DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

24 CFR Part 3280

[Docket No. FR–4886–P–01]

RIN 2502–AI12

Manufactured Home Construction and Safety Standards

AGENCY: Office of the Assistant Secretary for Housing—Federal Housing Commissioner, HUD.

ACTION: Proposed rule.

SUMMARY: This proposed rule would amend the Federal Manufactured Home Construction and Safety Standards (the Construction and Safety Standards) by adopting recommendations made to HUD by the Manufactured Housing Consensus Committee (MHCC). The National Manufactured Housing Construction and Safety Standards Act of 1974 (the Act) requires HUD to publish in the **Federal Register** any proposed revised Construction and Safety Standard submitted by the MHCC. The MHCC has prepared and submitted to HUD its first group of recommendations to improve various aspects of the Construction and Safety Standards. HUD has reviewed those proposals and is in agreement with all but a few of the recommendations made by the MHCC. The recommendations on which the MHCC and HUD agree are being published here to provide notice of the proposed revisions and an opportunity for public comment. HUD is also publishing and inviting comment on the MHCC's proposed revisions that HUD did not accept, HUD's reasons for not accepting the proposals, and HUD's recommended modifications to these proposals.

DATES: *Comment Due Date:* January 31, 2005.

ADDRESSES: Interested persons are invited to submit comments regarding this rule to the Regulations Division, Office of General Counsel, Room 10276, Department of Housing and Urban Development, 451 Seventh Street, SW., Washington, DC 20410–0500. Interested persons may also submit comments electronically through either:

- The Federal eRulemaking Portal at: *http://www.regulations.gov;* or
- The HUD electronic Web site at: *http://www.epa.gov/feddocket.* Follow the link entitled View Open HUD Dockets. Commenters should follow the instructions provided on that site to submit comments electronically.

Facsimile (FAX) comments are not acceptable. In all cases, communications must refer to the docket number and title. All comments and communications submitted will be available, without revision, for public inspection and copying between 8 a.m. and 5 p.m. weekdays at the above address. Copies are also available for inspection and downloading at *http://www.epa.gov/feddocket.*

FOR FURTHER INFORMATION CONTACT: William W. Matchneer III, Administrator, Office of Manufactured Housing Programs, Room 9164, Department of Housing and Urban Development, 451 Seventh Street, SW., Washington DC 20410; telephone (202) 708–6401 (this is not a toll free number). Persons with hearing or speech impairments may access this number via TTY by calling the toll free Federal Information Relay Service at 800–877–8389.

SUPPLEMENTARY INFORMATION:

I. Background

The National Manufactured Housing Construction and Safety Standards Act of 1974 (42 U.S.C. 5401–5426) (the Act) authorizes HUD to establish and amend the Federal Manufactured Home Construction and Safety Standards (the Construction and Safety Standards) codified in 24 CFR part 3280. The Act was amended in 2000 by expanding its purposes and creating the Manufactured Housing Consensus Committee (MHCC).

As amended, the purposes of the Act (enumerated at 42 U.S.C. 5401) are ''(1) to protect the quality, durability, safety, and affordability of manufactured homes; (2) to facilitate the availability of affordable manufactured homes and to increase homeownership for all Americans; (3) to provide for the establishment of practical, uniform, and, to the extent possible, performance-based Federal construction standards for manufactured homes; (4) to encourage innovative and cost-effective construction techniques for manufactured homes; (5) to protect residents of manufactured homes with respect to personal injuries and the amount of insurance costs and property damages in manufactured housing; (6) to establish a balanced consensus process for the development, revision, and interpretation of Federal construction and safety standards for manufactured homes and related regulations for the enforcement of such standards; (7) to ensure uniform and effective enforcement of Federal construction and safety standards for manufactured homes; and (8) to ensure that the public interest in, and need for, affordable manufactured housing is duly considered in all determinations relating to the Federal standards and their enforcement.''

In addition, the amended Act generally requires HUD to establish Construction and Safety Standards that are reasonable and practical, meet high standards of protection, and are performance-based and objectively stated. In part to assist HUD, Congress established the MHCC to develop and review amendments to the Construction and Safety Standards. The Act provides specific procedures (42 U.S.C. 5403) for amending the Construction and Safety Standards.

After the passage of amendments to the Act in 2000, HUD, in accordance with the mandate of the Act, issued a request for proposals to interested organizations to be the ''Administrative Organization'' to administer the operation of the MHCC and the Construction and Safety Standards development process. After evaluating all the proposals, HUD selected and entered into a contract with the National Fire Protection Association (NFPA) to be the Administrative Organization. Following NFPA's selection and pursuant to the Act, HUD (assisted by NFPA) appointed the 21 voting members of the MHCC, seven in each of the following categories: Producers, Users, and General Interest and Public Officials, as well as one nonvoting member to represent HUD.

The MHCC held its first meeting in August of 2002 and began work on reviewing recommendations for revisions to the Construction and Safety Standards previously submitted to HUD by the NFPA. These recommendations were developed pursuant to NFPA's own consensus process. The MHCC developed its own priorities from those NFPA recommendations and approved, as part of its consensus standards development process, revisions to the Construction and Safety Standards and submitted them to HUD. HUD has reviewed the proposed revised Construction and Safety Standards recommended by the MHCC and is in agreement with almost all of them. The following is a discussion of the proposed revisions to the Construction and Safety Standards followed by an explanation of the few proposals that HUD is rejecting or modifying.

II. Proposed Changes

The proposed rule would amend the following sections of the Construction and Safety Standards and revise the incorporation by reference of the indicated reference standards.

A. Whole-House Ventilation

The proposed rule would amend § 3280.103(b) by simplifying the requirements for sizing whole-house ventilation systems of manufactured homes. The rule would establish a minimum and maximum capacity for these systems, permit a bath exhaust fan capable of meeting certain requirements to be the whole-house ventilation system, no longer accept passive-only systems, require operating instructions for the system to be included in the consumer manual, and require the operating switch to be identified with a label.

HUD is proposing to establish a maximum capacity limit for the ventilation systems to prevent possible excessive energy consumption. However, HUD is seeking input to determine if a mandated upper limit is needed or if an upper limit on fan capacity could have other unanticipated adverse impacts on furnace fan or other ventilation systems.

The proposed rule would provide for an alternative whole-house system by making it acceptable to utilize the bathroom exhaust fan as the whole-house ventilation system's exhaust, thus eliminating the need for and cost of an additional exhaust fan. It would require quiet and more durable bathroom exhaust fans that would eliminate noisy ventilation systems which are often not operated by occupants as intended, thereby limiting their effectiveness. The proposed rule would also improve the longevity of bathroom exhaust fans when used as whole-house ventilation systems and be expected to reduce service calls and premature failures, while making the systems more acceptable to occupants.

Consumer education regarding the operation and purpose of whole-house ventilation systems is important to ensuring their use by occupants. Accordingly, the proposed rule would also require instructions for the proper operation of the whole-house ventilation system and refer the occupants to a label that identifies the control that operates the system.

No passive system has been shown to provide on-demand whole-house ventilation, except in combination with a mechanical driving force. Passive ventilation without mechanical ventilation relies on stack and wind effects, which are not always present when ventilation is required.

The proposed rule would also provide reasonable positive and negative pressure limits that a system might create inside the home to ensure that the current zone related requirements can be evaluated.

B. Firestopping

The proposed rule amending § 3280.206 would change the term ''Firestopping'' to ''Fireblocking'' to be consistent with current building code terminology and application. The proposed rule would also replace and clarify existing language to better define locations where fireblocking is required. However, HUD did not accept a portion of the MHCC proposed revised Construction and Safety Standard that would permit mineral wool or loose fill insulation to be considered an acceptable fireblocking material or allow insulating materials to protect penetrations around openings in furnace or water heater compartments. (See discussion of ''Rejected or Modified Construction and Safety Standards.'')

C. Body and Frame Requirements

The proposed rule would streamline the process for implementing alternative testing procedures by amending § 3280.303(g) to eliminate the requirement that a manufacturer submit alternative testing procedures to HUD except, as discussed below, for one-piece metal roofing. This is based on the following considerations: (1) Manufacturers and their consultants generally are qualified and capable of creating alternative test procedures, (2) that all such procedures are reviewed and approved by the manufacturer's Design Approval Primary Inspection Agency (DAPIA) prior to acceptance and (3) that once approved by the DAPIA these procedures would also be subject to review by HUD. HUD is seeking comments on whether the final approval of alternate test methods should be solely delegated to DAPIAs as would be permitted by this proposal or if DAPIAs should only be allowed to provisionally approve the test method subject to HUD's approval, if the proposal should include provisions for rejection of alternative tests by HUD upon subsequent review of the approval by the DAPIA, and whether this practice could have an adverse effect on enforcing the Construction and Safety Standards.

HUD is modifying an MHCC proposal that would amend § 3280.305(c)(1)(ii) by adding a footnote to the table in (B) to permit the use of certain one-piece metal roofing without structural sheathing in the high wind area zones II and III. (See discussion of Rejected or Modified Construction and Safety Standards.)

The proposed revised Construction and Safety Standards would amend § 3280.305(c)(3)(i) by adding paragraphs (A), (B) and (C) by clarifying where middle and north zone roof load requirements would be applicable. These revisions would designate counties in certain states within the south or middle roof load zones where higher middle or north zone roof loads would be required. The current roof load zone map does not clearly delineate the borders between zones by using recognized geographic boundaries such as counties.

The proposed rule would amend § 3280.305(c)(3) by incorporating a new paragraph (iv) to add a roof load requirement for skylights to meet the roof load requirements of the zone for which it is designed. The Construction and Safety Standards currently contain no unique roof load requirements for skylights. The proposed new section would require that skylights be *tested* and listed to comply with the requirements of the American Architectural Manufacturers Association's standard AAMA 1600/I.S.7.

The proposed rule would amend § 3280.305(e) to clarify the required performance of fasteners and the connecting mechanisms for joining the major structural elements of manufactured homes and would specify a continuous load path for imposed forces to the homes foundation/anchorage system. The proposed rule would also clarify the application of the requirements to ensure that number, type of fasteners and materials used be capable of transferring all forces between elements.

The proposed rule would amend § 3280.305(e)(2) by reducing the minimum thickness requirements for steel strapping or brackets required in wind zones II and III from 26 gage (0.0179'') to 0.016.'' According to engineering analysis, the reduction in thickness should not affect the resistance of these materials to design wind forces. This is because the resistance of the fasteners, rather than the straps or brackets appears to govern the design requirements. HUD is requesting comments on whether these changes for critical connections in high wind regions should be implemented unless also supported by suitable load tests.

The proposed rule would amend § 3280.305(g)(3) to require wood panel products used as floor or subfloor materials on the exterior of the home to be rated for exterior exposure and be protected from moisture by sealing or applying nonabsorbent overlay with water resistant adhesive. These added requirements would provide protection

against deterioration of exterior floor decking materials when exposed to moisture. When certain types of decking materials, such as particleboard, become saturated with moisture, significant structural damage can occur. In addition, the requirement that panel products be ''rated'' for exterior exposure would assist in identifying the types of decking materials acceptable for use in exterior applications.

The proposed rule would amend § 3280.306(b) to require that each column support pier location required along the marriage line(s) of multi-section manufactured homes be identified at each pier location by paint, label or other acceptable methods. These location identifications are to be visible after the home is installed. Currently, there is no requirement for the manufacturer to identify the required locations for centerline pier supports under multi-section manufactured homes. Locating these main pier supports in the wrong location can cause serious damage to the structure and be costly to repair. This proposal could help reduce the chance for error on the installer's part. The cost of marking these pier support locations as proposed would be negligible compared with the potential cost savings that may be realized by all parties.

HUD is rejecting the proposed revised Construction and Safety Standard that would remove the Health Notice on Formaldehyde Emissions required by § 3280.309 of the Construction and Safety Standards. (See discussion of Rejected or Modified Construction and Safety Standards.)

D. Subpart E—Testing

The proposed revised Construction and Safety Standards would amend § 3280.401 to clarify that design live load deflection criteria does not apply when the structural assembly being evaluated does not include structural framing members.

The proposed rule would amend § 3280.402 to provide more stringent initial qualification of truss designs. Truss testing by HUD as well as industry changes in roof designs in recent years suggested the need to enhance overall roof truss performance. In addition the proposed rule would also expand and clarify the requirements for follow up testing to better assure that subsequent production of trusses will meet the requirements of the Construction and Safety Standards.

The revised truss testing procedures would also eliminate the present alternative for testing trusses under the non-destructive method, add provisions for limiting dead load deflection to L/480, revise uplift test requirements, and make other changes to the current test methods permitted by the Construction and Safety Standards. These proposals are based, in part, on a study conducted at the National Association of Home Builders Research Center, ''Comparison of Methods for Wind Uplift Load Testing of Roof Trusses for Manufactured Housing,'' September 1994, and incorporate the recommendations of a special task force consisting of manufacturers, testing organizations, and truss fabricators. The proposal revisions to the truss testing requirements were also subjected to the NFPA consensus process prior to the MHCC reviewing and recommending them to HUD.

E. Subpart F—Thermal Protection

The proposed rule would amend § 3280.504(b) to incorporate certain provisions of a waiver published in the **Federal Register** on April 24, 2002 (67 FR 20400). The waiver permits manufactured homes intended to be sited in climates that would have higher humidity levels outside than would be inside the home to install the vapor retarder outside of the home's thermal insulation. Currently, the Construction and Safety Standards would only permit the vapor retarder to be located interior to the thermal insulation regardless of the prevailing climatic conditions. The reason for this revision is to address the nature of moisture problems in warm, humid climates where the flow of moisture in the air would be from the exterior to the interior.

Homes constructed with the vapor retarder installed interior to the insulation create a cold surface conducive to condensation in conjunction with the prevalence of air conditioning. This would tend to trap any moisture that makes its way into the wall. The MHCC has advised HUD that it will be making additional recommendations for the installation of the vapor retarder in manufactured homes intended to be sited in warm, humid climates, and HUD will consider those recommendations when they are made. The proposed rule would also incorporate a map that will designate the applicable ''Humid'' and ''Fringe'(humid) zones by state and county. HUD is requesting comments on whether the final rule should also include provisions to restrict exterior wall cavities from being ventilated to the outdoors as required by the Waiver.

