction is made regardless of whether a plan has been submitted under paragraph (c) of this section. If such an agreement is obtained, the correction shall be accepted as adequate by all SAAs and the Secretary if the correction is made as agreed to and any imminent safety hazard or serious defect is eliminated.

(f) If the manufacturer wishes to obtain a waiver of the formal plan approval and notification requirements that would result from a determination under paragraph (b) of this section, the manufacturer may act under this paragraph. The plan approval and notification requirements shall be waived by either the SAA or the Secretary that would otherwise review the plan under paragraph (c) of this section if:

(1) The manufacturer, before the expiration of the time period determined under paragraph (c) of this section, shows to the satisfaction of the SAA or the Secretary, through such documentation as the SAA or the Secretary may require, that:

(i) The manufacturer has identified the class of possibly affected manufactured homes in accordance with § 3282.409.

(ii) The manufacturer will correct, at the manufacturer's expense, all affected manufactured homes in the class within 60 days of being informed that the request for waiver has been accepted; and

(iii) The proposed repairs are adequate to remove the failure to conform or imminent safety hazard that gave rise to the determination under paragraph (b) of this section; and

(2) The manufacturer corrects all affected manufactured homes within 60 days of being informed that the request for waiver has been accepted. The formal plan and notification requirements are waived pending final resolution of a waiver request under this paragraph (f) as of the date of such a request. If a waiver request is not accepted, the plan called for by paragraph (c) of this section shall be submitted within 5 days after the manufacturer is notified that the request was not accepted.

§ 3282.405 SAA responsibilities.

(a) As set out at § 3282.302(b)(5), each SAA is responsible for overseeing the handling of consumer complaints by manufacturers within the state. As part of that responsibility, the SAA is required to monitor manufacturer compliance with this subpart, and particularly with § 3282.404. This monitoring will be done primarily by periodically checking the records that manufacturers are required to keep under § 3282.404(b).

(b) If the SAA acting under paragraph (a) finds that a manufacturer has failed to comply with § 3282.404, or if the SAA finds that the manufacturer has decided not to act under § 3282.404(c) where the SAA believes the manufacturer is required to act, or if the manufacturer failed to fulfill the requirements of § 3282.404(f) after requesting a waiver under that paragraph, the SAA shall make such preliminary determinations as it deems appropriate under § 3282.407(b), except that if the affected manufactured homes were manufactured in more than one state or if it appears that the appropriate preliminary determination would be an imminent safety hazard or serious defect, the SAA shall refer the matter to the Secretary.

(c) Where an SAA that is reviewing a plan under § 3282.404(c) finds that the manufacturer is not acting reasonably in refusing to accept changes to a proposed plan, the SAA shall make such preliminary determinations as may be appropriate under § 3282.407, except that where it appears that it would be appropriate to make a preliminary determination of imminent safety hazard or serious defect, the SAA shall refer the matter to the Secretary.

§ 3282.406 Required manufacturer correction.

A manufacturer required to furnish notification under § 3282.404 or § 3282.407 shall correct, at its expense, any imminent safety hazard or serious defect that can be related to an error in design or assembly of the manufactured home by the manufacturer, including an error in design or assembly of any component or system incorporated in the manufactured home by the manufacturer.

§ 3282.407 Notification and correction pursuant to administrative determination.

(a) *Preliminary determinations.* (1) Whenever the Secretary has information indicating the possible existence of an imminent safety hazard or serious defect in a manufactured home, the Secretary may issue a preliminary determination to that effect to the manufacturer.

(2) Whenever the information referred to in paragraph (a)(1) of this section indicates that the manufacturer is required to correct the imminent safety hazard or serious defect under § 3282.406, the Secretary may issue a preliminary determination to that effect to the manufacturer.

