

**DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT**

**24 CFR Parts 3280, 3282, 3285, and 3286**

[Docket No. FR-6233-P-01]

RIN 2502-AJ58

**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 the fourth and fifth group of recommendations made to HUD by the Manufactured Housing Consensus Committee (MHCC). This rule would also amend the Manufactured Home Procedural and Enforcement Regulations, the Model Manufactured Home Installation Standards and the Manufactured Home Installation Program regulations. The National Manufactured Housing Construction and Safety Standards Act of 1974 (the Act), as amended by the Manufactured Housing Improvement Act of 2000, 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 fourth and fifth groups of recommendations to improve various aspects of the Construction and Safety Standards. HUD has reviewed those proposals and has made a number of editorial revisions to them. These recommendations are being published to provide notice of the proposed revisions and an opportunity for public comment.

**DATES:** *Comment Due Date:* September 19, 2022.

**ADDRESSES:** Interested persons are invited to submit comments regarding this rule to the Office of General Counsel, Regulations Division, Department of Housing and Urban Development, 451 7th Street SW, Room 10276, Washington, DC 20410-0500. All submissions should refer to the above docket number and title. Submission of public comments may be carried out by hard copy or electronic submission.

**1. Submission of Hard Copy Comments.** Comments may be submitted by mail or hand delivery. Each commenter submitting hard copy comments, by mail or hand delivery, should submit comments to the address

above, addressed to the Regulations Division. Due to security measures at all federal agencies, submission of comments by mail often results in delayed delivery. To ensure timely receipt of comments, HUD recommends that any comments submitted by mail be submitted at least 2 weeks in advance of the public comment deadline. All hard copy comments received by mail or hand delivery are a part of the public record and will be posted to [www.regulations.gov](http://www.regulations.gov) without change.

**2. Electronic Submission of Comments.** Interested persons may submit comments electronically through the Federal eRulemaking Portal at [www.regulations.gov](http://www.regulations.gov). HUD strongly encourages commenters to submit comments electronically. Electronic submission of comments allows the commenter maximum time to prepare and submit a comment, ensures timely receipt by HUD, and enables HUD to make them immediately available to the public. Comments submitted electronically through the [www.regulations.gov](http://www.regulations.gov) website can be viewed by other commenters and interested members of the public. Commenters should follow the instructions provided on that site to submit comments electronically.

**Note:** To receive consideration as public comments, comments must be submitted through one of the two methods specified above. Again, all submissions must refer to the docket number and title of the rule.

**3. No Facsimile Comments.** Facsimile (FAX) comments are not acceptable.

**4. Public Inspection of Public Comments.** All properly submitted comments and communications submitted to HUD will be available for public inspection and copying between 8 a.m. and 5 p.m. weekdays at the above address, or at [www.regulations.gov](http://www.regulations.gov). HUD strongly encourages the public to view the docket file at [www.regulations.gov](http://www.regulations.gov). Due to security measures at the HUD Headquarters building, an advance appointment to review the public comments must be scheduled by calling the Regulations Division at 202-402-3055 (this is not a toll-free number). Individuals with speech or hearing impairments may access this number via TTY by calling the Federal Relay Service at 800-877-8339 (this is a toll-free number). Copies of all comments submitted are available for inspection and downloading at [www.regulations.gov](http://www.regulations.gov).

**FOR FURTHER INFORMATION CONTACT:** Teresa B. Payne, Administrator, Office of Manufactured Housing Programs, Office of Housing, Department of Housing and Urban Development, 451

7th Street SW, Washington, DC 20410; telephone (202) 402-2698 (this is not a toll-free number). Persons with hearing or speech impairments may access this number via TTY by calling the Federal Relay Service at (800) 877-8389 (this is a toll-free number).

**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 or MHCSS) codified in title 24 of the Code of Federal Regulations (CFR), part 3280. The Act was amended by the Manufactured Housing Improvement Act of 2000 (Pub. L. 106-569, Approved December 27, 2000) which expanded the purposes of the Act, created the Manufactured Housing Consensus Committee (MHCC), a consensus committee responsible for providing HUD recommendations to adopt, revise and interpret HUD's Construction and Safety Standards, and established the MHCC and regulatory development process. HUD's Construction and Safety Standards only apply to the design, construction, and installation of new manufactured homes.

The MHCC held its first meeting in August of 2002 and began work on reviewing possible revisions to the Construction and Safety Standards. The MHCC developed its own priorities for preparing proposed revisions for HUD to consider. As the MHCC proceeded, proposed revisions to the Construction and Safety Standards were divided into sets.

This proposed rule is based on the fourth and fifth sets of MHCC recommendations to improve various aspects of the Construction and Safety Standards. HUD reviewed those recommendations submitted by the MHCC and adopted them after making editorial revisions and some additions. The following is a discussion of the specific revisions to the Construction and Safety Standards that are included in this proposed rule.

**II. Proposed Changes**

The proposed rule would revise 24 CFR part 3280, the Construction and Safety Standards, and would also revise the incorporated by reference standards, where indicated. It also proposes revisions to HUD's Procedural and Enforcement Regulations (24 CFR part 3282), Model Manufactured Home Installation Standards (24 CFR part 3285), and Manufactured Home

Installation Program (24 CFR part 3286). Many of the proposed changes would codify existing building practices or conform HUD standards to other existing residential building codes. As identified in the summary table below, HUD has identified eight (8) standards in this proposed rule that would have an economic impact on the production costs of manufactured homes: changes to allowed moisture content of treated

lumber, modifications to the temperature ratings for air ducts, adding a requirement for the water resistive barrier, modifications to kitchen cabinet fire protection, changes to the maximum distance from the fixture trap to vent, under-chassis line-voltage wiring protection, updated reference standards allowing reduced design values for certain lumber, and modifications to structural design requirements for attics.