The proposed rule would amend § 3280.508(a) by making editorial revisions to specify the correct chapters, and portion thereof, that do not apply to manufactured homes to be consistent with the 1997 edition of the ASHRAE Handbook of Fundamentals that is being incorporated.

The proposed rule would amend § 3280.508(e) to permit window manufacturers the alternative to rate their window energy performance by utilizing National Fenestration Rating Council (NFRC) standard NFRC 100. Pursuant to a Congressional mandate, the NFRC has established a comprehensive rating, certification and labeling program for the energy performance of fenestration products. Currently, only the AAMA standard AAMA 1500 is referenced for this purpose. Inclusion of the NFRC standard would alleviate the need for those manufacturers who previously have been utilizing NFRC 100 from also having to also test to the AAMA 1500 and vice-versa.

The proposed revised Construction and Safety Standards would also revise § 3280.510 by incorporating a map that would designate the applicable Humid and Fringe zones by state and county. A reproduction of the map would be required to be included on the Heating Certificate and could also be combined with the Uo map for those homes constructed for those zones in addition to or in combination with the Uo value map. A statement, ''This home is designed and constructed to be sited only in humid or fringe climate regions as shown on the Humid and Fringe Climate Map,'' would be required in conjunction with Humid and Fringe zone map on the Heating Certificate.

F. Subpart G—Plumbing Systems

The proposed revised Construction and Safety Standards would amend § 3280.607(a) to require restricted flow faucets and showerheads and add a paragraph (b) to require the use of low water consumption water closets. This will conserve water and help assure continued availability of adequate water supplies, as well as reducing wastewater flows.

The proposed rule would include requirements for low consumption water closets (1.6 gallons per flush), and clarify that showerheads and faucets are also to meet updated requirements (maximum flow rate of 2.5 gallons per minute) for water conservation as required by the Energy Policy Act of 1992.

G. Subpart H—Heating, Cooling and Fuel Burning Systems

The proposed rule would amend § 3280.709 by adding a paragraph (h) to require the installation of a corrosion resistant water drip collection and drain

pan under each water heater. Water heater manufacturers recommend that a drain pan be installed under water heaters when they are not positioned on a concrete floor near a drain. The present rule does not require that a drain pan be provided under water heaters or that the water heater compartment be built in a protective manner such as a shower stall that would provide a method for water to drain outside the home. Water leakage in the water heater compartment could result in structural deterioration and damage to the floor sheathing and, if left unattended, could allow a water heater to fall through the floor decking. This could result in serious safety problems for the occupants. For gas water heaters, the gas line could be ruptured, which could cause a fire or explosion or the exhaust stack could become separated thereby permitting dangerous fumes to enter into the home. An electric water heater falling through the floor could cause an electric short and also result in a fire.

The proposed rule would amend § 3280.715(c) to require joints and seams of sheet metal and flexible metal ducts, including risers, trunks, crossovers, branches and plenums to be mechanically secured and made substantially air tight. The proposed rule would also require that the tapes and sealants used to seal the duct systems be applied to dry clean surfaces having no dirt, grease or oil on them. Currently the Construction and Safety Standards only specify that the joints and seams of ducts be securely fastened and made substantially airtight. Criteria would also be added for sealants and tapes to be listed in accordance with UL 181A for rigid ducts and UL181B for flexible ducts. Presently, the Construction and Safety Standards do not require sealants or tapes to be listed to any standard, but do require they not deteriorate under long exposures to elevated temperature, high humidity or excessive moisture.

H. Subpart I—Electrical Systems

The proposed rule would amend § 3280.806(d)(9) by clarifying that a receptacle outlet would be provided on a wall adjacent to and within 36 inches of the outside edge of each bathroom basin. This wall receptacle outlet would be in addition to any outlet that is part of a lighting fixture or appliance that is over a bathroom basin. This revision would no longer permit a receptacle that is integral with the light fixture over a bathroom basin to serve as the only outlet for a bathroom basin location. This change addresses safety concerns related to the permissible length of power cords for small appliances that may arise in areas in which flowing water and electrical outlets are in close proximity, such as light fixtures at bathroom basin locations.

The current Construction and Safety Standards do not specifically address the gap clearance requirements for installing an outlet box in walls and ceilings of noncombustible material. The proposed rule would amend § 3280.808(o) to provide a tolerance for the gap at the edge of a box in walls or ceilings of noncombustible material consistent with the 1996 edition of the National Electrical Code.

I. Revisions to Standards Incorporated by Reference (Reference Standards)

The following is a list of the standards incorporated by reference that would be revised by this proposed rule. Each reference standard is preceded with an indicator to identify the type of change being made. A new reference standard being added is indicated by the designation ''N,'' a reference standard being updated is indicated by the designation ''U,'' while a reference standard being deleted is indicated by the designation ''DELETED.'' The sections of the Construction and Safety Standards that would be amended by each modification are also shown on the right of each reference standard being added, updated, or deleted.

BILLING CODE 4210–27–P

U			
AA	**1994**	**Aluminum Design Manual, Section 1** (Note: title change only)	**3280.304**
N			
AAMA/WDMA 101/IS 2-97	1997	Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors –ANSI Approved	3280.304(b)(1) 3280.403(b)&(e) 3280.404 (b)
U			
AAMA 1701.2	1995	Primary Window and Sliding Glass Door Voluntary Standard for Utilization in Manufactured Housing	3280.403(b) 3280.403(e) 3280.403(e)(2) 3280.404(b)
U			
AAMA 1702.2	1995	Swinging Exterior Passage Doors Voluntary Standard for Utilization in Manufactured Housing	3280.405(b) 3280.405(e) 3280.405(e)(2)
U			
AFPA	1997	Allowable Stress Design (ASD) Manual for Engineered Wood Construction including National Design Specifications for Wood Construction, 1997 Edition, with Supplement, Design Values for Wood Construction	3280.304(b)(1)
U			
AFPA	1993	Design Values for Joists and Rafters	3280.304(b)(1)
U			
AISI	1996	Specification for the Design of SG971 Cold-Formed Steel Structural Members	3280.304(b)(1) 3280.305(i)(1)
DELETE			
ANSI C73.17	1972	Dimension of Caps, Plugs and Receptacles, Ground Type (Note- Replaced by NEMA WD-6 see ANSI/NEMA WD-6)	3280.803(g)
U			
ANSI Z21.1.1	1996	Household Cooking Gas Appliances	3280.703
U			
ANSI Z21.5.1	1995	Gas Clothes Dryers Volume 1	3280.703

U			
ANSI Z21.10.1a	1993	Gas Water Heaters-Volume 1, Storage Water Heaters with Input Ratings of 75,000 BTU per hour or Less	3280.703
U			
ANSI Z21.15	1997	Manually Operated Gas Valves for Appliances, Appliance Connector Valves and Hose End Valves	3280.703
U			
ANSI Z21.20	1997	Automatic Gas Ignition Systems and Components	3280.703
U			
ANSI Z21.21	1995	Automatic Valves for Gas Appliances	3280.703
U			
ANSI Z21.23	1993	Gas Appliance Thermostats	3280.703
U			
ANSI Z21.24	1997	Connectors for Gas Appliances	3280.703
U			
ANSI Z21.40.1	1996	Gas Fired Heat Activated, Air Conditioning and Heat Pump Appliances	3280.703 3280.714(a)(2)
U			
ANSI Z21.47	1995	Gas-Fired Central Furnaces (Note - Incorporates provisions of Z21.64 now discontinued, that are related to direct vent)	3280.703

DELETE			
ANSI Z21.64	1990	Direct Vent Central Furnaces With Addendum Z21.64a-1992 (Discontinued-Now part of Z21.47)	3280.703
U			
ANSI Z34.1	1993	Third Party Certification	3280.403(e)(1) 3280.405(e)(1)
N			
ANSI Z124.5	1997	Plastic Toilet (water closet) Seats	3280.604(a)
N			
ANSI Z124.7	1997	Prefabricated Plastic Spa Shells	3280.604(a)
N			
ANSI Z124.8	1990	Bathtub Liners	3280.604(a)
N			
ANSI Z124.9	1994	Plastic Urinal Fixtures	3280.604(a)
U			
ANSI/AHA A135.4	1995	Basic Hardboard	3280.304(b)(1)
U			
ANSI/AHA A135.5	1995	Prefinished Hardboard Paneling	3280.304(b)(1)
U			
ANSI/AHA A135.6	1998	Hardboard Siding	3280.304(b)(1)
U			
ANSI/CPA A208.1	1999	Wood Particleboard	3280.304(b)(1)
N			
ANSI/ ASME A112.4.1	1993	Water Heater Relief Valve Drain Tubes (Reaffirmed 2002)	3280.604(a)

N			
ANSI/ ASME A112.4.3	1999	Plastic Fittings for Connecting Water Closets to the Sanitary Drainage System	3280.604(a)
DELETE			
ANSI/ ASME A112.18.1M	1989	Plumbing Fixture Fittings	3280.604(a)
N			
ANSI/ ASME A112.18.3	1996	Performance Requirements for Backflow Devices and Systems in Plumbing Fixture Fittings	3280.604(a)
N			
ANSI/ ASME A112.18.6	1999	Flexible Water Connectors	3280.604(a)
N			
ANSI/ ASME A112.18.7	1999	Deck Mounted Bath/Shower Transfer Valves	3280.604(a)
N			
ANSI/ASME A112.19.9	1998	Non-Vitreous Ceramic Plumbing Fixtures	3280.604(a)
N			
ANSI/ASME A112.19.10	1994	Dual Flush Devices for Water Closets	3280.604(a)
N			
ANSI/NEMA WD-6	1997	Wiring Devices-Dimensional Requirements (Replaces C73.17 of the same title.)	3280.803
N			
ANSI/61-NSF	1997	Drinking Water Systems	3280.604(b)(2)

		Components-Health Effects	
DELETE			
NWWDA IS 1-87		Wood Flush Doors	3280.394(b)(1) 3280.405(c)(1)
DELETE			
ANSI/ NWWDA IS-2	1987	Wood Windows (This standard is replaced by AAMA/WDMA 101/ IS 2-1997 NWWDA [National Wood Window & Door Association] is now the WDMA [Window & Door Manufacturers Association])	3280.304(b)(1)
DELETE			
ANSI/NWWDA IS-3	1988	Wood Sliding Patio Doors *(This standard is replaced by AAMA/WDMA 101/IS 2-1997)*	3280.304(b)(1)
DELETE			
NWWDA IS 4-88		Water Repellent Preservative Non pressure treatment for Millwork	3280.304(b)(1)
DELETE			
ANSI/TPI 1	1990	National Design Standard for Metal Plate Connected Wood Truss Construction	3280.304(b)(1)
DELETE			
APA PRP E108 E445N	1989	Performance Standards and Policies (standard discontinued)	3280.304(b)(1)
U			
APA E 30M	1996	Design/Construction Guide, Residential and Commercial Structures	3280.304(b)(1)

U			
APA S 811M	1995	Design and Fabrication of Plywood Curved Panels PDS supplement #1	3280.304(b)(1)
U			
APA S 812P	1996	Design and Fabrication of Glued Plywood Lumber Beams PDS supplement #2	3280.304(b)(1)
U			
APA U 813K	1996	Design and Fabrication of Plywood Stressed Skin Panels PDS supplement #3	3280.304(b)(1)
U			
APA H 815E	1995	Design and Fabrication of All Plywood Beams, PDS supplement # 5	3280.304(b)(1)
U			
APA 51	1997	Plywood Design Specification	3280.304(b)(1)
N			
ASCE-8-91	1991	Specification for the Design of Cold-Formed Stainless Steel Structural Members	3280.304(b)(1)
N			
ASCE-19-96	1996	Structural Applications of Steel Cables for Buildings	3280.304(b)(1)
U			
ASHRAE	1997	ASHRAE Handbook of Fundamentals I.P. Edition	3280.508 3280.511
N			
ASSE/ANSI 1051	1998	Air Admittance Valves for Plumbing Drainage Systems-Fixture and Branch Devices	3280.604(a)

U			
ASTM A539-99	1999	Standard Specification for Electric-Resistance- Welded Coiled Steel Tubing for Gas and Fuel Oil Lines	3280.703 3280.705(b)(4)
U			
ASTM B280-95	1995	Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service	3280.703 3280.705(b)(3) 3280.706(b)(3)
U			
ASTM C36M-99	1995	Standard Specification for Gypsum Wallboard	3280.304(b)(1)
U			
ASTM D4442-99	1999	Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials	3280.304(b)(1)
DELETE			
ASTM E84-91	1991	Standard Test Method for Surface Burning Characteristics of Building Materials	3280.203(a)
U			
ASTM E96-95	1995	Standard Test Methods for Water Vapor Transmission of Materials	3280.504(a)
U			
ASTM E162-94	1994	Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source	3280.203(a)
U			
ASTM E773-97	1997	Standard Test Methods for Accelerated Weathering of Sealed Insulating Glass Units	3280.403(d)(2)

U			
ASTM E774-97	1997	Standard Specification for the Classification of Durability of Sealed Insulating Glass Units	3280.403(d)(2)
U			
ASTM E1333-96	1996	Standard Test Method for Determining Formaldehyde Concentrations in Air and Emission Rates from Wood Products Using a Large Chamber	3280.406(b)
U			
HPVA HP SG-96	1996	Structural Design Guide for Hardwood Plywood Wall Panels Design Guide	3280.304(b)(1)
U			
ANSI/ HPVA HP-1	1994	Standard for Hardwood and Decorative Plywood, ANSI Approved January 5, 1995	3280.304(b)(1)