(3) Whenever an SAA has information indicating that a defect or noncompliance may exist in a class of manufactured homes that is identifiable because the cause of the defect or noncompliance is such that the same defect or noncompliance would probably have been systematically introduced into more than one manufactured home during the course of production, and all manufactured homes in the class appear to have been manufactured in that State, the SAA may issue a preliminary determination of defect or noncompliance to the manufacturer. Information on which an SAA may base a conclusion that an appropriate class of manufactured homes exists may include, but is not limited to, complaints that can be traced to the same cause, defects known to exist in supplies of components or parts, information related to the performance of a particular employee, and information indicating a failure to follow quality control procedures with respect to a particular aspect of the manufactured home. If, during the course of these proceedings, evidence arises that indicates that manufactured homes in the same identifiable class were manufactured in more than one state, the SAA shall refer the matter to the Secretary. The Secretary may make a preliminary determination of noncompliance or defect where there is evidence that a noncompliance or defect may exist.

(b) *Notice and request for presentation of views and evidence.* (1) Notice of the preliminary determination shall be

sent by certified mail and shall include:

(i) The factual basis for the determination and

(ii) The identifying criteria of the manufactured homes known to be affected and those believed to be in the class of possibly affected manufactured homes.

(2) The notice shall inform the manufacturer that the preliminary determination shall become final unless the manufacturer requests a hearing or presentation of views under subpart D of this part within 15 days of receipt of a Notice of Preliminary Determination of serious defect, defect, or noncompliance, or within 5 days of receipt of a Notice of Preliminary Determination of imminent safety hazard.

(3) Promptly upon receipt of a manufacturer's request, a Formal or an Informal Presentation of Views shall be held in accordance with § 3282.152.

(4) Parties may propose in writing, at any time, offers of settlement which shall be submitted to and considered by the Secretary or the SAA that issued the Notice of Preliminary Determination. If determined to be appropriate, the party making the offer may be given an opportunity to make an oral presentation in support of such offer. If an offer of settlement is rejected, the party making the offer shall be so notified and the offer shall be deemed withdrawn and shall not constitute a part of the record in the proceeding. Final acceptance by the Secretary or an SAA of any offer to settlement shall automatically terminate any proceedings related thereto.

(c) *Final determinations.* (1) If the manufacturer fails to respond to the notice of preliminary determination within the time period established in paragraph (b)(2) of this section, or if the SAA or the Secretary decides that the views and evidence presented by the manufacturer or others are insufficient to rebut the preliminary determination, the SAA or the Secretary, as appropriate, shall make a final determination that an imminent safety hazard, serious defect, defect, or noncompliance exists. In the event of a final determination that an imminent safety hazard, serious defect, defect or noncompliance exists, the SAA or the

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Secretary shall issue an order directing the manufacturer to furnish notification. If the Secretary makes a final determination that the manufacturer is required to correct, the Secretary shall issue an order directing the manufacturer to provide correction.

(2) *Appeals.* When an SAA has made a final determination that a defect or noncompliance exists, the manufacturer may, within 10 days after receipt of the notice of such final determination, appeal to the Secretary under § 3282.309.

(d) Where a preliminary determination of defect or noncompliance has been issued, the manufacturer may, at any time during the proceedings called for in this section or after the issuance of a Final Determination and Order, request a waiver of the formal notification requirements. The manufacturer may request such a waiver from the SAA that is handling the proceedings, or if the Secretary is handling the proceedings, from the Secretary. When requesting such a waiver, the manufacturer shall certify and provide assurances that:

(1) The manufacturer has identified the class of possibly affected manufactured homes in accordance with § 3282.409;

(2) The manufacturer will correct, at the manufacturer's expense, all affected manufactured homes in the class within a time period specified by the SAA or the Secretary but not later than 60 days after being informed of the acceptance of the request for waiver or issuance of the Final Determination, whichever is later; and

(3) The proposed repairs are adequate to remove the failure to conform or imminent safety hazard that gave rise to the issuance of the Preliminary Determination.

The SAA or the Secretary may grant the request for waiver if the manufacturer agrees under paragraph (b)(4) of this section to an offer of settlement that includes an order that embodies the assurances made by the manufacturer.

[42 FR 2580, Jan. 12, 1977, as amended at 51 FR 34468, Sept. 29, 1986; 51 FR 37568, Oct. 23, 1986]

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§ 3282.408 Reimbursement for prior correction by owner.

A manufacturer that is required to correct under § 3282.406 or that decides to correct and obtain a waiver under § 3282.404(f) or § 3282.407(d) shall provide reimbursement for reasonable cost of correction to any owner of an affected manufactured home who chose to make the correction before the manufacturer did so.