HUD is requesting comment whether any of the other proposed changes would have an economic impact or impose additional costs on the production of manufactured housing, specifically on the analysis supporting this proposed rule and the assumptions used.

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**Table 1. Summary of Proposed Changes by MHCC Log Item and Projected Economic Impacts**

Table 1 – Summary of Proposed Changes and Projected Economic Impacts					
HUD Ref. #	Log Item	Reference	Description	Economic Impact on Production Costs	Summary and Benefits
1	# 78	§ 3280.304(a) Materials	Provide for moisture content of pressure treated lumber to be used for exterior purposes.	X (Decrease)	Decreases construction costs. Lumber prices are highly variable. Results in minimal time savings.
2	# 88	§ 3280.715(a) Circulating air systems	Air ducts temperature ratings.	X (Decrease)	Decreases construction costs. Increases options for design.
3	# 91	§ 3280.603(b)(4)(ii) Freezing  §3285.603(d)(3) Use of heat tape or pipe heating cable	Piping manufacturer installation instructions statement.		No calculable cost impact. Increases options for design.
4	# 92	§ 3280.709(a) Installation of appliances	Installed appliances manufacturer's instructions.		No calculable cost impact but would decrease manufacturer costs with time savings. Eliminates duplication.
5	# 93	§ 3280.709(g) Installation of appliances  § 3285.503(b) Fireplaces and wood stoves.	Fireplaces and wood stoves.		No cost impact. Increases options for consumers and manufacturers.
6	# 94	§ 3280.707(a) Heat Producing Appliances	Heat producing appliances and vents.		No calculable cost impact. Increases options for manufacturers and may reduce utility costs for consumers.

7	# 95	§ 3280.102 Definitions  § 3280.103 Light and ventilation	Ventilation.		No cost impact. Potential to reduce costs during design stage.
8	# 98	§ 3280.307 Resistance to elements and use	Resistance to elements and use – water resistive barrier.	X (Increase)	Increases construction costs . Increases home resiliency for consumers.
9	# 100	§ 3280.203 Flame spread limitations and fire protection requirements  § 3280.204 Kitchen cabinet protection	Kitchen cabinet fire protection.	X (Decrease)	Decreases construction costs. Increases fire safety where range hood finishes are used.
10	# 101	§ 3280.611(c) Vents and venting, size of vent piping	Maximum distance of fixture trap to vent.	X (Decrease)	Decreases construction costs. Affords more flexibility in designing circuit vents for floorplans. Aligns with industry standards.
11	# 103	§ 3280.808(k) Wiring in wet locations	Under-chassis line- voltage wiring protection.	X (Decrease)	Decreases construction costs. and streamlines site installation efforts.
12	# 104	§ 3285.5 Definitions  § 3285.801(f) Hinged roofs and eaves	Peak cap and peak flip roof assemblies.		No cost impact. May streamline site installation efforts.
13	# 107	§ 3280.2 Definitions	Certification label.		No cost impact. Editorial changes.
14	# 108	§ 3280.607(b)(3) Shower compartment	Shower compartment.		No calculable cost impact. Increases consumer options. Reduces burden by eliminating need for AC letter.
15	# 112	§ 3280.4 Incorporation by reference	Contact information for AHRI.		No cost impact
16	# 113	§ 3280.4 Incorporation by Reference	Reference to AHRI 210/240, Unitary Air- Conditioning & Air- Source Heat Pump Equipment.		No cost impact. Aligns MHCSS with more current industry standards.
17	# 114	§ 3280.4 Incorporation by reference	Reference to ANSI Z21.47, Gas Fired Central Furnaces.		No cost impact. Aligns MHCSS with more current industry standards.
18	# 115	§ 3280.4 Incorporation by reference	Reference to UL 1995, Heating and Cooling Equipment.		No cost impact. Aligns MHCSS with more current industry standards.
19	# 116	§ 3280.4 Incorporation by reference	Reference to NFPA 54, National Fuel Gas Code.		No cost impact. Aligns MHCSS with more current industry standards.

20	# 117	§ 3280.4 Incorporation by reference	Reference to NGPA 90B, Warm Air Heating and Air Conditioning Systems.		No cost impact. Aligns MHCSS with more current industry standards.
21	# 118	§ 3280.4 Incorporation by reference  § 3280.703 Minimum Standards	Reference to UL 60335-2-4, Safety of Household and Similar Electronic Appliances.		No cost impact. Aligns MHCSS with more current industry standards.
22	# 124	§ 3280.714 Appliances, Cooling	AHRI 210/240 in section on appliances, cooling.		No calculable cost impact. Aligns MHCSS with more current industry standards.
23	# 125	§ 3280.714 Appliances, Cooling	Heat pump Coefficient of Performance (COP) ratios.		No calculable cost impact. Aligns MHCSS with current federal minimum efficiency standards.
24	# 128	§ 3280 Subpart A - General (§§ 3280.2, 3280.4 and 3280.5)  § 3280 Subpart B - Planning Considerations (§§ 3280.103(b), 3280.105(a), 3280.109(a) and 3280.115)  § 3280 Subpart C - Fire Safety (§§ 3280.203, 3280.204, 3280.214, 3280.215, and 3280.216)  § 3280 Subpart F - Thermal Protections (§§ 3280.510 and 3280.511)  § 3280 Subpart G - Plumbing Systems (§§ 3280.603 and 3280.609(a)(2))  § 3280 Subpart H - Heating, Cooling and Fuel Burning	Multi-dwelling unit manufactured homes.		No calculable cost impact. Increases consumer options.