DELETE			
HUD-FHA UM -25d-73	1973	Application and Fastening Schedule: Power-Driven, Driven Fasteners, Use of Materials Bulletin UM-25d	3280.304(b)(1)
U			
IAPMO TSC 09	1997	Gas Supply Connectors for Manufactured Homes	3280.703
N			
IAS LC 1			3280.703
U			
IIT J 6461	1989	Development of Mobile Home Fire Test Methods to Judge the Fire-Safe Performance of Foam Plastic Sheathing and Cavity Insulation (Note- This is an editorial revision to insert the date of publication only)	3280.207(a)
N			
NER-272 9/	1997	Power Driven Staples and Nails for use in all Types of Buildings Construction. (This is published by the National Evaluation Service)	3280.304(b)
U			
NFPA 31	1997	Installation of Oil-Burning Equipment	3280.703 3280.707(f)
U			
NFPA 54	1996	Natural Fuel Gas Code	3280.703
U			
NFPA 58	1995	Standard for the Storage and Handling of Liquefied Petroleum Gases	3280.703 3280.704(b)(5)(i)

U			
NFPA 70	1996	National Electrical Code	3280.801(a) 3280.801(b) 3280.803(k)(1) (k)(3) 3280.804(a) 3280.805(a)(3) 3280.806(a)(2) 3280.807(c) 3280.808(a)(m)&(q) 3280.811(b)
U			
NFPA 220	1995	Standard on Types of Building Construction (This standard is referenced in 24 CFR 3280 to provide definitions of "noncombustible material" and "limited combustible material")	3280.202(a)(4) 3280.202(a)(5)
N			
NFPA 255	1996	Standard Method of Test of Surface Burning Characteristics of Building Materials. (This standard would replace ASTM E84)	3280.203(a)
N			
NFRC-100	1997	Procedure for Determining Fenestration Product U Factors	3280.508(e)
U			
PS 1-95	1999	Voluntary Product Standard, Construction and Industrial Plywood	3280.304(b)(1)
U			
PS 2-92	1996	Voluntary Product Standard Performance Standard for Wood-Based Structural-Use Panels (This standard replaces APA PRP	3280.304(b)(1)

		108-86, which has been discontinued.)	
U			
SJI 40th Edition		Standard Specification and Load Tables for Steel Joist and Steel Joist Girders	3280.304(b)(1)
U			
UL 94	1996	Test for Flammability of Plastic Materials for Parts in Devices and Appliances, Fifth Edition-October 29, 1996	3280.715(e)(1)
U			
UL 103	1996	Factory-Built Chimneys for Residential Type and Building Heating Appliances, Ninth Edition	3280.703
U			
UL 109	1997	Tube Fittings for Flammable and Combustible Fluids, Refrigeration Service & Marine Use, Sixth Edition-June 19, 1997	3280.703
U			
ANSI/UL 127	1998	Factory-Built Fireplaces, Seventh Edition-May 16, 1998	3280.703
U			
ANSI/UL 174	1997	Household Electric Storage Tank Water Heaters	3280.703
U			
UL 181	1998	Factory Made Air Ducts and Air Connectors	3280.703 3280.715(e)

N			
UL 181A	1998	Closure Systems for Use with Rigid Air Ducts and Air Connectors	3280.703 3280.715(c)
N			
UL 181B	1998	Closure Systems for Use with Flexible Air Ducts and Air Connectors	3280.703 3280.715(c)
U			
UL 307A	1998	Liquid Fuel-Burning Heating Appliances for Manufactured Homes and Recreational Vehicles	3280.703 3280.707(f)
U			
UL 307B	1998	Gas Burning Heating Appliances for Manufactured Homes and Recreational Vehicles	3280.703
U			
UL 311	1998	Roof Jacks for Manufactured Homes and Recreational Vehicles	3280.703
U			
UL 441	1997	Gas Vents	3280.703
DELETE			
UL 465	1987	Central Cooling Air Conditioners (This standard discontinued and replaced by UL 1995)	3280.703
U			
ANSI/UL 569	1998	Pigtail and Flexible Hose Connectors for LP-Gas	3280.703 3280.705

U			
UL 737	1998	Fireplace Stoves	3280.703
DELETE			
UL 1025	1991	Electric Air Heaters (This standard discontinued and replaced by UL 2021)	3280.703
U			
ANSI/UL 1042	1998	Electric Baseboard Heating Equipment	3280.703
U			
UL 1482	1998	Solid-Fuel Type Room Heaters	3280.703
N			
UL 1995	1995	Heating and Cooling Equipment, Second Edition-September 29, 1995 (Replaces UL 465, UL 559 and UL 1096)	3280.703
N			
UL 2021	1998	Fixed and Location-Dedicated Electric Room Heaters, (Replaces UL 1025)	3280.703

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III. Rejected or Modified Construction and Safety Standards

After reviewing the proposed revised Construction and Safety Standards recommended by the MHCC, HUD had concerns regarding a few of the MHCC's recommendations. The MHCC and HUD had the opportunity to discuss those concerns during the June 7, 2004, telephone conference meeting announced in the **Federal Register** on May 19, 2004 (69 FR 28944). As a result of that discussion, several of those concerns were resolved and are not at issue in this proposed rule. This section of the preamble discusses only those recommendations on which the MHCC and HUD did not reach agreement. Following HUD's discussion of its reasons for not accepting or modifying a recommendation, the preamble and regulatory text of the recommendation as submitted to HUD by the MHCC is published in full. HUD is specifically soliciting comments and feedback from the public on both the MHCC's recommendations as submitted to HUD, and HUD's proposed rejections and modifications of these recommendations.

Other editorial modifications to the document HUD received from the MHCC have also been made throughout this proposed rule to be consistent with formatting of **Federal Register** documents or for consistency with other requirements of the Construction and Safety Standards. The MHCC and HUD agreed that the convenience of the public would be better served by publishing a single proposed rule document, rather than publishing both the entire MHCC document and HUD's edited version of the MHCC document, as long as the original text of the MHCC recommendations that have been rejected or modified by HUD is included in the published document. In addition, the use of metric equivalent units was not incorporated in the proposed rule at this time, since it would be necessary to revise the entire standard for metric equivalents and not just the sections being recommended for revision. HUD requests comment on the use of metric units of measurement in the Construction and Safety Standards. Comment is specifically requested on whether English and metric units should be used concurrently or whether only one or the other should be used. HUD is also interested in any information on whether there are circumstances in which the use of one of these measurement systems would be more appropriate than the use of the other.

The following discussion provides HUD's reasons for rejecting one of the MHCC's proposed revised Construction and Safety Standards and for making modifications to two other recommendations of the MHCC. The text of the MHCC recommendation being rejected or modified follows HUD's discussion in each case.

Rejected Construction and Safety Standard: Formaldehyde Health Notice

HUD is rejecting the MHCC proposal to remove the requirement in the Construction and Safety Standards for the Health Notice on formaldehyde emissions to be prominently displayed in a temporary manner in each manufactured home (24 CFR 3280.309). The MHCC did not provide or reference any data or studies in support of the recommendation to remove the Health Notice requirement and HUD, therefore, has no basis for taking such action. The Construction and Safety Standard that requires this notice is supported by a substantial factual and scientific record. A determination to no longer require the notice would similarly require substantial factual and scientific support.

The law requires a federal agency to follow similar procedures for the rescission of rules as it does for their promulgation. In reviewing a Federal agency's decision to rescind its rules, the courts consider three elements: (1) Whether the record supports the factual conclusions upon which the rule is based, (2) the reasonableness or rationality of the rule, and (3) the extent to which the agency has adequately articulated the basis for its conclusions. For HUD to rescind this rule without the necessary technical or scientific support would violate these factors and risk the decision being challenged as arbitrary and capricious. See *Motor Vehicle Mfrs. Ass'n* v. *State Farm Mut. Auto. Ins. Co.,* 463 U.S. 29, 41–42, 77 L. Ed. 2d 443, 103 S. Ct. 2856 (1983).

Further, while the materials that emit formaldehyde and are used in the construction of manufactured homes are similar to those in modular homes and on-site homes, manufactured homes are permitted to use urea formaldehyde resins in particleboard and plywood panels, which have a greater propensity to emit formaldehyde than the materials used to construct modular or on-site homes.

HUD recognizes that improvements have been made in particleboard and plywood panel processing and construction resulting in lower emission levels than from panels bonded with urea-formaldehyde resin systems that were available at the time of the implementation of the formaldehyde emission requirements. However, as indicated in the preamble of the final rule on formaldehyde in 1984, there is a sector of the population that has greater sensitivity to and is at more risk of formaldehyde's irritant effects and that will react adversely to formaldehyde at extremely low levels of exposure. This includes the elderly, young children, and individuals with a history of asthma, allergies or lung problems. The purpose of the Health Notice is to advise prospective purchasers that the home contains materials that emit formaldehyde and to describe acute symptoms that may occur under formaldehyde exposure for those individuals who may be at greater risk.

The Act, at sec. 604(e)(1) (42 U.S.C. 5403(e)(1)), requires both the MHCC in recommending Construction and Safety Standards and HUD in establishing Construction and Safety Standards to:

> consider relevant available manufactured home construction and safety data, including the results of research, development, testing, and evaluation activities conducted pursuant to this title, and those activities conducted by private organizations and other governmental agencies to determine how to best protect the public[.]

To assist both the MHCC and HUD in addressing this statutory provision, which is consistent with the concerns discussed above for now rejecting this proposed revision, HUD specifically requests the submission of data and studies developed since the adoption of the Health Notice requirement that would be relevant to the MHCC's and HUD's consideration of revisions to this requirement. HUD solicits any new evidence of the impact on, or change in, health related concerns that are a result of improved manufacturing processes for manufactured housing materials and strongly emphasizes the importance of science-based rulemaking for the issues present here.

The MHCC's recommendation was to remove 24 CFR 3280.309, entitled, ''Health Notice on formaldehyde emissions,'' and the MHCC's preamble discussion of this recommendation stated:

> The proposed rule would amend the Standards by deleting § 3280.309 and thereby remove the Health Notice on Formaldehyde Emissions. The materials used in manufactured homes are the same as those used in site-built homes and modular homes, neither of which requires such a health notice. There is no evidence that this Health Notice is instrumental in protecting the public or in preventing litigation. Since 1985, when the formaldehyde product standards for plywood and particleboard became effective, there has been significant progress in lowering formaldehyde levels in

manufactured homes. The Health Notice serves only as a sales deterrent, while contributing to existing misunderstanding by the public regarding health related issues associated with formaldehyde emissions.

HUD's Modifications to the MHCC's Proposed Revised Construction and Safety Standards

Fireblocking

HUD is modifying the proposed recommendation from the MHCC on fireblocking because the provisions for the use of mineral wool or cellulose insulation have not been adequately evaluated for transportation effects that could cause settling or shifting of those materials. While these materials may be acceptable for on-site construction, their performance has not been thoroughly evaluated for all applications where fireblocking is required in manufactured homes. Further, recent site investigations where insulating materials were inappropriately used at penetrations for heating vents have found voids in the insulation likely caused by transportation around the pipes, which would permit a fire to spread from the furnace or water heater compartment to the ceiling/roof area.

The preamble language submitted by the MHCC on this issue is:

B. Firestopping

The proposed rule amending § 3280.206 would change the term ''Firestopping'' to ''Fireblocking'' to be consistent with current building code terminology and application. Further, criteria are added for testing loose-fill insulation that provides a performance-based alternative for the use of such insulation. Both glass fiber and cellulose loose-fill insulations have already been so tested. The proposed rule would also replace and clarify existing language to better define locations where fireblocking is required. Guidance is provided on how to fireblock a penetration while allowing an alternate method of filling the entire concealed space to cut off the concealed draft opening.

The regulatory language submitted by the MHCC on this issue follows. HUD accepted all of the MHCC's recommendations for revising 24 CFR 3280.206 except paragraphs (b)(2) and (b)(3), and the second sentence of paragraph (c)(3):

5. Revise § 3280.206 to read as follows:

§ 3280.206 Fireblocking

(a) *General.* Fireblocking shall comply with Section 206. The integrity of all fireblocking materials shall be maintained.

(b) *Fireblocking Materials.* Fire blocking shall consist of the following materials.

(1) Minimum 1 in. (25.4 mm) nominal lumber, 5/16 in. (8 mm) thick gypsum board, or the equivalent.

(2) Mineral wool or unfaced glass fiber batts or blankets shall be allowed as fireblocking where the material fills the entire cross section of the concealed space to minimum height of 16 in. (406 mm) measured vertically. The mineral wool or unfaced glass fiber batts or blankets shall be installed so as to be retained securely in place.

(3) Loose-fill insulation shall be allowed as fireblocking where it has been specifically tested in the form and manner intended for use to demonstrate its ability to remain in place and to retard the spread of fire and hot gasses.

(4) Other Listed or Approved Materials.

(c) Fireblocking Locations.

(1) Fireblocking shall be installed in concealed spaces of stud walls, partitions, and furred spaces at the floor and ceiling levels. Concealed spaces shall not communicate between floor levels. Concealed spaces shall not communicate between a ceiling level and a concealed roof area, or an attic space.

(2) Fireblocking shall be installed at the interconnection of a concealed vertical space and a concealed horizontal space that occurs (i) between a concealed wall cavity and the ceiling joists above, (ii) at soffits, drop ceilings, cover ceilings and similar locations.

(3) Fireblocking shall be installed around the openings for pipes, vents and other penetrations in walls, floors and ceilings of furnace and water heater spaces. Fireblocking shall completely fill the opening around the penetration or shall completely fill the cavity or concealed space into which the penetration is made. Pipes, vents, and other penetrations that cannot be moved freely within their opening shall be considered fireblocked. Materials used to fireblock heat producing vent penetrations shall be noncombustible or limited combustible types.