§ 3282.409 Manufacturer's plan for notification and correction.

(a) This section sets out the requirements that shall be met by manufacturers in preparing plans they are required to submit under § 3282.404(c). The underlying requirement is that the plan show how the manufacturer will fulfill its responsibilities with respect to notification and correction that arise under this subpart I.

(b) The plan shall include a copy of the proposed notice that meets the requirements of § 3282.410.

(c) The plan shall identify, by serial number and other appropriate identifying criteria, all manufactured homes with respect to which notification is to be provided. The class of manufactured homes with respect to which notification shall be provided and which shall be covered by the plan is that class of homes that was or is suspected of having been affected by the cause of an imminent safety hazard or failure to conform. The class is identifiable to the extent that the cause of the imminent safety hazard or failure to conform is such that it would probably have been systematically introduced into the manufactured homes in the class during the course of production. In determining the extent of such a class, the manufacturer may rely either upon information that positively identifies the extent of the class or upon information that indicates what manufactured homes were not affected by the same cause, thereby identifying the class by excluding those manufactured homes. Methods that may be used in determining the extent of the class of manufactured homes include, but are not limited to:

(1) Inspection of manufactured homes produced before and after the manufactured homes known to be affected;

(2) Inspection of manufacturer quality control records to determine whether quality control procedures were followed;

(3) Inspection of IPIA records to determine whether the imminent safety hazard or failure to conform was either detected or specifically found not to exist in some manufactured homes;

(4) Inspection of the design of the manufactured home in question to determine whether the imminent safety hazard or failure to conform resulted from the design itself;

(5) Identification of the cause as relating to a particular employee or process that was employed for a known period of time or in producing the manufactured homes manufactured during that time;

(6) Inspection of records relating to components supplied by other parties and known to contain or suspected of containing imminent safety hazards or failures to conform.

The class of manufactured homes identified by these methods may include only manufactured homes actually affected by the imminent safety hazard or failure to conform if the manufacturer can identify the precise manufactured homes. If it is not possible to identify the precise manufactured homes, the class shall include manufactured homes suspected of containing the imminent safety hazard or failure to conform because the evidence shows that they may have been affected.

(d) The plan shall include a statement by the IPIA operating in each plant in which manufactured homes in question were produced. In this statement, the IPIA shall concur in the methods used by the manufacturer to determine the class of potentially affected manufactured homes or state why it believes the methods to have been inappropriate, inadequate, or incorrect.

(e) The plan shall include a deadline for completion of all notifications and corrections.

(f) The plan shall provide for notification to be accomplished:

(1) By certified mail or other more expeditious means to the dealers or distributors of such manufacturer to whom such manufactured home was delivered. Where a serious defect or im-

minent safety hazard is involved, notification shall be sent by certified mail if it is mailed; and

(2) By certified mail to the first purchaser of each manufactured home in the class of manufactured homes set out in the plan under paragraph (c) of this section, and to any subsequent owner to whom any warranty provided by the manufacturer or required by Federal, State or local law on such manufactured home has been transferred, to the extent feasible, except that notification need not be sent to any person known by the manufacturer not to own the manufactured home in question if the manufacturer has a record of a subsequent owner of the manufactured home; and

(3) By certified mail to any other person who is a registered owner of each manufactured home containing the imminent safety hazard, serious defect, defect, or noncompliance and whose name has been ascertained pursuant to § 3282.211.

§ 3282.410 Contents of notice.

Except as otherwise agreed by the Secretary or the SAA reviewing the plan under § 3282.404(c), the notification to be sent by the manufacturer shall include the following:

(a) An opening statement: "This notice is sent to you in accordance with the requirements of the National Manufactured Housing Construction and Safety Standards Act."

(b) Except where the manufacturer is acting under § 3282.404, the following statement, as appropriate: "(Manufacturer's name or the Secretary, or the appropriate SAA)" has determined that:

(1) An imminent safety hazard may exist in (identifying criteria of manufactured home).

(2) A serious defect may exist in (identifying criteria of manufactured home).

(3) A defect may exist in (identifying criteria of manufactured home).

(4) (Identifying criteria of manufactured home) may not comply with an applicable "Federal Home Construction or Safety Standard."