		Systems (§ 3280.705(j))  § 3280 Subpart I – Electrical Systems (§§ 3280.802 and 3280.805)  § 3285.603 Water Supply			
25	# 129	§ 3280 Subpart A – General (§ 3280.4)  § 3280.304 Materials (Wood and Wood Products)	Reference to AWC National Design Specification for Wood Construction. (Refer to #57 of Table 2 of this preamble)	X (Increase)	Increases construction costs. Improves quality of homes for consumers and aligns manufactured housing code with site built construction standards.
26	# 130	§ 3280.105(a)(2)(i) Number and location of exterior doors	Exterior doors.		No calculable cost impact. Increases consumer options.
27	# 131	§ 3280.305(k)(2) Structural Design Requirements	Structural design requirements for attics.	X (Decrease)	Decreases construction costs. Clarifies existing provisions for attic design.
28	# 134	§ 3280.304(b)(1) Materials – Steel	Specification for Structural Steel Buildings.		No cost impact. Allows flexibility for structural engineers to use modern design format that may offer a more efficient solution.
29	# 135	§ 3285.603(e)(1) Water supply	Water system piping testing procedures.		Decreases on-site testing time.
30	# 136	§ 3286.205(d) Prerequisites for installation license	Prerequisites for installation license.		No calculable cost impact. Increases flexibility for installers.
31	# 137	§ 3286.207(d) Process for obtaining installation license	Process for obtaining installation license.		No calculable cost impact. Increases flexibility for installers.
32	# 138	§ 3286.209(b)(8)(vi) Denial, suspension, or revocation of installation license	Denial, suspension, or revocation of installation license.		No calculable cost impact. Increases flexibility for installers.
33	# 139	§ 3280.4 Reference Standards	Various reference specifications, standards, and codes.		No cost impact. Manufacturers and designers can use more recent publications and aligns MHCSS with more current industry standards.

34	# 201	§ 3280.403 Requirements for Windows  3280.404 Egress Window Systems  3280.405 Exterior passage doors	North American Fenestration Standard/Specification for windows, doors, and skylights.		No cost impact. Aligns MHCSS with more current industry standards.
35	# 141	§ 3286.409 Obtaining inspection	Obtaining inspection		No cost impact. Rule change clarifies MHCSS.
36	# 142	§ 3286.103 DAPIA-approved installation instructions.	DAPIA-approved installation instructions.		No cost impact. Rule change clarifies MHCSS and ensures consumers have necessary documentation regarding their homes.
37	# 143	§ 3280.711 Instructions	Appliance QR code.		Reduces paperwork and bookkeeping. Increases convenience for manufacturers and consumers.
38	# 144	§ 3280.304(b)(1) Materials – Steel, Wood, Unclassified	Standard for power driven staples and nails.		No cost impact. Adds option for ICC codes to be used for a baseline for compliance to help streamline compliance and aligns standards with common construction practices.
39	# 145	§ 3280.5(i) Data plate	Data plate.		No cost impact.

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The following is a discussion of the specific revisions to the Construction and Safety Standards that are proposed by this rule.

*A. General Update of the Standards and New Standards Incorporated by Reference*

HUD proposes to revise the definitions for “Certification label” and “Dwelling unit” in § 3280.2 to correct references and clarify the criteria for defining dwelling units. HUD proposes to add additional definitions for “Dwelling,” “Multipurpose fire sprinkler system,” “Stand-alone fire sprinkler system,” and “Water resistive barrier” to further clarify terms regarding standards revisions and standards incorporated by reference that are recommended by the MHCC.

A significant goal of this proposed rule is to update standards incorporated by reference under § 3280.4 to align the regulations at 24 CFR part 3280 to more current building codes and practices. As a result, this rule proposes to revise 70 current standards, add 16 new standards, and incorporate by reference

2 standards in a new location, for a total of 88 standards, under § 3280.4 (see Table 2 for more detail and information). Notable changes to the reference standards being added or revised are updated references for unitary air-conditioning and air-source heat pump equipment (NSI/AHRI Standard 210/240-2008 with Addenda 1 and 2); gas fired central furnaces (ANSI Z21.47); heating and cooling equipment and systems (UL 1995); and safety of household and electronic appliances (UL 60335-2-34). New standards will allow for the use of more modern gas-fired appliances, such as tankless water heaters (ANSI Z21.10.3) and will eliminate the need for Alternative Construction (AC) letters in some cases. Many paragraphs within § 3280.4 are unchanged in content but are being revised to reflect a redesignated outline structure.

HUD also proposes to amend § 3280.5 to provide for multi-dwelling unit manufactured homes and reinforce the requirement for each manufactured home dwelling unit to bear a data plate and to include an updated statement on

the Wind Zone Map that references an updated ASCE/SEI 7-05 standard for the anchoring and foundation system of the unit. Consistent with a 2015 determination made by the MHCC, HUD is proposing a maximum of three dwelling units for a multi-dwelling unit manufactured home. The MHCC based its determination on ensuring consistency with a similar state code. HUD is interested in public comment specific to this maximum provision for three dwelling units, including benefits and challenges if a four unit maximum were considered and how any conflict with differing state maximums would be handled. HUD is also making a conforming change to § 3282.8, by removing paragraph (l).

*B. Planning Considerations*

The proposed rule would amend § 3280.102 to add definitions for “Air, exhaust,” “Air, outdoor,” “Exhaust system,” “Mechanical ventilation,” “Natural ventilation,” “Supply system,” and “Ventilation”. The proposed rule would clarify the terminology utilized for outlining the airflow and mechanical

ventilation system requirements for a manufactured home, which is described in the proposed paragraph changes under § 3280.103. The proposed changes would specify the allowance for local exhaust systems to be utilized in kitchens and bathrooms and clarify the distance requirement for range and cooktop exhaust systems to be located at no more than three (3) feet apart. HUD also is proposing to add clarifications regarding the airflow rating that should be utilized for design of a home, provided that duct sizing meets either prescriptive ANSI/ASHRAE standards or the ventilation system manufacturer's design criteria. The proposed changes would also make editorial revisions to §§ 3280.103, 3280.105, 3280.109 and 3280.115, accommodating design for multi-dwelling unit manufactured homes.