One-Piece Metal Roofing in High Wind Areas

HUD is modifying the proposal recommended by the MHCC for one-piece metal roofing installed in high wind areas to be consistent with the provisions of Interpretative Bulletin I–2–98. Specifically, HUD is modifying proposed footnote 9 to the Table of Design Wind Pressures in 24 CFR 3280.305 of the Construction and Safety Standards to indicate that test methods must be approved by HUD and comply with the requirements of 24 CFR 3280.303(c) and (g) and 3280.401 of the Construction and Safety Standards. This would further clarify that tests would need to meet the structural load test requirements of the Construction and Safety Standards and that testing methods and procedures would need to be approved by HUD. Therefore, proposed footnote 9 is being modified to read as follows:

''9. One-piece metal roofing capable of resisting the design wind pressures in this Table for components and cladding (exterior roof coverings) is allowed to be used without structural sheathing provided it is tested using procedures that have been approved by HUD and meets all requirements of §§ 3280.303(c) and (g) and 3280.401.''

The preamble language submitted by the MHCC on this issue is:

The proposed rule would amend § 3280.305(c)(1)(ii) by adding a footnote to the table in (B) to permit the use of certain one-piece metal roofing without structural sheathing in the high wind area zones II and III. One-piece metal roofing when subjected to the negative pressures specified in the table performs as a structural catenary membrane. Numerous tests have shown this design to be viable and effective. In fact, these tests show that the design has superior load resistance capacity to the shingle roof with sheathing option which is currently allowed without having to be evaluated for the loads in the table.

The regulatory language of the footnote submitted by the MHCC on this issue is:

9. One piece metal roofing, tested without structural sheathing, using the design wind pressures specified in the table for component and cladding (exterior roof coverings), are allowed to be used without structural sheathing.

IV. Findings and Certifications

Regulatory Planning and Review

The Office of Management and Budget (OMB) reviewed this rule under Executive Order 12866 (entitled ''Regulatory Planning and Review''). OMB determined that this rule is a ''significant regulatory action'' as defined in section 3(f) of the Order (although not an economically significant regulatory action, as provided under section 3(f)(1) of the Order). Any changes made to the rule subsequent to its submission to OMB are identified in the docket file, which is available for public inspection in the Regulations Division, Room 10276, Office of General Counsel, Department of Housing and Urban Development, 451 Seventh Street, SW., Washington, DC 20410–0500.

Paperwork Reduction Act

The proposed new information collection requirements contained in §§ 3280.103(b), 3280.306 (b)(1) and 3280.510 (a)(b)(c) have been submitted to the Office of Management and Budget (OMB) for review under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3520). Under this Act, an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the collection displays a valid control number. OMB has issued HUD the control number 2502–0253 for the information collection requirements under the current Manufactured Housing

Construction and Safety Standards Program.

The public reporting burden for this new collection of information is estimated to include the time for reviewing the instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

Information on the estimated public reporting burden is provided in the following table:

Information collection	Number of respondents	Responses per respondent	Total annual responses	Hours per response	Total hours
Whole-house ventilation instructions	200	850	170,000	.012	2040
Mark location of whole-house ventilation	200	850	170,000	.012	2040
Centerline support locations	200	510	102,000	.033	3366
Map size on Heat Loss Certificate	200	850	170,000	(*)	10
Humid zone designation	200	150	30,000	(*)	10
Total burden					7466

*Certificate already required. One-time alteration change.

In accordance with 5 CFR 1320.8(d)(1), HUD is soliciting comments from members of the public and affected agencies concerning the proposed collection of information to:

(1) Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;

(2) Evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information;

(3) Enhance the quality, utility, and clarity of the information to be collected; and

(4) Minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated collection techniques or other forms of information technology, *e.g.*, permitting electronic submission of responses.

Interested persons are invited to submit comments regarding the information collection requirements in this proposal. Under the provisions of 5 CFR 1320, OMB is required to make a decision concerning this collection of information between 30 and 60 days after today's publication date. Therefore, any comment on the information collection requirements is best assured of having its full effect if OMB receives the comment within 30 days of today's publication. This time frame does not affect the deadline for comments to the agency on the proposed rule, however. Comments must refer to the proposal by name and docket number (FR–4886–P–01) and must be sent to:

Mark D. Menchik, HUD Desk Officer, Office of Management and Budget, New Executive Office Building, Washington, DC 20503,
Mark_D._Menchik@omb.eop.gov.
and

Kathleen O. McDermott, Reports Liaison Officer, Office of the Assistant Secretary for Housing-Federal Housing Commissioner, Department of Housing and Urban Development, 451 Seventh Street, SW. Room 9116, Washington, DC 20410–8000.

Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (2 U.S.C. 1531–1538) establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. This rule will not impose any Federal mandates on any State, local, or tribal government or the private sector within the meaning of the Unfunded Mandates Reform Act of 1995.

Environmental Review

A Finding of No Significant Impact with respect to the environment has been made in accordance with HUD regulations at 24 CFR part 50, which implement section 102(2)(C) of the National Environmental Policy Act of 1969 (42 U.S.C. 4332(2)(C)). The Finding of No Significant Impact is available for public inspection between the hours of 8 a.m. and 5 p.m. weekdays in the Regulations Division, Office of General Counsel, Room 10276, Department of Housing and Urban Development, 451 Seventh Street, SW., Washington, DC 20410–0500.

Impact on Small Entities

The Secretary, in accordance with the Regulatory Flexibility Act (5 U.S.C. 605(b)), has reviewed and approved this proposed rule and in so doing certifies that the rule would not have a significant economic impact on a substantial number of small entities. The rule would regulate establishments primarily engaged in making manufactured homes (NAICS 32991). The Small Business Administration's size standards define an establishment primarily engaged in making manufactured homes as small if it does not exceed 500 employees. Of the 222 firms included under this NAICS definition, 198 are small manufacturers that fall below the small business threshold of 500 employees. The proposed rule will apply to all of the manufacturers. The rule would, thus, affect a substantial number of small entities. However, based on an analysis of the costs and the fact that a small manufacturer would just as likely produce homes at the higher end of the cost spectrum as would a major producer, evaluating the effect of the increase is not discernible based on the size of the manufacturing operation. For the reasons stated below, HUD knows of no instance of a manufacturer with fewer than 500 employees that would be significantly affected by this rule.

HUD with the concurrence of the MHCC has conducted an economic cost impact analysis for this rule. A copy of the economic analysis is available for public inspection and copying between 8 a.m. and 5 p.m. weekdays at the Regulations Division, Office of General Counsel, Room 10276, Department of Housing and Urban Development, 451 Seventh Street, SW., Washington, DC 20410–0500. The economic analysis concluded the potential cost impact, based on a per home cost determined to be approximately $77.28 multiplied by 170,000 homes produced in a year, is $13,137,600 annually. In addition, the cost of the paperwork burden associated with this rule is estimated to be approximately $112, 000 for the entire industry, which is less than an additional $1.00 per unit. Additional information about the paperwork burden can be found in the PRA section of the preamble. This does not represent a significant economic effect on either an industry-wide or per unit basis.

This relatively small increase in cost for the manufacturer associated with this proposed rule would not impose a

significant burden for a small business for homes that can cost the purchaser between $40,000 and $100,000. Therefore, although this rule would affect a substantial number of small entities, it would not have a significant economic impact on them.

Notwithstanding HUD's determination that this rule would not have a significant economic effect on a substantial number of small entities, HUD specifically invites comments regarding this certification and any less burdensome alternatives to this rule that will meet HUD's objectives as described in this preamble.

Executive Order 13132, Federalism

Executive Order 13132 (entitled ''Federalism'') prohibits, to the extent practicable and permitted by law, an agency from promulgating a regulation that has federalism implications and either imposes substantial direct compliance costs on state and local governments and is not required by statute, or preempts state law, unless the relevant requirements of section 6 of the Executive Order are met. This rule does not have federalism implications and does not impose substantial direct compliance costs on state and local governments or preempt state law within the meaning of the Executive Order.

V. Incorporation by Reference

Before HUD issues a final rule, these reference standards will be approved by the Director of the **Federal Register** for incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of these standards may be obtained from the following organizations:

AFPA—American Forest and Paper Association, 1111 19th Street NW., Washington, DC 20036, (202) 463–2700, fax (202) 463–5180, *http://www.afandpa.org.*

AHA—American Hardboard Association, 1210 West Northwest Highway, Palatine, Illinois 60067, (847) 934–8800, fax (847) 934–8803, *http://www.hardboard.org.*

AISI—American Iron & Steel Institute, 1101 17th Street, NW., Washington, DC 20036, (202) 452–7100, fax (202) 463–6573, *http://www.aisc.org.*

ANSI—American National Standards Institute, 11 West 42nd Street, New York, New York 10036, (212) 642–4900, fax (212) 398–0023, *http://www.ansi.org.*

APA—The Engineered Wood Association, 7011 South 19th Street, Tacoma, Washington 98411, (253) 565–6600, fax (253) 565–7265, *http://www.apawood.org.*

ASCE—American Society of Civil Engineers, 1015 15th Street, NW., Washington, DC 20005, (202) 789–2200, fax (202) 289–6797, *http://www.asce.org.*

ASHRAE—American Society for Heating, Refrigeration & Air Conditioning Engineers, 1791 Tuillie Circle NE., Atlanta, Georgia 30329, (404) 636–8400, fax (404) 321–5478, *http://www.ashrae.org.*

ASME—American Society of Mechanical Engineers, 345 East 47th Street, New York, New York 10017, (212) 705–8570, fax (212) 705–8599, *http://www.asme.org.*

ASSE—American Society of Sanitary Engineering, P.O. Box 40362, Bay Village, Ohio 44140, (216) 835–3040, fax (216) 835–3488, *http://www.asse-plumbing.org.*

ASTM—American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428, (610) 832–9500, fax (610) 832–9555, *http://www.astm.org.*

CSA (IAS)—CSA International (formerly International Approval Services), 8501 East Pleasant Valley Road, Cleveland, Ohio 44131, (216) 524–4990, fax (216) 642–3463, *http://www.csa-international.org.*

CPA—Composite Panel Association (formerly the National Particle-board Association) 18928 Premier Court, Gaithersburg, MD 20879–1574, (301) 670–0604, fax (301) 840–1252, *http://www.pbmdf.com.*

HPVA—Hardwood Plywood and Veneer Association, 1825 Michael Faraday Drive, Reston, Virginia 22090, (703) 435–2900, fax (703) 435–2537, *http://www.hpva.org.*

HUD—Department of Housing and Urban Development, Office of Consumer & Regulatory Affairs, 451 Seventh Street, SW., Washington, DC 20410, (202) 708–6423, fax (202) 708–4213.

IAPMO—International Association of Plumbing and Mechanical Officials, 20001 Walnut Drive South, Walnut, California 91789, (909) 595–8449, fax (909) 594–1537, *http://www.iapmo.org.*

IIT—IIT Research Institute, 10 West 35th Street, Chicago, Illinois 60616, (312) 567–3000, fax (312) 567–4167, *http://www.iitri.org.*

NEMA—National Electrical Manufacturers Association, 1300 North 17th Street, Suite 1847, Rosslyn, VA 22209, (703) 841–3200, fax (703) 841–5900, *http://www.nema.org.*

NER—International Code Council Evaluation Service [Previously known as National Evaluation Service], 5360 Workman Mill Road, Whittier CA 90601–0543.

NFPA—National Fire Protection Association, Batterymarch Park, Quincy, Massachusetts 02269, (617) 770–3000, fax (617) 770–0700, *http://www.nfpa.org.*

NFRC—National Fenestration Rating Council, Incorporated, 1300 Spring Street, Suite 120, Silver Spring, MD 20910, (301) 589–6372, fax (301) 588–0854, *http://www.nfrc.org.*

NSF—NSF International, P.O. Box 130140, Ann Arbor, Michigan 48113, (313) 769–8010, fax (313) 769–0109, *http://www.nsf.org.*

PS—National Institute of Standards & Technology, Voluntary Product Standards, Gaithersburg, Maryland 20810, (301) 975–2000, fax (301) 926–1559, *http://www.nist.gov.*

SJI—Steel Joist Institute, 1205 48th Avenue North, Suite A, Myrtle Beach, South Carolina 29577, (803) 626–1995, fax (803) 449–1343, *http://www.steeljoist.org.*

TPI—Truss Plate Institute, 583 D'Onofrio Drive, Suite 200, Madison, Wisconsin 53719, (608) 833–5900, fax (608) 833–4360, *http://www.tpinst.org.*

UL—Underwriters Laboratories, 333 Pfingsten Road, Northbrook, Illinois 60062, (847) 272–8800, fax (847) 509–6257, *http://www.ul.com.*

WDMA (NWWDA)—Window & Door Manufacturers Association (formerly the National Wood Window & Door Association), 1400 East Touhy Avenue, Des Plaines, Illinois 60018, (847) 299–5200, fax (847) 299–1286, *http://www.wdma.com.*

Catalog of Federal Domestic Assistance

The Catalog of Federal Domestic Assistance number for Manufactured Housing Construction and Safety Standards is 14.171.

List of Subjects in 24 CFR Part 3280

Housing standards, Manufactured homes.

Accordingly, for the reasons stated in the preamble, HUD proposes to amend 24 CFR part 3280 as follows:

PART 3280—MANUFACTURED HOME CONSTRUCTION AND SAFETY STANDARDS

1. The authority citation for part 3280 continues to read as follows:

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

2. In § 3280.4(b), add the following organizations to the list in alphabetical order to read as follows:

§ 3280.4 Incorporation by reference.

* * * * *

(b) * * *

NEMA—National Electrical Manufacturers Association, 1300 North 17th Street, Suite 1847, Rosslyn, VA 22209

NER—International Code Council Evaluation Service [Previously known as National Evaluation Service], 5360 Workman Mill Road, Whittier CA 90601–0543

* * * * *

NFRC—National Fenestration Rating Council, 8984 Georgia Avenue, Suite 320, Silver Spring, MD 20910

* * * * *

WDMA—Window and Door Manufacturers Association [Previously known as the National Wood Window and Door Association, NWWDA], 1400 East Touhy Avenue, Des Plaines, IL 60018

* * * * *

3. In § 3280.103, revise paragraph (b) to read as follows:

§ 3280.103 Light and ventilation.