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(c) A clear description of the imminent safety hazard, serious defect, defect, or noncompliance which shall include:

(1) The location of the imminent safety hazard, serious defect, defect, or noncompliance in the manufactured home;

(2) A description of any hazards, malfunctions, deterioration or other consequences which may result from the imminent safety hazard, serious defect, defect, or noncompliance;

(3) A statement of the conditions which may cause such consequences to arise; and

(4) Precautions, if any, that the owner should take to reduce the chance that the consequences will arise before the manufactured home is repaired.

(d) An evaluation of the risk to manufactured home occupants' safety and the durability of the manufactured home reasonably related to such imminent safety hazard, serious defect, defect, or noncompliance, including:

(1) The type of injury which may occur to occupants of the manufactured home; and

(2) Whether there will be any warning that a dangerous occurrence may take place and what that warning would be, and any signs which the owner might see, hear, smell, or feel which might indicate danger or deterioration of the manufactured home as a result of the imminent safety hazard, serious defect, defect, or noncompliance.

(e) If the manufacturer will correct the manufactured home under this subpart or otherwise, a statement that the manufacturer will correct the manufactured home.

(f) A statement in accordance with whichever of the following is appropriate:

(1) Where the manufacturer will correct the manufactured home at no cost to the owner, the statement shall indicate how and when the correction will be done, how long the correction will take, and any other information that may be helpful to the owner.

(2) When the manufacturer does not bear the cost of repair, the notification shall include a detailed description of all parts and materials needed to make the correction, a description of all steps to be followed in making the cor-

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rection including appropriate illustrations, and an estimate of the cost of the purchaser or owner of the correction.

(g) A statement informing the owner that the owner may submit a complaint to the Secretary if the owner believes that:

(1) The notification or the remedy described therein is inadequate; or

(2) The manufacturer has failed or is unable to remedy the problem in accordance with his notification; or

(3) The manufacturer has failed or is unable to remedy within a reasonable time after the owner's first attempt to obtain remedy.

(h) A statement that any actions taken by the manufacturer under the Act in no way limit the rights of the owner or any other person under any contract or other applicable law and that the owner may have further rights under contract or other applicable law.

§ 3282.411 Time for implementation.

(a) The manufacturer shall complete implementation of the plan for correction approved under § 3282.404(d) on or before the deadline established in the plan as required by § 3282.409(e). The deadline shall allow a reasonable amount of time to complete the plan, taking into account the seriousness of the problem, the number of manufactured homes involved, the immediacy of any risk, and the difficulty of completing the action. The seriousness and immediacy of any risk shall be given greater weight than other considerations. If a manufacturer is required to correct an imminent safety hazard or serious defect under § 3282.406, the deadline shall be no later than 60 days after approval of the plan.

(b) The manufacturer shall complete the implementation of any notifications and corrections being carried out under an order of an SAA or the Secretary under § 3282.407(c) on or before the deadline established in the order. In establishing each deadline, an SAA or the Secretary shall allow a reasonable time to complete all notifications and corrections, taking into account the seriousness of the imminent safety hazard, serious defect, defect or noncompliance, the number of manufactured homes involved, the location of

the homes, and the extent of correction required, except that in no case shall the time allowed exceed the following limits:

(1) In the case of a Final Determination of imminent safety hazard, 30 days after the issuance of the Final Determination.

(2) In the case of a Final Determination of serious defect, defect or non-compliance, 60 days after the issuance of the Final Determination.

(c) An SAA that approved a plan or is handling a proceeding or the Secretary may grant an extension of the deadlines included in a plan or order if the manufacturer requests such an extension in writing and shows good cause for the extension, and the SAA or the Secretary is satisfied that the extension is justified in the public interest. When the Secretary grants an extension, the Secretary shall notify the manufacturer and shall publish notice of such extension in the FEDERAL REGISTER. When an SAA grants an extension, the SAA shall notify the manufacturer, and forward to the Secretary a draft notice of the extension to be published in the FEDERAL REGISTER.

§ 3282.412 Completion of remedial actions and report.