The proposed rule would amend the provisions for exit doors in § 3280.105 to accommodate open floorplans, update exterior door size requirements and would, in § 3280.112, establish a 30-inch minimum hallway size requirement for homes 14 feet in inside width or larger.

The proposed rule would amend § 3280.113 to reflect more current ANSI standards (ANSI Z97.1–2009) for safety glazing materials and establish new soundproofing requirements for multi-dwelling unit manufactured homes in a new section 3280.115.

### C. Fire Safety

HUD is proposing to amend § 3280.203 to clarify that non-horizontal surfaces above the horizontal plane formed by the bottom of the range hood are not considered to be exposed surfaces subject to fire protective requirements. In § 3280.204, the proposed rule would also clarify the requirements for finish materials used in range hoods and establish a fire spread rating. The proposed rule is needed to ensure that the use of decorative range hood covers meet the fire safety standards in the Construction and Safety Standards. It is more stringent than model codes for site-built one-to-four single family housing, which contains no such requirement.

HUD is proposing to expand the fire safety subpart to include guidelines and requirements for the design and installation of fire sprinkler systems when a manufacturer chooses to install such a system as outlined in § 3280.214. While this proposed rule is not adding a requirement that fire sprinkler systems be installed, when a manufacturer installs a fire sprinkler system, this section would establish the requirements for the installation of the

fire sprinkler system in a manufactured home. This section would apply to both stand-alone and multipurpose fire sprinkler systems that do not include the use of antifreeze. A back-flow preventer is not required to separate a stand-alone sprinkler system from the home's water distribution system.

The proposed rule would establish minimum requirements for the design of a fire sprinkler system itself to be in accordance with NFPA 13D (proposed for incorporation by reference in proposed § 3280.4) or equivalent. The proposed rule would outline required sprinkler locations, excepting specific areas within a manufactured home, temperature ratings and separation from heat sources, installation requirements for freezing conditions, and the maximum areas of coverage for a single sprinkler head. The proposed rule would also establish requirements for installation practices, piping support and sizing standards to achieve minimum pressure requirements, shutoff valves, drainage, minimum flow, design flow rates, and operational testing. The proposed rule would also require the manufacturer to permanently affix a Fire Sprinkler System Certificate adjacent to the data plate and specify on the Fire Sprinkler System Certificate the minimum required pressure in pounds per square inch (psi) and flow rate for the water supply system. This proposal was not specifically recommended by the MHCC but added by HUD to support the addition of the requirements proposed for multi-dwelling unit manufactured homes.

Per MHCC recommendations, HUD is also proposing to add new fire safety requirements for multi-dwelling unit manufactured homes in § 3280.215. In manufactured homes with more than one dwelling unit, each dwelling unit must be separated from each other by wall and floor assemblies having not less than a 1-hour fire resistance rating when tested in accordance with Chapter 16 of the National Design Specification for Wood Construction, NDS–2015, the standards proposed to be incorporated by reference under § 3280.4. The proposed rule would outline requirements for fire-resistant floor/ceiling and wall assemblies and the fire resistance rating of supporting construction of such assemblies. Penetrations of wall or floor-ceiling assemblies in multi-dwelling unit manufactured homes are required to be fire-resistance rated in accordance with MHCC recommendations specified in the proposed standards under § 3280.215.

HUD is also including in this proposed rule a new section under § 3280.216 outlining draftstopping requirements, as recommended by the MHCC, for multi-dwelling unit manufactured homes. Draftstopping standards for single dwelling unit manufactured homes were previously recommended by MHCC but were not included in the prior rulemaking that addressed the MHCC 3rd set of recommendations (86 FR 2496, January 12, 2021) due to cost impacts and will be added to the agenda of future MHCC consideration, as discussed in the proposed rule for the prior rulemaking (85 FR 5589, 5594, January 31, 2020). This proposed rule would apply them to the multi-dwelling unit manufactured homes, however, since multi-dwelling units contain numerous kitchens, furnaces, and other causes of residential fires, it inherently has a greater risk and containment is essential for safety of the occupants. This proposal is not expected to add additional costs beyond those already incurred in the normal design and construction process for multi-dwelling unit manufactured homes.

### D. Body and Frame Requirements

The proposed rule would amend § 3280.303 to reflect that all construction methods used in the construction process for manufactured homes must conform not only to accepted engineering practices, but to an approved quality assurance manual as required by §§ 3282.203 and 3282.361(c), to ensure durable, livable, and safe housing. This proposal underscores the importance and HUD prioritization of ensuring compliance with effective quality assurance standards to enhance and improve the construction process and quality of manufactured homes.

The proposed rule would amend § 3280.304 to update the reference standards and specifications for steel, wood and wood products, unclassified materials, and fasteners to allow manufacturers and designers to use more recent publications and align the MHCCSS with more current industry standards.

HUD is also proposing to amend language under § 3280.305 to update the reference for design wind pressures for Exposure C from ASCE 7–88 to ASCE/SEI 7–05 that is to be specified based on the Basic Wind Zone Map for Manufactured Housing, which can be used as an alternate option to design homes in lieu of using the Table of Design Wind Pressures found in § 3280.305. In the MHCC recommendations to HUD, the

committee recommended that the wind pressures included in the Table of Design Wind Pressures remain unchanged, but requested that “HUD staff work to update the wind speeds references” that are used to design manufactured homes in Wind Zones II and III.