* * * * *

(b) *Whole house ventilation.* Each manufactured home shall be provided with whole-house ventilation having a minimum capacity of 0.035 $ft^3/min/ft^2$ of interior floor space or its hourly average equivalent. This ventilation capacity shall be in addition to any openable window area. In no case shall the installed ventilation capacity of the system be less than 50 cfm nor more than 90 cfm. The following criteria shall be adhered to:

(1) The ventilation capacity shall be permitted to be provided by a mechanical system or a combination passive and mechanical system. The ventilation system or provisions for ventilation shall not create a positive pressure in Uo value Zone 2 and Zone 3 or a negative pressure condition in Uo value Zone 1 in excess of 0.03 inches of water.

(2) The ventilation system or provisions for ventilation 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 provisions for ventilation shall not draw or expel air into the floor, wall, or ceiling/roof systems, even if those systems are vented. The ventilation system shall be designed to ensure that outside air is distributed to all bedrooms and main living areas. The combined use of undercut doors or transom grills connecting those areas to the room where the mechanical system is located shall be deemed acceptable.

(3) The ventilation system or a portion thereof shall be permitted to be integral with the home's 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.

(4) The ventilation system or portion thereof shall also be permitted to be one of the bathroom exhaust fans required by § 3280.103(c)(3) provided the following criteria are met:

(i) Maximum sone rating of 1.0; and

(ii) Designed for continuous operation and a minimum 10-year life.

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

(6) Occupant Education. Instructions for correctly operating and maintaining whole-house ventilation systems shall be included with the homeowner's manual. The instructions shall encourage occupants to operate these devices whenever the home is occupied, and refer to the whole-house ventilation labeled control. The whole-house ventilation label shall be permanent, shall state: ''WHOLE-HOUSE VENTILATION'' and shall be attached to the whole-house ventilation control.

* * * * *

4. In § 3280.202, revise the definition of ''Limited combustible'' and the definition of ''Noncombustible material'' to read as follows:

§ 3280.202 Definitions.

* * * * *

Limited combustible: A material meeting:

(1) The definition contained in Chapter 2 of NFPA 220–1995, Standard on Types of Building Construction; or

(2) 5⁄16 inch or thicker gypsum board.

Noncombustible material: A material meeting the definition contained in Chapter 2 of NFPA 220–1995, Standard on Types of Building Construction.

* * * * *

5. Revise the introductory paragraph of § 3280.203(a) to read as follows:

§ 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 Method of Test of Surface Burning Characteristics of Building Materials, ASTM E–84, 2001 or NFPA 255, 1996,'' 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 162–94.'' However, the following materials need not be tested to establish their flame spread rating unless a lower rating is required by these standards:

* * * * *

6. Revise § 3280.206 to read as follows:

§ 3280.206 Fireblocking.

(a) *General.* Fireblocking shall comply with Section 206. The integrity of all fireblocking materials shall be maintained.

(b) *Fireblocking materials.* Fire blocking shall consist of the following materials:

(1) Minimum 1 inch nominal lumber, 5⁄16 inch thick gypsum board, or the equivalent; and

(2) Other Listed or Approved Materials;

(c) *Fireblocking locations.* (1) Fireblocking shall be installed in concealed spaces of stud walls, partitions, and furred spaces at the floor and ceiling levels. Concealed spaces shall not communicate between floor levels. Concealed spaces shall not communicate between a ceiling level and a concealed roof area, or an attic space.

(2) Fireblocking shall be installed at the interconnection of a concealed vertical space and a concealed horizontal space that occurs:

(i) Between a concealed wall cavity and the ceiling joists above; and

(ii) At soffits, drop ceilings, cover ceilings and similar locations.

(3) Fireblocking shall be installed around the openings for pipes, vents and other penetrations in walls, floors and ceilings of furnace and water heater spaces. Pipes, vents, and other penetrations that cannot be moved freely within their opening shall be considered fireblocked. Materials used to fireblock heat producing vent penetrations shall be noncombustible or limited combustible types.

7. In § 3280.207, revise paragraph (a)(4) introductory text to read as follows:

§ 3280.207 Requirements for foam plastic thermal insulating materials.

(a) * * *

(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, 1989'' or other full-scale fire tests accepted by HUD, 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.

* * * * *

8. In § 3280.303, paragraph (g) is revised to read as follows:

§ 3280.303 General requirements.

* * * * *

(g) *Alternative test procedures.* In the absence of recognized testing procedures either in these standards or in 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). 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.

9. In § 3280.304, revise paragraph (b) to read as follows:

§ 3280.304 Materials.

* * * * *

(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—AA–30, Section 1, Fifth Edition—1986, Specifications and Guidelines for Aluminum Structures, Aluminum Design Manual, 1994.
Specification for Structural Steel Buildings—Allowable Stress Design and Plastic Design—AISC–S335, 1989.
Specification for the Design of Cold-Formed Steel Structural Members—AISI–SG 971–1996.
Design of Cold-Formed Stainless Steel Structural Members—ASCE 8, 1991.
Standard Specifications Load Tables and Weight Tables for Steel Joists and Joist Girders, SJI, 40th edition.
Structural Applications of Steel Cables for Buildings, ASCE 19, 1996.
Standard Specification for Strapping, Flat Steel and Seals—ASTM D3953, 1991.

Wood and Wood Products

Basic Hardboard—ANSI/AHA A135.4–1995.
Prefinished Hardboard Paneling—ANSI/AHA A135.5–1995.
Hardboard Siding—ANSI/AHA A135.6–1998.
American National Standard for Hardwood and Decorative Plywood—HPVA HP–1–1994.
Structural Design Guide for Hardwood Plywood Wall Panels—HPVA SG 96.
For wood products—Structural Glued Laminated Timber—ANSI/AITC A190.1–1992.
Voluntary Product Standard, Construction and Industrial Plywood—PS–1–99, V99, 1999.
APA Design/Construction Guide, Residential and Commercial—APA E30P–1996.
Design and Fabrication of All-Plywood Beams—APA–H 815E, Suppl. 5, 1995.
Plywood Design Specification—APA–Y 510S–1997.
Design and Fabrication of Glued Plywood-Lumber Beams—APA–S 812Q, Suppl. 2–1996.
Design and Fabrication of Plywood Curved Panels—APA–S 811N, Suppl. 1, 1995.
Design and Fabrication of Plywood Sandwich Panels—APA–U 814H, Suppl. 4, 1993.
Performance Standard for Wood-based Structural Use Panels— PS–2–96, 1996.
Design and Fabrication of Plywood Stressed-Skin Panels—APA–U 813L, Suppl. 3, 1996.
National Design Specifications for Wood Construction, 1997, AFPA.
Wood Structural Design Data, 1989, Revised 1992, AFPA.
Span Tables for Joists and Rafters—PS–20–70, 1993, AFPA.
Design Values for Joists and Rafters, American Softwood Lumber Standard Sizes, 1993, AFPA.
Mat-formed Wood Particleboard—ANSI A208.1–1999.
Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors, AAMA/NWWDA 101/I.S.2, 1997.
Standard Test Methods for Puncture and Stiffness of Paperboard, and Corrugated and Solid Fiberboard—ASTM D781, 1973.
Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials—ASTM D4442, 1999.
Standard Test Methods for Use and Calibration of Hand-Held Moisture Meters—ASTM D4444, 1992.

Other

Standard Specification for Gypsum Wallboard—ASTM C36, B–95.

Fasteners

Power Driven Staples, Nails, and Allied Fasteners for use in all Types of Building Construction—NER 272, 9/97.

Unclassified

Minimum Design Loads for Buildings and Other Structures—ASCE 7–1988.
Safety Performance Specifications and Methods of Test for Safety Glazing Materials Used in Building—ANSI Z97.1–1984.

* * * * *

10. In § 3280.305:

A. Add paragraph (c)(1)(ii)(C),

B. Add paragraphs (c)(3)(i)(A) through (C) following the table in paragraph (c)(3)(i);

C. Add paragraph (c)(3)(iv);

D. Revise paragraph (e);

E. Redesignate paragraphs (g)(3) through (g)(5) as paragraphs (g)(4) through (g)(6);

F. Add new paragraph (g)(3);

G. Redesignate paragraph (i)(l) as follows:

Old paragraph	New paragraph
(i)(1)	(j)
(i)(1)(i)	(j)(1)
(i)(1)(ii)	(j)(2)
(i)(1)(ii)(A)	(j)(2)(i)
(i)(1)(ii)(B)	(j)(2)(ii)

H. Reserve vacated paragraph (i)(1); and

I. Revise redesignated paragraph (j)(1) to read as follows:

§ 3280.305 Structural design requirements.

* * * * *

(c) * * *

(1) * * *

(ii) * * *

(C) One-piece metal roofing capable of resisting the design wind pressures in this Table for components and cladding (exterior roof coverings) is allowed to be used without structural sheathing provided it is tested using procedures that have been approved by HUD and meets all requirements of §§ 3280.303(c) and (g) and 3280.401.

* * * * *

(3) * * *

(i) * * *

(A) *North Roof Load Zone.* The following counties in each of the following states are deemed to be within the North Roof Load Zone:

Maine—Aroostook, Piscataquis, Somerset, Penobscot, Waldo, Knox, Hancock, Washington
Alaska—All Counties

(B) *Middle Roof Load Zone.* The following counties in each of the following states are deemed to be within the Middle Roof Load Zone:

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States	Counties			
South Dakota	Grant	Brookings	Hanson	Lincoln
	Codington	Miner	Minnehaha	Yankton
	Deuel	Lake	Hutchinson	Union
	Hamlin	Moody	Turner	Clay
	Kingsbury	McCook		
Minnesota	Koochiching	Stearns	Renville	Sibley
	Itasca	Swift	McLeod	Nicollet
	Hubbard	Kandiyohi	Carver	Blue Earth
	Cass	Meeker	Dakota	Martin
	Crow Wing	Wright	Goodhue	Watonwan
	Aitkin	Lac qui Parle	Wabasha	Brown
	St. Louis	Chippewa	Winona	Redwood
	Lake	Yellow Medicine	Fillmore	Lyon
	Cook	Mille Lacs	Mower	Lincoln
	Carlton	Kanabec	Olmsted	Pipestone
	Pine	Benton	Dodge	Murray
	Wadena	Isanti	Rice	Cottonwood
	Todd	Sherburne	Steele	Jackson
	Morrison	Anoka	Freeborn	Nobles
	Douglas	Chisapo	Faribault	Rock
	Grant	Washington	Waseca	St. Croix
	Stevens	Hennepin	Le Sueur	
	Pope	Ramsey	Scott	
Iowa	Hancock	Mitchell	Hamilton	Buena Vista
	Lyon	Howard	Webster	Cherokee
	Osceola	Chickasaw	Calhoun	Plymouth
	Dickinson	Butler	Sac	Sioux
	Emmet	Floyd	Ida	O'Brien
	Kossuth	Cerro Gordo	Humboldt	Clay
	Winnebago	Franklin	Pocahontas	Wright
	Worth	Hardin	Palo Alto	Crawford
Wisconsin	Douglas	Oconto	Pepin	Lincoln
	Bayfield	Menominee	Pierce	Oneida
	Ashland	Langlade	Dunn	Polk
	Iron	Marathon	Eau Claire	Burnett
	Vilas	Clark	Chippewa	Washburn
	Forest	Jackson	Rusk	Sawyer
	Florence	Trempealeau	Barron	Price
	Marinette	Buffalo	Taylor	Doon
Michigan	Houghton	Iron	Presque Isle	Wexford
	Baraga	Dickinson	Charlevoix	Benzie
	Marquette	Menominee	Montmorency	Grand Traverse
	Alger	Delta	Alpena	Kalkaska
	Luce	Schoolcraft	Alcona	Oscoda
	Chippewa	Mackinaw	Ogemaw	Otsego
	Keweenaw	Cheyboygan	Roscommon	Leelanau
	Ontonagon	Emmet	Missaukee	Antrim
	Gogebic			
New York	St. Lawrence	Herkimer	Onondaga	Genesee
	Franklin	Lewis	Madison	Orleans
	Clinton	Oswego	Cayuga	Niagara
	Essex	Jefferson	Seneca	Erie
	Hamilton	Oneida	Wayne	Wyoming
	Warren	Fulton	Ontario	Monroe
	Saratoga	Montgomery	Yates	
	Washington	Schenectady	Livingston	
Massachusetts	Essex			
Maine	Franklin	Kennebec	Lincoln	Cumberland
	Oxford	Androscoggin	Sagadahoc	York
Montana	All Counties			
Idaho	All Counties			
Colorado	All Counties			
Wyoming	All Counties			
Utah	All Counties			
Vermont	Franklin	Orleans	Caledonia	Addison
	Grand Isle	Essex	Washington	Rutland
	Lamoille	Chittendon	Orange	Windsor
New Hampshire	Coos	Belknap	Sullivan	Hillsborough
	Grafton	Strafford	Rockingham	Cheshire
	Carroll	Merrimack		

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(C) *South Roof Load Zone.* The states and counties that are not listed for the Middle Roof Load Zone in paragraph (c)(3)(i)(A) of this section, or the North Roof Load Zone in paragraph (c)(3)(i)(B) of this section are deemed to be within the South Roof Load Zone.

* * * * *

(iv) Skylights shall be required to withstand roof loads as specified in paragraphs (c)(3)(i) or (c)(3)(ii) of this section. Skylights shall be listed and tested in accordance with AAMA 1600/I.S.7–1999, Voluntary Specifications for Skylights.

* * * * *

(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 in order to resist wind overturning, uplift, and sliding and to provide continuous load paths for these forces to the foundation or anchorage system. The number and type of fasteners used shall be capable of transferring all forces between elements being joined.