(a) Where a manufacturer is required to provide notification under this subpart, the manufacturer shall maintain in its files for five years from the date the notification campaign is completed a copy of the notice sent and a complete list of the people and their addresses. The files referred to in this section shall be organized such that each notification and correction campaign can be readily identified and reviewed by an SAA or the Secretary.

(b) Where a manufacturer is required to provide correction under § 3282.406 or where the manufacturer otherwise corrects under § 3282.404(f) or § 3282.407(d), the manufacturer shall maintain in its files, for five years from the date the correction campaign is completed, one of the following, as appropriate, for each manufactured home involved.

(1) Where the correction is made, a certification by the manufacturer that the repair was made to satisfy completely the standards in effect at the time the manufactured home was man-

ufactured and that any imminent safety hazard has been eliminated, or

(2) Where the owner refuses to allow the manufacturer to repair the home, a certification by the manufacturer that the owner has been informed of the problem which may exist in the manufactured home, that the owner has been informed of any risk to safety or durability of the manufactured home which may result from the problem, and that an attempt has been made to repair the problems only to have the owner refuse the repair.

(c) If any actions taken under this subpart are not adequate under the approved plan or an order of the Secretary or an SAA, the manufacturer may be required to provide additional notifications or corrections to satisfy the plan or order.

(d) If, in the course of making corrections under any of the provisions of this subpart, the manufacturer creates an imminent safety hazard or serious defect, the manufacturer shall correct the imminent safety hazard or serious defect under § 3282.406.

(e) The manufacturer shall, within 30 days after the deadline for completing any notifications and, where required, corrections, under an approved plan or under an order of an SAA or the Secretary, or any corrections required to obtain a waiver under § 3282.404(f) or § 3282.407(d), provide a complete report of the action taken to the SAA or the Secretary that approved the plan under § 3282.404(d), granted the waiver, or issued the order under § 3282.407(c), and to any other SAA or the Secretary that forwarded a relevant complaint or information to the manufacturer under § 3282.403.

§ 3282.413 Replacement or repurchase of manufactured home from purchaser.

(a) Whenever an imminent safety hazard or serious defect which must be corrected by the manufacturer at his expense under § 3282.407 cannot be repaired within 60 days in accordance with section 615(i) of the Act, the Secretary may require:

(1) That the manufactured home be replaced by the manufacturer with a manufactured home substantially equal in size, equipment, and quality,

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and either new or in the same condition the defective manufactured home would have been in at the time of discovery of the imminent safety hazard or serious defect had the imminent safety hazard or serious defect not existed; or

(2) That the manufacturer take possession of the manufactured home and refund the purchase price in full, less a reasonable allowance for depreciation based on actual use if the home has been in the possession of the owner for more than one year. Such depreciation shall be based upon an appraisal system approved by the Secretary, and shall not take into account damage or deterioration resulting from the imminent safety hazard or serious defect.

(b) In determining whether to order replacement or refund by the manufacturer, the Secretary shall consider:

(1) The threat of injury or death to manufactured home occupants;

(2) Any costs and inconvenience to manufactured home owners which will result from the lack of adequate repair within the specified period;

(3) The expense to the manufacturer;

(4) Any obligations imposed on the manufacturer under contract or other applicable law of which the Secretary has knowledge; and

(5) Any other relevant factors which may be brought to the attention of the Secretary.

(c) In those situations where, under contract or other applicable law, the owner has the right of election between replacement and refund, the manufacturer shall inform the owner of such right of election and shall inform the Secretary of the election, if any, by the owner.

(d) This section applies where an attempted correction of an imminent safety hazard or serious defect relieves the safety problem but does not bring the home in conformity to the standards.

(e) Where replacement or refund by the manufacturer is ordered under this section, it shall be carried out within 30 days of the Secretary's order to replace the manufactured home or refund the purchase price unless the Secretary, for good cause shown, grants an extension of time for implementation

of such order and publishes notice of extension in the FEDERAL REGISTER.

§ 3282.414 Manufactured homes in the hands of dealers and distributors.