As requested, HUD staff completed a general comparison of ASCE 7–88 and ASCE 7–05 followed by an in-depth analysis to determine the appropriate wind speeds for Wind Zones II and III that would best align and correlate with wind pressures in the Table of Design Wind Pressures. As a general introduction, historical references to wind speed within the MHCSS are based on “fastest mile” wind speed measurements. These fastest mile wind speeds are currently 100 miles per hour (mph) for Wind Zone II and 110 mph for Wind Zone III. Fastest mile means the average speed at which an airborne particle would travel a mile in the direction of the wind, in mph. However, most wind professionals today, including ASCE, now use a peak three-second gust wind speed to define wind loads, which is the highest average speed measured over a three second period of time, in mph. It is important to understand this change in both wind speed measurement and terminology when assessing the new wind speed references in this proposed rule.

In addition to the ASCE 7 update for wind speed measurement from “fastest mile” to “three-second gust,” ASCE updated the mathematical formulas used to determine the wind pressures and the wind speeds in hurricane-prone areas. This review led to the in-depth analysis below and the revised wind speeds included in this proposed rule.

HUD performed two different methods to determine revised wind speeds. The first was to review the HUD wind speed/zone map with the wind speed map in ASCE 7–05, to verify that a manufactured home would be subject to comparable wind speeds if designed using ASCE 7–05. The second used the prescriptive wind pressures shown in the Table of Design Wind Pressures under § 3280.305 as a baseline to perform a series of iterative calculations to determine wind speeds that would produce similar wind pressures for Wind Zones II and III.

The first analysis consisted of overlaying the contour lines for Wind Zones II and III on top of the wind speed map published in ASCE 7–05 to verify that manufactured homes would be designed for wind speeds that are comparable to the requirements of ASCE 7–05. Using this method, the maximum wind speed identified in ASCE 7–05 for

the continental United States of America is 150 mph. The only other location ASCE 7–05 indicates a wind speed above 150 mph is Guam, which requires a wind speed of 170 mph. Setting 150 mph as the upper bound (Wind Zone III) resulted in reviewing the locations between Wind Zones II and III compared to the those in ASCE 7–05. It was found that there are multiple wind speeds between the ASCE 7–05 contours lines ranging from 100 mph to a maximum of 140 mph. Therefore, since the HUD wind zones encompass multiple wind speeds and the HUD wind zones must be appropriate for all homes within these limits, Wind Zone II was set to a wind speed of 140 mph. Based off this analysis, HUD staff determined the revised wind speeds for Wind Zones II and III should be 140 mph and 150 mph, respectively, based off a three-second gust.

HUD’s second analysis used the Durst Curve found in the commentary of ASCE 7 to convert the fastest mile to three-second gust and compare it to the International Building Code’s (IBC) equation of  $V_{fm} = (V_{3sec} - 10.5)/1.05$  (IBC Section 1609.3). Both conversions resulted in wind speeds for Wind Zones II and III increasing from 100 mph and 110 mph, to 120 mph and 130 mph, respectively. However, these conversions could not be used alone as they do not factor in changes ASCE 7 made throughout the years to determine the wind pressures for building design that are now based on wind speed. The following paragraphs describe the main differences between the 1988 and 2005 editions of the ASCE 7 code.

- ASCE 7–88 and ASCE 7–05 use the following wind pressure (P) equation  $P = q \cdot G_h \cdot C_p - q_h(GC_{pi})$  (eq. 1)

- ASCE 7–88’s velocity pressure ( $q/q_h$ ) is equal to:  $q/q_h = 0.00256 \cdot K_z \cdot (I \cdot V)^2$  (eq. 2) where V is fastest mile wind speed,  $I = 1.05$  for areas 100 miles from coast,  $K_z = 0.8$ ,  $G_h = 1.32$  and  $GC_{pi} = +/ - 0.25$

- ASCE 7–05’s velocity pressure ( $q/q_h$ ) is equal to:  $q/q_h = 0.00256 \cdot K_z \cdot K_{zt} \cdot K_d \cdot I \cdot V^2$  (eq. 3) where V is 3 second gust wind speed,  $I = 1.0$ ,  $K_z = 0.85$ ,  $G = 0.85$ ,  $GC_{pi} = +/ - 0.18$ ,  $K_{zt} = 1$ ,  $K_d = 0.85$

Using the above equations and keeping V constant, equation 2 and 3 above would simplify to  $q = 0.00226 \cdot V^2$  and  $q = 0.00185 \cdot V^2$  for ASCE 7–88 and ASCE 7–05 respectively, which results in an 18 percent decrease in pressure from ASCE 7–88 to ASCE 7–05. Using these values for “q” and plugging them into the first equation, the design wind pressure (P) would be decreased even further. The overall wind design

pressure would be decreased 47 percent if the wind speeds currently published in the MHCSS were left unrevised yet the design option was updated to ASCE 7–05.

HUD conducted an iterative analysis to match the prescriptive wind pressures shown in the Table of Design Wind Pressure to wind pressures using the ASCE 7–05 simplified method, also known as Method 1. The prescriptive Main Wind Force Resisting System (MWFRS) wind pressures are 39 pounds per square foot (psf) and 47 psf for Wind Zones II and III, respectively. Using ASCE 7 Method 1, winds speeds could be approximately 145 mph for Zone II and 160 mph for Zone III. However, based on the first analysis, it was determined that wind speeds of 140 mph and 150 mph for Zones II and III would keep manufactured housing on par with design of other single-family structures. Finally, wind speeds of 140 mph and 150 mph were used to compare the prescriptive component and cladding wind pressures in § 3280.305 to ASCE 7–05, which resulted in approximately the same wind pressures depending on the tributary area used. Based on these thorough analyses, HUD is proposing to update the wind speeds for Wind Zones II and III to 140 mph and 150 mph, respectively, based upon a three-second gust.