(2) For Wind Zone II and Wind Zone III, roof framing members shall be securely fastened at the vertical bearing points to resist design overturning, uplift and sliding forces. When engineered connectors are not installed, roof framing members shall be secured at the vertical bearing points to wall framing members (studs) and wall framing members (studs) shall be secured to floor framing members with 0.016 inch base metal, minimum steel strapping or engineered connectors, or by a combination of with 0.016 inch base metal, minimum steel strapping or engineered connectors, and structural-rated wall sheathing that overlaps the roof and floor system. Steel strapping or engineered connectors shall be installed at a maximum spacing of 24 inch on center in Wind Zone II and 16 inch on center in Wind Zone III. Exception: Where substantiated by structural analysis, the 0.016 inch base metal minimum steel strapping or engineered connectors shall be permitted to be omitted when the structural rated sheathing that overlaps either the roof or floor system is capable of sustaining the applied loads.

* * * * *

(g) * * *

(3) Wood panel products used as floor or subfloor materials on the exterior of the home, such as in recessed entry ways, shall be rated for exterior exposure and shall be protected from moisture by sealing or applying nonabsorbent overlay with water resistant adhesive.

* * * * *

(j) *Welded connections.* (1) 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–S335, 1989, the Specification for the Design of Cold-Formed Steel Structural Members, AISI–SG–971, 1996, and the Stainless Steel Cold-Formed Structural Design Manual, ASCE 8, 1991.

* * * * *

11. In § 3280.306, revise paragraph (b) to read as follows:

§ 3280.306 Windstorm protection.

* * * * *

(b) *Contents of instructions.* The manufacturer shall provide printed instructions with each manufactured home that specify the location and required capacity of stabilizing devices on which the design is based. In addition to the printed instructions, each column support pier location required along the marriage line(s) of multisection manufactured homes shall be identified by paint, label, decal, stencil, or other acceptable method at each pier location. Such location identifications shall be visible after the home is installed. The manufacturer shall provide drawings and specifications, certified by a registered professional engineer or architect, that indicate at least one acceptable system of anchoring, including the details or 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.

* * * * *

12. In § 3280.401, revise paragraphs (a) and (b) to read as follows:

§ 3280.401 Structural load tests.

* * * * *

(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 ¼ 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) that is greater than the limits set in § 3280.305(d), rupture, fracture, or excessive yielding. Design live load deflection criteria shall not apply when the structural assembly being evaluated does not include structural framing members. 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 subassemblies qualifying under this test shall be subject to a continuing qualification testing program acceptable to HUD.

(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 ¼ 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. Assembly failure shall be considered as design live load deflection greater than the limits set in § 3280.305(d), rupture, fracture, or excessive yielding. Design live load deflection criteria shall not apply when the structural assembly being evaluated does not include structural framing members. Assemblies to be tested shall be representative of average quality or 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 subassemblies qualifying under this test shall be subject to a periodic qualification testing program acceptable to HUD.

13. Revise § 3280.402 to read as follows:

§ 3280.402 Test procedure for roof trusses.

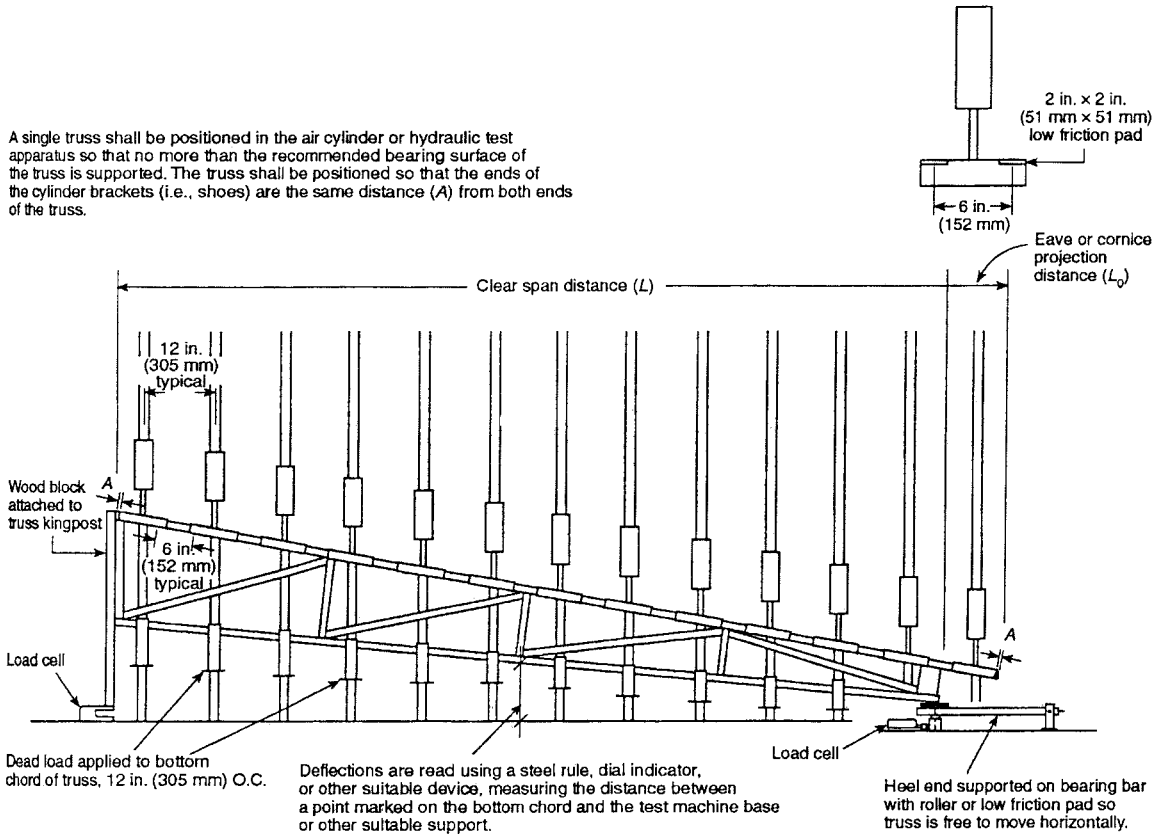
(a) *Roof load tests.* The following is the roof truss test procedure for vertical loading condition. Where roof trusses act as support for other members, have eave or cornice projections, or support

concentrated loads, roof trusses shall be tested for those conditions.

(b) *General.* Trusses shall be permitted to be tested in a truss test fixture that replicates the design loads, and actual support points, and does not restrain horizontal movement. When tested singly or in groups of two or more trusses, trusses shall be mounted on supports and positioned as intended to be installed in the manufactured home to give the required clear span distance (L) and eave or cornice distance (Lo), if applicable, as specified in the design. Truss tests shall be performed on a minimum of three trusses to evaluate the design.

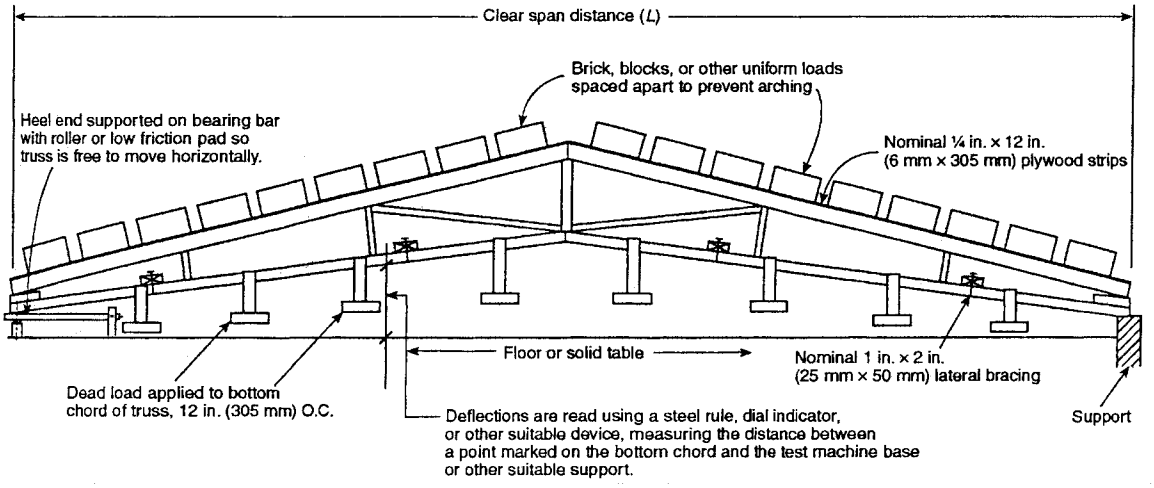
(1) When trusses are tested singly, trusses shall be positioned in a test fixture with supports properly located and have the roof loads evenly applied. See Figure 3280.402(b)(1).

Figure 3280.402(b)(1) – Test fixture for testing trusses singly.



(2) When tested in groups of two or more, the top chords shall be permitted to be sheathed with nominal ¼ inch x 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 shall be separated by at least ⅛ inch. The plywood strips shall be nailed with 4d nails or equivalent staples no closer than 8 inch (203 mm) on center along the top chord. The bottom chords of the adjacent trusses shall be permitted to be one of the following: (1) Unbraced; (2) Laterally braced together (not cross-braced) with 1 inch x 2 inch stripping no closer than 24 inch on center, nailed with only one 6d nail at each truss. See Figure 3280.402(b)(2).

Figure 3280.402(b)(2) – Test setup for roof trusses tested in groups of two or more.



(c) *Measuring and loading methods.* Deflections of each truss shall be measured relative to a fixed reference datum. Deflections shall be measured at the free end of an eave or cornice projection and at as many bottom chord panel points as necessary to obtain an accurate representation of the deflected truss or trusses but shall be measured at least at the truss midspan, at each panel point, and at midspan between each panel point. Deflections shall be read and recorded to the nearest 1/32 inch. Dead load shall be applied to the top and bottom chord and live load applied to the top chord through a suitable hydraulic, pneumatic, or mechanical system or weights to simulate design loads. Load unit weights for uniformly distributed top chord loads shall be separated so that arch action does not occur and spaced not more than 12 inch on center so as to simulate uniform loading. Bottom chord loading shall be spaced as uniformly as practical. Truss gravity loads shall be calculated based on the overall truss length (horizontal projection) including eave or cornice projections.

(d) *General test procedures.* General test procedures include the following methods:

(1) *Dead load.* Measure and record initial elevation of the truss or trusses in the test position at no load. Apply dead loads to the top and bottom chord of the truss that are representative of the weights of materials to be supported by the truss. The actual ceiling/roof assembly dead loads shall be used with a minimum of 4 psf on the top chord and 2 psf on the bottom chord. Greater dead loads shall be applied to the top and bottom chords if required, to represent the actual loads. Dead loads to be applied to the truss test assembly shall be permitted to include only the weights of materials supported by the truss and not the weight of the truss itself. However, readings from load cells (when used) on which the test truss rests shall reflect the sum of the applied load plus the weight of the truss. Apply dead loads and hold for five minutes. Measure and record the deflections.

(2) *Live Load.* Maintaining the dead loads, apply live load to the top chord in approximate ¼ live load increments until dead load plus 1.25 times the live load is reached. Measure and record the deflections at a minimum of one minute after each live load increment has been applied and five minutes after full live load has been reached. Apply incremental loads at a uniform rate such that approximately one-half hour is required to reach full design live load.

(3) *Recovery phase.* Remove the total live load (1.25 times the roof live load). Measure and record the deflections five minutes after the total live load has been removed.

(4) *Overload phase.* Additional loading shall then be applied continuously until the dead load plus 2.5 times the design live load is reached. This overload condition shall be maintained for five minutes.

(5) *Acceptance criteria.* The truss design shall be considered to have passed if all of the following conditions are met:

(i) No load to dead load deflection shall be less than L/480 for simply supported clear spans and less than Lo/180 for eave and cornice projections; and

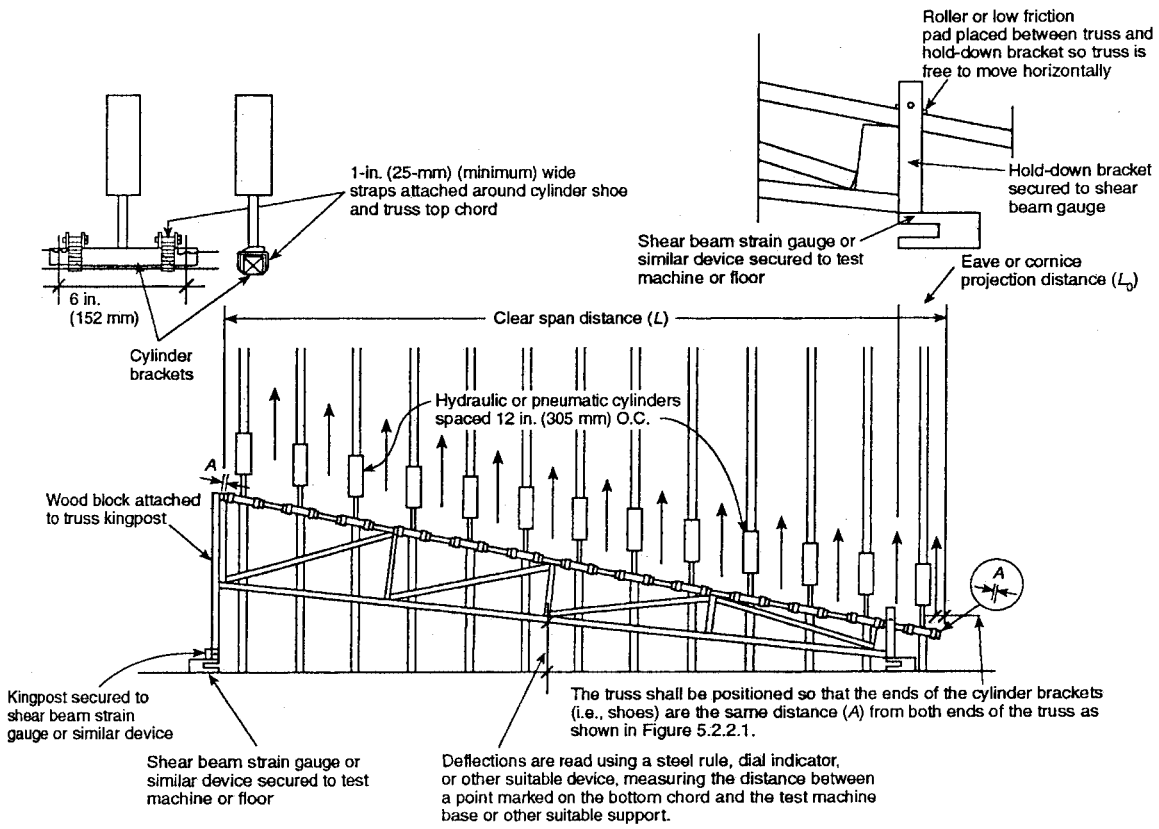
(ii) Dead load to design live load deflections shall be less than L/180 for simply supported clear spans and less than Lo/90 for eave and cornice projections; and

(iii) The truss shall recover to at least L/480 for simply supported clear spans and Lo/180 for eave and cornice projections within five minutes after the total live load has been removed; and

(iv) The truss shall maintain the overload condition for five minutes without rupture or fracture.