(a) The manufacturer is responsible for correcting any failures to conform and imminent safety hazards which exist in manufactured homes which have been sold or otherwise released to a distributor or dealer but which have not yet been sold to a purchaser. This responsibility generally does not extend to failures to conform or imminent safety hazards that result solely from transit damage that occurs after the manufactured home leaves the control of the manufacturer, unless such transit damage is reasonably foreseeable by the manufacturer when the home is released by the manufacturer. This section sets out the procedures to be followed by dealers and distributors for handling manufactured homes in such cases. Regardless of whether the manufacturer is responsible for repairing a manufactured home, no dealer or distributor may sell a manufactured home if it contains a failure to conform or an imminent safety hazard.

(b) Whenever a dealer or distributor finds a problem in a manufactured home which the manufacturer is responsible for correcting under paragraph (a) of this section, the dealer or distributor shall contact the manufacturer, provide full information concerning the problem, and request appropriate action by the manufacturer in accord with paragraph (c) of this section. Where the manufacturer agrees to correct, the manufacturer shall maintain a complete record of its actions. Where the manufacturer authorizes the dealer to make the necessary corrections on a reimbursable basis, the dealer or distributor shall maintain a complete record of its actions. Agreement by the manufacturer to correct or to authorize corrections on a reimbursable basis under this paragraph constitutes a determination of the Secretary for purposes of section 613(b) of the Act with respect to judicial review of the amount which the manufacturer agrees to reimburse the dealer or distributor for corrections.

(c) Upon a final determination by the Secretary or a State Administration

Agency under § 3282.407, or upon a determination by a court of competent jurisdiction that a manufactured home fails to conform to the standard or contains an imminent safety hazard after such manufactured home is sold or otherwise released by a manufacturer to a distributor or a dealer and prior to the sale of such manufactured home by such distributor or dealer to a purchaser, the manufacturer shall have the option to either:

(1) Immediately furnish, at the manufacturer's expense, to the purchasing distributor or dealer the required conforming part or parts or equipment for installation by the distributor or dealer on or in such manufactured home, and the manufacturer shall reimburse such distributor or dealer for the reasonable value of such installation plus a reasonable reimbursement of not less than one per centum per month of the manufacturer's or distributor's selling price prorated from the date of receipt by certified mail of notice of non-compliance to the date such manufactured home is brought into compliance with the standards, so long as the distributor or dealer proceeds with reasonable diligence with the installation after the part or component is received; or

(2) Immediately repurchase, at the manufacturer's expense, such manufactured home from such distributor or dealer at the price paid by such distributor or dealer, plus all transportation charges involved and a reasonable reimbursement of not less than one per centum per month of such price paid prorated from the date of receipt by certified mail of notice of the imminent safety hazard, serious defect, defect or noncompliance to the distributor. The value of such reasonable reimbursements as specified in this paragraph shall be fixed by mutual agreement of the parties or by a court in an action brought under section 613(b) of the Act.

(d) This section shall not apply to any manufactured home purchased by a dealer or distributor which has been leased by such dealer or distributor to a tenant for purposes other than resale. In that instance the dealer or distributor has the remedies available to a purchaser under this subpart.

§ 3282.415 Notices, bulletins and other communications.

Each manufacturer shall, at the time of dispatch, furnish to the Secretary a true or representative copy of all notices, bulletins, and other written communications to the dealers or distributors of such manufacturer or purchasers or owners of manufactured homes of such manufacturers regarding any serious defect or imminent safety hazard which may exist in any such manufactured homes produced by such manufacturer. Manufacturers shall keep complete records of all other communications with dealers, owners, and purchasers regarding noncompliances, and defects.

§ 3282.416 Supervision of notification and correction actions.

(a) The IPIA in each manufacturing plant shall be responsible for assuring that notifications are sent to all owners, purchasers, dealers, or distributors of whom the manufacturer has knowledge under § 3282.211 or otherwise as required by these regulations, and the IFIA shall be responsible for assuring that the required corrections are carried out by auditing the certificates required by § 3282.412.

(b) The SAA or Secretary to which the report required by § 3282.412(e) is sent shall be responsible for assuring through oversight that remedial actions described in the report have been carried out as described in the report.

(c) The SAA of the state in which an affected manufactured home is located may inspect that manufactured home to determine whether any required correction is carried out to the approved plan or, if there is no plan, to the standards or other approval obtained by the manufacturer.

Subpart J—Monitoring of Primary Inspection Agencies

§ 3282.451 General.