HUD also proposes to update the isotach reference under § 3280.305(c)(2)(iii)(A) for Wind Zone III in the State of Alaska to the 110 mph isotach on the ANSI/ASCE 7–05 map. Further, HUD is updating the U.S. territories to address only those regions applicable for U.S. jurisdiction and proposes to eliminate reference to the Trust Territory of the Pacific Islands. Lastly, HUD proposes that the entire territory of Guam use a wind speed of 170 mph as shown in figure 6–1 of ANSI/ASCE 7–05. HUD has made correlating changes to the standards in this proposed rule, where appropriate, to account for these changes.

The reference standards for the structural design requirements for welded connections would also be updated in § 3280.305 to more current AISI standards. New language is also added in this paragraph (k) of this section to define and clarify “attic areas” and allow standard computer truss modeling methodologies to be utilized to design trusses. The proposal also establishes qualifying factors for the requirement of the 20 psf live loads for design of ceiling joists/bottom chords. To correct the interpretation that the entire attic space must be designed for storage and the live load of 20 psf



regardless of whether the space was accessible for or capable of accommodating storage space, the new qualifiers include criteria for attic access opening, joist slope, and minimum insulation depth that will allow for potential optimization of truss design and eliminate designs based on unnecessary or unrealistic loading conditions. These changes will allow the industry to value engineer structural roof members and help the industry to remain competitive in providing affordable housing.

The proposed rule would amend § 3280.307 to require the exterior wall envelopes to include a water resistive barrier (WRB) behind the exterior cladding of manufactured homes, as well as a means of draining water that enters the assembly. As most higher-end manufactured homes already include a WRB as a standard feature, this change will likely affect an estimated 30 percent% of the current production. The use of a WRB is a commonly found product used in most single-family home construction and is required by many state and local codes. The WRB increases home resiliency and durability and offers a second layer of protection from bulk water damage over the exterior cladding.

The MHCC also recommended an edit to the former § 3280.309, changing manufactured homes to dwelling units, but the Health Notice on formaldehyde emissions was removed from the MHCSS during the last rulemaking and HUD will not take action on that recommendation.

Finally, proposed updates will add a new subsection § 3280.309 to provide standards for vinyl siding and polypropylene siding used in manufactured homes. Most siding manufacturers have instructions that reference the Vinyl Siding Institute Installation Instructions, which in turn reference ASTM standards. For consistency of both material and installation requirements, this proposed change will require that vinyl siding used in manufactured home construction comply with ASTM standards and must be certified or listed and labeled as conforming to those requirements.

#### *E. Testing*

The proposed rule would update and amend testing standards for windows, sliding glass doors, and skylights under § 3280.403, egress windows and devices under § 3280.404, and swinging exterior passage doors under § 3280.405, for use in manufactured homes. The proposed rule would update standards for AAMA 1701.2 from the 1995 version to the

2012 version; ANSI Z97.1 from the 2004 version to the 2009 version; and AAMA 1702.2 from the 1995 version to the 2012 version. The proposed rule also adds AAMA/WDMA/CSA 101/I.S.2/A440–17 North American Fenestration Standard (NAFS) as an alternative compliance path in the sections of the MHCSS that govern windows, sliding glass doors, and skylights; egress windows; and swinging exterior passage doors. Windows used in manufactured homes are often exposed to some of their most severe service prior to the home being installed, as they may be subjected to extreme wind pressure and vibration while the home is being transported to the installation site. Testing standards ensure that windows can withstand such pressures while still performing to air and water specifications. The proposed rule also requires fenestration products to be certified by an ISO/IEC 17065 accredited body, to ensure the competence, consistent operation and impartiality of product, process, and service certification bodies. This proposed rule change aligns the code with more current industry standards.

#### *F. Thermal Protection*

The proposed rule updates the reference standards for vapor retarder testing methods to a more current version of ASTM E96/E96M in §§ 3280.504. In § 3280.510, clarifications are made to make clear that heat loss and comfort cooling certificates must be visible to home occupants and be permanently affixed within each dwelling unit to accommodate multi-dwelling unit manufactured homes and that homes designated as suitable for central air conditioning must provide certified capacity information, including correct air supply entrances and air return locations.

#### *G. Plumbing Systems*

The proposed rule would add flexibility for the use of heat tape or piping heating cable used on plumbing systems in manufactured homes under § 3280.603(b)(4)(ii) to increase the number of available options of heat tapes and pipe heating cables for use by consumers and manufacturers to prevent freezing of plumbing pipes. Heat tape or pipe heating cables used for manufactured homes are not different from those used in conventional site-built homes. This change will allow manufacturers to use heat tape or pipe heating cable listed or certified for its intended purpose. The proposed rule would also update reference standards for materials listed under § 3280.604 to current industry standards.

HUD also proposes to update the code governing the requirement for shower compartment installation under § 3280.607(b)(3). The rule change will allow roll-in-type and transfer-type shower compartments (accessible bathing fixtures) with thresholds that comply with ICC ANSI A117.1, Standard for Accessible and Usable Buildings and Facilities, and will permit manufacturers to install bathing systems designed to serve people with disabilities. The current code imposes limitations on accessible shower compartment features by requiring minimum dam or threshold height. Currently, consumers have to remodel the existing standard shower compartment to integrate an accessible shower compartment or manufacturers need to obtain an Alternative Construction letter to install accessible shower compartments. The proposed rule change will codify accessible shower compartments into the MHCSS, eliminating the need for Alternative Construction letters for accessible shower compartments and allowing consumers to directly buy homes with accessible shower compartments. Under § 3280.609, language is amended to clarify hot water supply systems are required for each dwelling unit equipped with a kitchen sink, bathtub, and/or shower.