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

(1)(i) Place the truss in the test fixture and position it as intended to be installed in the manufactured home. See Figure 3280.402(e)(1).



(ii) Position the load measurement devices to register the wind uplift loads that will be applied to the top chord of the truss. The uplift loads shall be applied through tension devices not wider than 1 inch and spaced not greater than 6 inches on center so as to simulate uniform loading. Gravity and wind uplift load tests may be performed on the same truss in this single set-up mode. Measure and record initial elevation of the bottom chord of the truss in the test position at the midspan of the truss, at each panel point, and midspan between each panel point as well as at the end of the eave or cornice projections greater than 12 inches. Eave or cornice projection loads are applied separately for eaves or cornice projections greater than 12 inches. For eave or cornice projections greater than 12 inches (305 mm), the additional required load shall be applied to the eave simultaneously with the main body load. For eave or cornice projections 12 inches or less, add the additional required load to the main body load and apply it to the entire top chord.

(2) Apply the uplift load to the top chord of the truss. For Wind Zone I, the net uplift load for the clear span of the truss is 9 psf and 22.5 psf for the eave or cornice projections of the truss. For Wind Zones II and III, the net uplift load for the clear span and eave or cornice projections shall be determined by subtracting the minimum dead load from the uplift load provided in the Table of Design Wind Pressure in § 3280.305(c)(1)(ii)(B). Measure and record the deflection 5 minutes after the net uplift load has been applied. Design load deflection shall be less than L/180 for simply supported clear span and less than Lo/90 for eave or cornice projections.

(3) Continue to load the truss to 2.5 times the net uplift load. Maintain the full load for 1 minute and inspect the truss for rupture or fracture.

(4) The uplift load tests shall be performed on a minimum of three single trusses to evaluate the truss design.

(f) *Follow up testing.* Follow up testing procedures shall include the following:

(1) Production trusses qualifying under these test procedures shall be subject to a continuing witnessed independent third party or an approved testing program as specified in § 3280.402(f)(3). Manufacturers of listed or labeled trusses shall follow an in-house quality control program approved by an independent third party as specified in § 3280.402(g). Home manufacturers producing trusses which are not listed or labeled, for their own use, shall be subject to a follow-up testing program as specified in § 3280.402(f)(3) and a truss certification program as specified in § 3280.402(g).

(2) Truss designs that are qualified but not in production are not subject to follow-up testing until produced. When the truss design is brought into production a follow up test is to be performed if the truss design has been out of production for more than six months.

(3) The frequency of truss manufacturer's quality control follow-up testing for trusses shall be one test in 4000 trusses or once every 6 months, whichever is more frequent, for every truss design produced.

(g) *Truss certification program.* The truss certification program shall include, at a minimum, procedures for quality of materials, workmanship and manufacturing tolerances, description and calibration of test equipment, truss retesting criteria, and procedures in case of non-complying results.

14. In § 3280.403, revise paragraph (b), paragraph (d)(2), and paragraph (e) to read as follows:

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

* * * * *

(b) *Standard.* All primary windows and sliding glass doors shall comply with AAMA Standard 1701.2–1995, Primary Window and Sliding Glass Door: Voluntary Standard for Utilization in Manufactured Housing, except 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).

* * * * *

(d) * * *

(2) Sealed insulating glass, where used, shall meet all performance requirements for Class C in accordance with ASTM E–774–97, Standard Specification for Sealed Insulating Glass Units. The sealing system shall be qualified in accordance with ASTM E–773–97 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 1701.2–1995. 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 Z34.1–1993, ''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 1701.2–1995. Further, such agency shall inspect the product manufacturer's facility at least twice per year.

* * * * *

15. In § 3280.404, revise paragraph (b) to read as follows:

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

* * * * *

(b) *Performance.* Egress windows including auxiliary frame and seals, if any, shall meet all requirements of AAMA Standard 1701.2–1995, 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 the exterior and interior pressure tests for components and cladding shall be conducted at the design wind loads required by § 3280.305(c)(1).

* * * * *

16. In § 3280.405, revise paragraphs (b) and (e) to read as follows:

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

* * * * *

(b) *Performance requirements.* The design and construction of exterior door units shall meet all requirements of AAMA 1702.2–1995, Swinging Exterior Passage Doors Voluntary Standard for Utilization in Manufactured Housing.

* * * * *

(e) *Certification.* All swinging exterior doors to be installed in manufactured homes shall be certified as complying with AAMA 1702.2–1995, Swinging Exterior Passage Doors Voluntary Standard for Utilization in Manufactured Housing.

(1) All such doors shall show evidence of certification by affixing a quality certification label to the product in accordance with ANSI Z34.1–1993, 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 1702.2–1995, Swinging Exterior Passage Doors Voluntary Standard for Utilization in Manufactured Housing.

* * * * *

17. In § 3280.406, revise the introductory text in paragraph (b) to read as follows:

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

* * * * *

(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–1333–96, with the following exceptions:

* * * * *

18. In § 3280.504, revise paragraph (a)(1) and paragraph (b) to read as follows:

§ 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 permeance of not greater than 1 perm (as measured by ASTM E–96–95 Standard Test Methods for Water Vapor Transmission of Materials) installed on the living space side of the roof cavity.

* * * * *

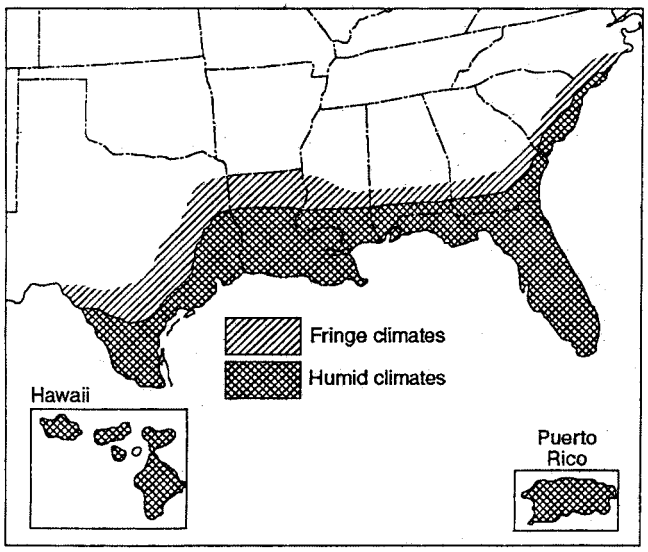
(b) *Exterior walls.* (1) Exterior walls shall have a vapor barrier no greater than 1 perm (dry cup method) installed on the living space side of the wall; or

(2) Unventilated wall cavities shall have an external covering and/or sheathing that 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 shall be permitted to be computed using the following formula: P total = (1/[(1/P1) + (1/P2)]), where P1 and P2 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; or

(4) Homes manufactured to be sited in ''humid climates'' or ''fringe climates'' as shown on the Humid and Fringe Climate Map in this paragraph shall be permitted to have a vapor retarder specified in paragraph (b)(1) of this section installed on the exterior side of the wall insulation or be constructed with an external covering and sheathing with a combined permeance of not greater than 1.0 perm, provided the interior finish and interior wall panel materials have a combined permeance of not less than 5.0 perm.

Humid and Fringe Climate Map



(5) The following areas of local governments (counties or similar areas, unless otherwise specified), listed by State are deemed to be within the humid and fringe climate areas shown on the Humid and Fringe Climate Map in paragraph (b)(4) of this section, and the vapor retarder specified in paragraph (b)(4) of this section may be applied to homes built to be sited within these jurisdictions:

Alabama

Baldwin, Barbour, Bullock, Bulter, Chootaw, Clarke, Cofee, Conecuh, Covington, Crenshaw, Dale, Escambia, Geneva, Henry, Houston, Lowndes, Marengo, Mobile, Monroe, Montgomery, Pike, Washington, Wilcox.

Florida

All counties and locations within the State of Florida.

Georgia

Appling, Atkinson, Bacon, Baker, Ben Hill, Berrien, Brantley, Brooks, Bryan, Calhoun, Camden, Charlton, Chatham, Clay, Clinch, Coffee, Colquitt, Cook, Crisp, Decatur, Dougherty, Early, Echols, Effingham, Evans, Glynn, Wayne, Grady, Irwin, Jeff Davis, Lanier, Lee, Liberty, Long, Lowndes, McIntosh, Miller, Mitchell, Pierce, Quitman, Randolph, Seminole, Tattnall, Terrell, Thomas, Tift, Turner, Ware, Worth.

Louisiana

All counties and locations within the State of Louisiana.

Mississippi

Adams, Amite, Clairbourne, Clarke, Copiah, Covington, Forrest, Franklin, George, Greene, Hancock, Harrison, Hinds, Issaquena, Jackson, Jasper, Jefferson, Jefferson Davis, Jones, Lamar, Lawrence, Lincoln, Pearl River, Perry, Pike, Rankin, Simpson, Smith, Stone, Walthall, Warren, Wayne, Wilkinson.

North Carolina

Brunswick, Carteret, Columbus, New Hanover, Onslow, Pender.

South Carolina

Jasper, Beaufort, Colleton, Dorchester, Charleston, Berkeley, Georgetown, Horry.

Texas

Anderson, Angelina, Aransas, Atacosa, Austin, Bastrop, Bee, Bexar, Brazoria, Brazos, Brooks, Burleson, Caldwell, Calhoun, Cameron, Camp, Cass, Chambers, Cherokee, Colorado, Comal, De Witt, Dimmit, Duval, Falls, Fayette, Fort Bend, Franklin, Freestone, Frio, Gavelston, Goliad, Gonzales, Gregg, Grimes, Guadalupe, Hardin, Harris, Harrison, Hays, Henderson, Hidalgo, Hopkins, Houston, Jackson, Jasper, Jefferson, Jim Hogg, Jim Wells, Karnes, Kaufman, Kennedy, Kinney, Kleberg, La Salle, Lavaca, Lee, Leon, Liberty, Limestone, Live Oak, Madison, Marion, Matagorda, Maverick, McMullen, Medina, Milam, Montgomery, Morris, Nacogdoches, Navarro, Newton, Nueces, Orange, Panola, Polk, Rains, Refugion, Robertson, Rusk, Sabine, San Augustine, San Jacinto, San Patricio, Shelby, Smith, Starr, Titus, Travis, Trinity, Tyler, Upshur, Uvalde, Val Verde, Van Zandt, Victoria, Walker, Waller, Washington, Webb, Wharton, Willacy, Williamson, Wilson, Wood, Zapata, Zavala.

* * * * *

19. In § 3280.508, revise paragraphs (a), (b), and (e) to read as follows:

§ 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 1997 ASHRAE Handbook of Fundamentals, chapters 22 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 1997 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.

* * * * *

(e) U values for any glazing (*e.g.*, windows, skylights, and the glazed portions of any door) shall be based on tests using [add edition date] AAMA 1503.1–1988, Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors, and Glazed Wall Sections or the National Fenestration Rating Council 100 (1997 edition), Procedure for Determining Fenestration Product Thermal Properties. In the absence of tests, manufacturers shall use the residential window U values contained in Chapter 29, Table 5 of the 1997

ASHRAE Handbook of Fundamentals. In the event that the classification of the window type is indeterminate, the manufacturer shall use the classification that gives the higher U value. Where a composite of materials from two different product types are used, the product shall be assigned the higher U value. For the purpose of calculating U o values, storm windows shall be treated as an additional pane.

* * * * *

20. In § 3280.510, add paragraph (d) to read as follows:

§ 3280.510 Heat loss certificate.

* * * * *

(d) The following additional statement shall be provided on the heating certificate and data plate required by § 3280.5 when the home is built with a vapor retarder of not greater than 1 perm (dry cup method) on the exterior side of the insulation: ''This home is designed and constructed to be sited only in humid or fringe climate regions as shown on the Humid and Fringe Climate Map.'' A reproduction of the following Humid and Fringe Climate Map is to be provided on the heating certificate and data plate. The map shall be not less than 3½ inch x 2¼ inch in size and may be combined with the Uo Value Zone Map for Manufactured Housing in § 3280.506.

21. In § 3280.604, revise paragraph (b)(2) and the table following paragraph (b)(2) to read as follows:

§ 3280.604 Materials.

* * * * *

(b) * * *

(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 NSF 61–1997, Drinking Water System Components—Health Effects.

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.
Performance Requirements for Air Admittance Valves for Plumbing Drainage Systems, Fixture and Branch Devices—ANSI/ASSE 1051–98.
Drinking Water System Components—Health Effects—NSF 61–1997.