The actions of all primary inspection agencies accepted under subpart H shall be monitored by the Secretary or the Secretary's agent to determine whether the PIAs are fulfilling their responsibilities under these regulations. This monitoring shall be carried

out primarily through joint monitoring teams made up of personnel supplied by SAAs and by the Secretary or the Secretary's agent. Monitoring parties shall make recommendations to the Secretary with respect to final acceptance of PIAs under §§ 3282.361(e) and 3282.362(e), continued acceptance, and disqualification or requalification under § 3282.356, and with respect to any changes which PIAs should make in their operations in order to continue to be approved. Based on this monitoring, the Secretary shall determine whether PIAs should continue to be approved under these regulations.

§ 3282.452 Participation in monitoring.

(a) *Joint monitoring teams.* (1) The Secretary or the Secretary's agent shall develop and coordinate joint monitoring teams which shall be made up of qualified personnel provided by SAAs and by the Secretary or the Secretary's agent. The Secretary or the Secretary's agent shall determine whether personnel are qualified based on education or experience.

(2) The joint monitoring teams will operate generally on a regional basis. To the extent possible, the teams shall be so scheduled that personnel provided by an SAA will be monitoring operations in manufactured home plants from which manufactured homes are shipped into their State.

(3) Personnel from an SAA shall not participate on joint monitoring teams operating within their State.

(4) States are encouraged but not required to participate on joint monitoring teams.

(b) *State monitoring.* A State may carry out monitoring of IPIA functions at plant facilities within the State if the State is not acting as an IPIA. Where a State wishes to carry out monitoring activities it shall do so in coordination with the Secretary and the Secretary's agent. To the extent that the State is performing adequate monitoring, the frequency of the joint team monitoring may be reduced to one visit per year consistent with the requirements of § 3282.453.

(c) *Review of staff capability.* The monitoring party shall review the capability of the PIA's staff to perform the functions it is required to perform.

(d) *Review of interpretations.* The monitoring party shall review all records of interpretations of the standards made by the PIA to determine whether they are consistent and to determine whether there are any conflicts which should be referred to the Secretary for determination.

(e) *DAPIA.* Monitoring parties shall review on a random basis at least 10 percent of the design and quality assurance manual approvals made by each DAPIA in each year.

(f) *IPIA.* The monitoring parties shall assure that the IPIAs are carrying out all of the functions for which they have been accepted. In particular, they shall assure that the manufacturing process is as stated in the certification reports, that the IPIAs are carrying out the required number of inspections, that inspections are effective, and that the IPIAs are maintaining complete label control as required by § 3282.362. A monitoring team shall monitor the IPIA's office procedures, files, and label control and the monitoring team shall send copies of its report to the Secretary or the Secretary's agent, which shall send copies to all monitoring teams which monitor the operations of the subject IPIA.

(g) *Remedial actions.* The monitoring parties shall review the remedial action records of the manufacturers and of the primary inspection agencies closely to determine whether the primary inspection agencies have been carrying out their responsibilities with respect to remedial actions.

§ 3282.453 Frequency and extent of monitoring.

(a) The actions of all primary inspection agencies shall be monitored at a frequency adequate to assure that they are performing consistently and fulfilling their responsibilities under these regulations. Every aspect of the primary inspection agencies' performance shall be monitored.

(b) Frequency of monitoring. The performance of each primary inspection agency shall be monitored during its period of provisional acceptance by a complete review of its records and, in the case of IPAs, by a complete inspection of the operations of at least one

manufacturing plant which it has approved or in which it is operating. After the initial inspection, the performance of each primary inspection agency shall be monitored four times per year, except that the number of monitoring visits may be decreased to a minimum of one per year if the performance of the primary inspection agency is deemed by the Secretary or the Secretary's agent to be superior, and it may be increased as necessary if performance is suspect. There shall be a minimum of one review per year of the records of each primary inspection agency, and there shall be more reviews as needed.

Subpart K—Departmental Oversight

§ 3282.501 General.

The Secretary shall oversee the performance of SAAs, the Secretary's agent, and primary inspection agencies as follows:

(a) The Secretary shall review SAA reports to ensure that States are taking appropriate actions with regard to the enforcement of the standards and with respect to the functions for which they are approved under these regulations.