In § 3280.611, amendments are proposed to increase the maximum distance of a fixture trap to the vent, commonly referred to as the “trap arm.” It is imperative that a plumbing fixture be located close enough to the vertical vent pipe to prevent a siphon from where existing water is pulled out of the trap rendering it ineffective. This maximum distance is determined by the diameter and the number of fixtures draining through the drain pipe. The proposed rule change increases the maximum distance of the fixture trap to the vent thus aligning the distances in the MHCSS with those of the International Plumbing Code. This rule change affords plumbing engineers more flexibility in designing circuit vents for any specific floorplan. Bathroom fixtures (showers, sinks, toilets) must be located within the distances prescribed from the vent pipe; therefore, the increased maximum distances allow the designers to locate the vent pipe in the walls to accommodate a preferred fixture layout, whereas previously the layout may have required modification due to shorter permissible distances and floor plan constraints (e.g., location of available walls for the vent pipe). Consistency with other industry guidance (International Plumbing Code

and the American Society of Plumbing Engineers) reduces the likelihood of delays in the design approval process arising from designers using standard industry practice but which resulted in trap arms that exceeded the lengths previously allowed by the table in § 3280.611(c).

#### *H. Heating, Cooling and Fuel Burning Systems*

The proposed rule would update the reference standards included in the definitions for Class 0 air ducts and connectors under § 3280.702 to UL 181–2013, more current UL standards. Reference standards would also be updated in § 3280.703 and two new standards (ANSI Z21.10.3 and ANSI Z21.75) are proposed to be added for gas-fired water heaters with input ratings above 75,000 British thermal units (Btu) per hour, circulating and instantaneous; and electrical heating appliances (UL 499–2014).

In § 3280.705, standards for gas piping systems are proposed to update the reference standards to more current editions. Reference standards include criteria for establishing the suitability of concealed mechanical tube fittings for use with concealed gas piping, pipe joints in piping systems, and LP-gas supply connectors. Reference standards for oil piping systems and heat producing appliances would also be updated under § 3280.706 and § 3280.707. In addition, § 3280.705(j) would be revised to require a gas supply connector for each dwelling unit of a multi-dwelling unit manufactured home designed for gas supply.

In § 3280.709(a), this proposed rule would remove the language requiring manufacturers to leave appliance manufacturer instructions attached to appliances. Section 3280.711 currently states that “Operating instructions must be provided with each appliance. The operating and installation instructions for each appliance must be provided with the homeowner’s manual.” The current language in § 3280.709 causes confusion as to whether it is necessary to ship two installation instructions with each home, one with the appliance and one with the homeowners’ manual. Because all appliance manuals must be provided with the homeowner’s manual, this proposed rule change eliminates potential redundancy for

duplicate and unnecessary appliance manuals. Furthermore, proposed revisions to § 3280.711 to allow for operating instructions requirements to be met through the provision of permanent Quick Response (QR) codes would further streamline documentation requirements for manufacturers.

In § 3280.709(g), the proposed rule would ease requirements to allow consumers and manufacturers to install any fireplaces and wood stoves listed or certified for their intended purpose, instead of limiting options to only those specifically listed for manufactured homes. Installed fireplaces and wood stoves used for manufactured homes are not different than those used for homes regulated by others, so this proposed change would allow for greater flexibility and available options for both consumers and manufacturers.

HUD also proposes to delete the prescriptive table of minimum coefficient of performance (COP) ratios for electric heat pumps with supplemental resistance heat under § 3280.714(a)(1)(iii). These heat pumps are only required to meet the minimum federal heating season performance factor (HSPF) requirement. Current typical minimum COP values already exceed the prescriptive minimum COP values from 1989, so this rule change eliminates obsolete minimum standards and aligns the MHCSS with current federal minimum efficiency requirements.

In § 3280.715, the proposed rule change permits supply air ducts located within 3 feet of the furnace discharge to be made of less fire-resistant material if those ducts are rated to withstand the maximum discharge air temperature of the equipment. All supply ducts must still be made of galvanized steel, tin-plated steel, or aluminum listed as Class 0 (air ducts and air connectors having surface burning characteristics of zero) or Class 1 (air ducts and air connectors having a flame-spread index of not over 25 without evidence of continued progressive combustion and a smoke-developed index of not over 50) in accordance with UL 181–2013. Previously, Class 1 ducts had to be located at least three (3) feet from the furnace bonnet or plenum, and furnace supply plenums had to be constructed of metal that extends a minimum of

three (3) feet from the heat exchanger measured along the centerline of airflow. Manufacturers of Class 1 ducts commonly offer products specifically listed for use in manufactured homes, so the potential savings of this rule change would be realized immediately.

#### *I. Electrical Systems*

The proposed rule would amend the definition for feeder assembly under § 3280.802(a)(20) to refer to “dwelling unit” instead of “manufactured home.” This change would accommodate the integration of multi-dwelling unit manufactured homes. Power supply requirements under § 3280.803(a) are clarified to not apply to multi-dwelling unit manufactured homes, and National Electric Code references under §§ 3280.803(k)(3)(ii), 3280.804, and 3280.808(p) are updated to reference applicable articles of the National Electrical Code, NFPA 70–2014 for a more current standard. The code requirements for disconnecting means, consisting of a circuit breaker, or switch and fuses and accessories, would be streamlined under § 3280.804 and clarified to refer to dwelling units instead of manufactured homes. MHCSS language for branch circuit requirements under § 3280.805 and wiring methods and materials under § 3280.808 are also simplified for improved clarity.