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.
Water Heater Relief Valve Drain Tubes—ASME/ANSI A112.4.1–1993.
Flexible Water Connectors—ASME/ANSI A112.18.6–1999.
Performance Requirements for Backflow Protection Devices and Systems in Plumbing Fixture Fittings—ASME/ANSI A112.18.3–1996.
Non-Vitreous Ceramic Plumbing Fixtures—ASME/ANSI A112.19.9M–1998.
Dual Flush Devices for Water Closets—ASME/ANSI A119.19.10–1994
Deck Mounted Bath/Shower Transfer Valves with Integral BackFlow Protection—ASME/ANSI A112.18.7–1999.
Plastic Fittings for Connecting Water Closets to the Sanitary Drainage System—ASME/ANSI A112.4.3–1999.
Hydraulic Requirements for Water Closets and Urinals, A112.19.6–1995

Plumbing Fixture Fittings—ASME/ANSI A112.18.1M–1996.
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.
ANSI Z124.5, Plastic Toilet (Water Closet) Seats (1997).
ANSI Z124.7, Prefabricated Plastic Spa Shells (1997).
ANSI Z124.8, Plastic Bathtub Liners (1990).
ANSI Z124.9, Plastic Urinal Fixtures (1994).
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.
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.

21. In § 3280.607, add new paragraph (a)(6), redesignate paragraphs (b)(2)(iii) through (v) as paragraphs (b)(2)(iv) through (vi), respectively, add new paragraph (b)(2)(iii), and revise paragraph (c)(6)(iv) to read as follows:

§ 3280.607 Plumbing fixtures.

(a) * * *

(6) *Water conservation.* All lavatory faucets, showerheads, and sink faucets shall not exceed a flow of 2.5 gallons per minute (gpm).

(b) * * *

(2) * * *

(iii) All water closets shall be low consumption (1.6 gallons per flush (gpf)) closets.

* * * * *

(c) * * *

(6) * * *

(iv) *Electrical.* Refer to the National Electrical Code NFPA 70–1996, Section 680G.

22. In § 3280.703, revise the table following the introductory text to read as follows:

§ 3280.703 Minimum standards.

* * * * *

Appliances

Standard for Safety, Heating and Cooling Equipment, UL 1995, 1995 edition.
Liquid Fuel-Burning Heating Appliances for Manufactured Homes and Recreational Vehicle—UL 307A–1995, with revision September 98.
Fixed and Location-Dedicated Electric Room Heaters—UL 2021, 1997 with Revision 7/98.
Electric Baseboard Heating Equipment—UL 1042, 1994 with revision 9/98.
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–1995, with revision September 98.
Gas Clothes Dryers Vol. 1, Type 1 Clothes Dryers—ANSI Z21.5.1–1995.
Gas Fired Absorption Summer Air Conditioning Appliances—ANSI Z21.40.1–1996, with Addendum Z21.40 1a–1997.
Gas-Fired Central Furnaces—ANSI Z21.47–1995, with Addenda Z21.47a–1995 and Z21.47b–1997.
Household Cooking Gas Appliances ANSI Z21.1–1996, with Addenda Z 21.1a–1997 and Z 21.1b–1998.
Refrigerators Using Gas Fuel—ANSI Z21.19–1990, with Addendum ANSI Z 21.19a–1992 and Z 21.19b–1995.
Gas Water Heaters Vol. 1, Storage Water Heaters With Input Ratings of 75,000 BTU per hour or Less—ANSI Z21.10.1–1998.
Household Electric Storage Tank Water Heaters—UL 174–1996, With Revision November 1997.
Gas Piping Systems Using Corrugated Stainless Steel Tubing—LC 1–1997.

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 A539–1990.
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, A–95.
Metal Connectors for Gas Appliances—ANSI Z21.24–1997.
Manually Operated Gas Valves for Appliances, Appliance Connector Valves and Hose End Valves—ANSI Z21.15–1997.
Standard for Gas Supply Connectors for Manufactured Homes—IAPMO TSC 9–1997.
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.

Miscellaneous

Factory-Made Air Ducts and Connectors—UL 181, 1998.
UL 181A, Standard for Safety Closure Systems for use with Rigid Air Ducts and Air Connectors, 1994, with revision 12/98.
UL 181B, Standard for Safety Closure Systems for use with Flexible Air Ducts and Air Connectors, 1995, with revision 12/98.
Tube Fittings for Flammable and Combustible Fluids, Refrigeration Service, and Marine Use—UL 109–1997.
Pigtails and Flexible Hose Connectors for LP-Gas—UL 569, 1996 with revision 9/98.
Roof Jacks for Manufactured Homes and Recreational Vehicles—UL 311, 1994 with revision 9/98.
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 Z21.20–1997, with Addendum Z 21.20a–1998.
Automatic Valves for Gas Appliances—ANSI Z21.21–1995, with Addendum Z 21.21a–1998.
Gas Appliance Thermostats—ANSI Z21.23–1993, with Addenda Z 21.23a–1994 and Z 21.23b–1997.
Gas Vents—UL 441, 1996 with revision 10/97.
Standard for the Installation of Oil-Burning Equipment, NFPA 31, 1997 Edition.
National Fuel Gas Code—NFPA 54–1996/ANSI Z223.1.
Warm Air Heating and Air Conditioning Systems, NFPA 90B, 1996 Edition.
Standard for the Storage and Handling of Liquefied Petroleum Gases, NFPA 58–1995 Edition.
Flares for Tubing—SAE–J533b–1992.

Chimneys, Factory-Built Residential Type and Building Heating Appliance—UL 103, 1995, with revision 2/96.
Factory-Built Fireplaces—UL 127–1996 with revision 6/98.
Room Heaters Solid-Fuel Type—UL 1482, 1996 with revision 9/98.
Standard for Safety Fireplace Stoves—UL 737, 1996 with revision 6/98.
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.

23. In § 3280.704, revise paragraph (b)(5)(i) to read as follows:

§ 3280.704 Fuel supply systems.

* * * * *

(b) * * *

(5) *LP-gas safety devices.* (i) DOT containers shall be provided with safety relief devices as required by the regulation of the U.S. Department of Transportation. ASME containers shall be provided with relief valves in accordance with subsection 221 of NFPA 58–1995, Standard for the Storage and Handling Liquefied Petroleum Gases. Safety relief valves shall have direct communication with the vapor space of the vessel.

* * * * *

24. In § 3280.705, revise paragraphs (b)(3), (b)(4), (c)(2), (l)(1), (l)(2)(ii), and (l)(3) to read as follows:

§ 3280.705 Gas piping systems.

* * * * *

(b) * * *

(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 Service, ASTM 280–1995. Copper tubing shall be internally tinned.

(4) Steel tubing shall have a minimum wall thickness of 0.032 inch for tubing of ½ inch diameter and smaller and 0.049 inch for diameters ½ inch and larger. Steel tubing shall be in accordance with ASTM Standard Specification for Electric-Resistance-Welded Coiled Steel Tubing for Gas and Fuel Oil Lines, ASTM 539–1990, and shall be externally corrosion protected.

(c) * * *

(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 non-displaceable rotor type conforming to ANSI Z21.15–1997, 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.

* * * * *

(l) * * *

(1) A listed LP-Gas flexible connection conforming to UL 569–1998, Standard for Pigtails and Flexible Hose Connectors for LP Gas, or equal shall be supplied when LP-Gas cylinders(s) and regulator(s) are supplied.

(2) * * *

(ii) The outlet shall be provided with an approved quick-disconnect device, which shall be designed to provide 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 Z21.15–1997, 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.

* * * * *

(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 servicing of the appliance and removal of its components. The shutoff valve shall be located within 6 feet of any cooking appliance and within 3 feet of any other appliance. A shutoff valve may serve more than one appliance if located as required above. Shutoff valve shall be of the non-displaceable rotor type and conform to ANSI Z21.15–1997, Manually Operated Gas Valves.

* * * * *

25. In § 3280.706, revise paragraph (b)(3) to read as follows:

§ 3280.706 Oil piping systems.

* * * * *

(b) * * *

(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 ASTM B280–1995, Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service.

* * * * *

26. In § 3280.707, revise paragraph (f) to read as follows:

§ 3280.707 Heat producing appliances.

* * * * *

(f) *Oil-fired heating equipment.* All oil-fired heating equipment shall conform to liquid fuel-burning heating appliances for UL 307A–1995, with revision 9/98, Liquid Fuel-Burning Heating Appliances for Mobile Homes and Recreational Vehicles, and be installed in accordance with Standard for the Installation of Oil Burning Equipment, NFPA 31–1997. 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.

27. In § 3280.709, add paragraph (h) to read as follows:

§ 3280.709 Installation of appliances.

* * * * *

(h) A corrosion resistant water drip collection and drain pan shall be installed under each water heater that will allow water leaking from the water heater to drain to the exterior of the manufactured homes, or a drain.

28. In § 3280.714, revise paragraph (a)(2) to read as follows:

§ 3280.714 Appliance cooling.

(a) * * *

(2) Gas fired absorption air conditioners shall be listed or certified in accordance with ANSI Z21.40.1–1996, Gas Fired Absorption Summer Air Conditioning Appliance, and certified by a nationally recognized testing agency capable of providing follow-up service.

* * * * *

29. In § 3280.715, revise paragraph (c), the introductory text of paragraph (e), and paragraph (e)(1) to read as follows:

§ 3280.715 Circulating air systems.

* * * * *

(c) *Joints and seams.* Joints and seams of sheet metal and factory-made flexible ducts including trunks, branches, risers, crossover ducts, and crossover duct plenums shall be mechanically secured and made substantially airtight. Slip joints in sheet metal ducts shall have a lap of at least 1 inch and shall be mechanically fastened. Tapes or caulking compounds shall be permitted to be used for sealing mechanically secure joints. Sealants and tapes shall be applied only to surfaces that are dry and dust-, dirt-, oil-, and grease-free. Tapes and mastic closure systems for use with factory-made rigid fiberglass air ducts and air connectors shall be listed in accordance with UL Standard 181A–1998. Tapes and mastic closure systems

for use with factory-made flexible air ducts and air connectors shall be listed in accordance with UL Standard 181B–1998.

* * * * *

(e) *Registers and grills.* Fittings connecting the registers and grills to the duct system shall be constructed of metal or material which complies with the requirements of Class 1 or 2 ducts under UL 181–1998, Factory Made Air Ducts and Connectors. Air supply terminal devices (registers) when installed in kitchen, bedrooms and bathrooms shall be equipped with adjustable closeable dampers. Registers or grills 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 UL 94–1996, Test for Flammability of Plastic Materials for Parts in Devices and Appliances.

* * * * *

30. In § 3280.801, revise paragraphs (a) and (b) to read as follows:

§ 3280.801 Scope.

(a) Subpart I of this standard and part B of Article 550 of the National Electrical Code (NFPA No. 70–1996) 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. 70–1996) 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.

* * * * *

31. In § 3280.803, revise the last sentence of the caption following the illustration in paragraph (g), paragraph (k)(1), the introductory text of paragraph (k)(3), and paragraphs (k)(3)(ii) and (k)(3)(iii) to read as follows:

§ 3280.803 Power supply.

* * * * *

(g) * * *

* * * 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/NEMA—WD–6—Wiring Devices—Dimensional Requirements, 1997).

* * * * *

(k) * * *

(1) One mast weatherhead installation installed in accordance with Article 230 of the National Electrical Code NFPA No. 70–1996 containing four continuous insulated, color-coded, feeder conductors, one of which shall be an equipment grounding conductor; or

* * * * *

(3) Service equipment installed on the manufactured home in accordance with Article 230 of the National Electrical Code NFPA No. 70–1996; and

* * * * *

(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. 70–1996. 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. 70–1996.

* * * * *

32. In § 3280.804, revise paragraph (a) and the first sentence of paragraph (k) to read as follows:

§ 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 NFPA 70–1996, National Electrical Code, concerning identification of each disconnecting means and each service, feeder, or branch circuit at the point where it originated and the type marking needed.)

* * * * *

(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. 70–1996.* * *

* * * * *

33. In § 3280.805, revise paragraph (a)(3)(iv) to read as follows:

§ 3280.805 Branch circuits required.

(a) * * *

(3) * * *

(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. 70–1996).

* * * * *

34. In § 3280.806, revise paragraph (a)(2) and paragraph (d)(9) to read as follows:

§ 3280.806 Receptacle outlets.

(a) * * *

(2) Installed according to section 210–7 of the National Electrical Code (NFPA No. 70–1996).

* * * * *

(d) * * *

(9) At least one wall receptacle outlet shall be installed in bathrooms within 36 inches (914 mm) of the outside edge of each basin. The receptacle outlet shall be located on a wall that is adjacent to the basin location. This receptacle shall be in addition to any receptacle that is part of a lighting fixture or appliance. The receptacle shall not be enclosed within a bathroom cabinet or vanity.

* * * * *

35. In § 3280.807, revise paragraph (c) to read as follows:

§ 3280.807 Fixtures and appliances.

* * * * *

(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 Article 410–4(d) of the National Electrical Code NFPA No. 70–1996.

* * * * *

36. In § 3280.808, revise paragraphs (a), (m), (o), and (q), remove paragraph (r), and redesignate paragraph (s) as paragraph (r), to read as follows:

§ 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. 70–1996) shall be used in manufactured homes.

* * * * *

(m) Outlet boxes of dimensions less than those required in Table 370–16(a) of the National Electrical Code (NFPA No. 70–1996) shall be permitted provided the box has been tested and approved for the purpose.

* * * * *

(o) Outlet boxes shall fit closely to openings in combustible walls and ceilings and shall be flush with the finish surface or project therefrom. In walls and ceilings of noncombustible material, outlet boxes and fittings shall be installed so that the front edge of the box or fitting will not be set back from the finished surface more than ¼ inch. Plaster, drywall, or plasterboard

surfaces that are broken or incomplete shall be repaired so that there will be no gaps or open spaces greater than ⅛ inch at the edge of the box or fitting.

* * * * *

(q) A substantial brace for securing a box, fitting or cabinet shall be as described in the National Electrical Code, NFPA 70–1996 Article 370–23(b), 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.

* * * * *

37. In § 3280.811, revise the introductory text of paragraph (b) to read as follows:

§ 3280.811 Calculations.

* * * * *

(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. 70–1996). The loads identified in the table as ''other load'' and as ''Remainder of other load'' shall include the following:

* * * * *

Dated: November 2, 2004.

John C. Weicher,

Assistant Secretary for Housing—Federal Housing Commissioner.

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