(b) The Secretary shall review monitoring reports submitted by the Secretary's agent to determine that it is performing in accordance with the contract between it and the Secretary.

(c) The Secretary shall review monitoring reports to determine whether PIAs are fulfilling their responsibilities under these regulations.

(d) The Secretary shall make random visits for the purpose of overseeing the activities of SAAs and the Secretary's agent.

(e) The Secretary shall take such other actions to oversee the system established by these regulations as it deems appropriate.

(f) All records maintained by all parties acting under these regulations with respect to those actions shall be available to the Secretary, the Secretary's agent, and where appropriate, SAAs and PIAs for review at any reasonable time.

§ 3282.502 Departmental implementation.

To the extent that SAAs or any parties contracting with the Secretary do not perform functions called for under these regulations, those functions shall be carried out by the Secretary with its own personnel or through other appropriate parties.

§ 3282.503 Determinations and hearings.

The Secretary shall make all the determinations and hold such hearings as are required by these regulations, and the Secretary shall resolve all disputes arising under these regulations.

Subpart L—Manufacturer, IPIA and SAA Reports

§ 3282.551 Scope and purpose.

This subpart describes the reports which shall be submitted by manufacturers, PIAs and SAAs as part of the system of enforcement established under these regulations. Additional reports described in subpart I are required when corrective actions are taken under that subpart.

§ 3282.552 Manufacturer reports for joint monitoring fees.

For each month, the manufacturer shall submit to the IPIA in each of its manufacturing plants a report that includes the serial numbers of each manufactured home manufactured at that plant during that preceding month, and the State of first location, after leaving the manufacturing plant, of such manufactured homes. The State of first location for the purpose of this report is the State of the premises of the distributor, dealer or purchaser to whom the manufactured home is first shipped. The report for each month shall be submitted by the tenth day of the following month.

§ 3282.553 IPIA reports.

Each IPIA shall submit by the twentieth day of each month to each SAA, or if no SAA to the Secretary, in each state where it is engaged in the inspection of manufacturing plants, a report of the operations of each manufacturer in that State for the preceding month

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which includes the following information:

- (a) The number of single-wide and double-wide manufactured homes labeled in the preceding month;
- (b) The number of inspection visits made to each manufacturing plant in the preceding month; and
- (c) The number of manufactured homes with a failure to conform to the standards or an imminent safety hazard during the preceding month found in the manufacturing plant.

The manufacturers report for the preceding month described in §3282.552 shall be attached to each such IPIA report as an appendix thereto.

§ 3282.554 SAA reports.

Each SAA shall submit, prior to the last day of each month, to the Secretary a report covering the preceding month which includes:

- (a) The description and status of all presentations of views, hearings and other legal actions during the preceding month; and
- (b) The description of the SAA's oversight activities and findings regarding consumer complaints, notification and correction actions during the preceding month. The IPIA report for the preceding month described in §3282.553, as well as the reports described in §3282.413 and manufacturer reports under §3282.404(d), which were received during the preceding month, shall be attached to each such SAA report as an appendix thereto.

PART 3500—REAL ESTATE SETTLEMENT PROCEDURES ACT

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AUTHORITY: 12 U.S.C. 2601 *et seq.*; 42 U.S.C. 3535(d).

SOURCE: 57 FR 49607, Nov. 2, 1992, unless otherwise noted. Sections 3500.1 through 3500.19 and 3500.21 revised at 61 FR 13233, Mar. 26, 1996.

§ 3500.1 Designation.

This part may be referred to as Regulation X.

§ 3500.2 Definitions.

(a) *Statutory terms.* All terms defined in RESPA (12 U.S.C. 2602) are used in accordance with their statutory meaning unless otherwise defined in paragraph (b) of this section or elsewhere in this part.

(b) *Other terms.* As used in this part: *Application* means the submission of a borrower's financial information in anticipation of a credit decision, whether written or computer-generated, relating to a federally related mortgage loan. If the submission does not state or identify a specific property, the submission is an application for a pre-qualification and not an application for a federally related mortgage loan under this part. The subsequent addition of an identified property to the submission converts the submission to