#### *J. Revisions to Standards Incorporated by Reference (Reference Standards)*

The following table lists the standards incorporated by reference (IBRed) that would be revised or added by this proposed rule. Each reference standard is preceded with an indicator to identify the type of change being made. Reference standards designated “N” are new, meaning they have not been codified into the MHCSS. Reference standards designated “U” are being updated, that is HUD is incorporating an updated or more recent version of an already codified standard. Reference standards designated “\*” are not new or being updated but have already been codified in the MHCSS and are being added to a different section from that codified. The sections of the MHCSS that would be amended by each modification are also shown on the right of the reference standard being added or updated:

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Table 2. Summary of New and Updated IBR Standards under 3280.4

Table 2. Summary of New and Updated IBR Standards under 3280.4 (4 <sup>th</sup> /5 <sup>th</sup> Set Proposed Rule)							
#	N / U	Standard	Publishing Organization	Title	Year	3280.4	Impacted Sections
1	U	ANSI/AHRI 210/240	American National Standards Institute/Air Conditioning, Heating, & Refrigeration Institute	Unitary Air- Conditioning and Air-Source Heat Pump Equipment	2008	(a)(1)	3280.511(b), 3280.703(d)(22), 3280.714(a)
2	U	AAMA 1701.2	American Architectural Manufacturers Association	Voluntary Standard for Utilization in Manufactured Housing for Primary Window and Sliding Glass Doors	2012	(s)(3)	3280.403(b) and (e), 3280.404(b) and (e)
3	U	AAMA 1702.2	American Architectural Manufacturers Association	Voluntary Standard for Utilization in Manufactured Housing for Swinging Exterior Passage Doors	2012	(s)(4)	3280.403(e), 3280.405(b) and (e)
4	U	AAMA 1704	American Architectural Manufacturers Association	Voluntary Standard Egress Window Systems for Utilization in Manufactured Housing	2012	(s)(5)	3280.404(b) and (e)
5	U	AAMA/WD MA/CSA 101/I.S.2/A44 0	American Architectural Manufacturers Association/Windo w and Door Manufacturers Association	North American Fenestration Standard/Specificati on for Windows, Doors, and Skylights	2017	(s)(6)	3280.304(b)(1), 3280.403(b) and (e), 3280.404(b) and (e), 3280.405(b) and (e)
6	U	ANSI/AHA A135.4	American National Standards Institute/American Hardboard Association	Basic Hardboard	2012	(o)(1)	3280.304(b)(3)
7	U	ANSI/AHA A135.5	American National Standards Institute/American Hardboard Association	Prefinished Hardboard Paneling	2012	(o)(2)	3280.304(b)(3)
8	U	ANSI/AHA A135.6	American National Standards Institute/American	Hardboard Siding	2012	(o)(3)	3280.304(b)(3)

			Hardboard Association				
9	U	AISC 360	American Institute of Steel Construction	Specifications for Structural Steel Buildings	2010	(e)(1)	3280.304(b)(2) 3280.305(j)(1)
10	U	AISI S100	American Iron and Steel Institute	North American Specification for the Design of Cold-Formed Steel Structural Members	2012	(f)(1)	3280.304(b)(2), 3280.305(j)
11	U	ANSI A208.1	American National Standards Institute	Particleboard	2009	(g)(4)	3280.304(b)(3)
12	U	ANSI LC 1	American National Standards Institute	Fuel Gas Piping Systems Using Corrugated Stainless Steel Tubing	2014	(g)(8)	3280.705(b)
13	U	ANSI Z21.1	American National Standards Institute	Household Cooking Gas Appliances	2016	(g)(9)	3280.703(a)(13)
14	U	ANSI Z21.5.1	American National Standards Institute	Gas Clothes Dryers Volume 1, Type 1 Clothes Dryers	2015	(g)(10)	3280.703(a)(7)
15	U	ANSI Z21.10.1	American National Standards Institute	Gas Water Heaters Volume 1, Storage Water Heaters with Input Ratings of 75,000 BTU per hour or less	2014	(g)(11)	3280.703(a)(15), 3280.707(d)
16	N	ANSI Z21.10.3	American National Standards Institute	Gas-fired Water Heaters Volume 3, Storage Water Heaters with Input Ratings Above 75,000 BTU per Hour, Circulating and Instantaneous	2014	(g)(12)	3280.703(a)(8)
17	U	ANSI Z21.15	American National Standards Institute	Manually Operated Gas Valves for Appliances, Appliance Connector Valves and Hose End Valves	2009	(g)(13)	3280.703(c)(4), 3280.705(c) and (l)
18	U	ANSI Z21.19	American National Standards Institute	Refrigerators Using Gas Fuel	2014	(g)(14)	3280.703(a)(14)
19	U	ANSI Z21.20	American National Standards Institute	Automatic Gas Ignitions Systems and Components	2014	(g)(15)	3280.703(d)(9)
20	U	ANSI Z21.21	American National Standards Institute	Automatic Valves for Gas Appliances	2012	(g)(16)	3280.703(d)(10)
21	U	ANSI Z21.23	American National Standards Institute	Gas Appliance Thermostats, with ANSI Z21.23a -2003 and ANSI Z21.23b-2005 Addendums	2000	(g)(18)	3280.703(d)(11)

22	U	ANSI Z21.24	American National Standards Institute	Connectors for Gas Appliances	2006	(g)(19)	3280.703(c)(3)
23	*	ANSI Z21.40.1	American National Standards Institute	Gas Fired Heat Activated Air Conditioning and Heat Pump Appliances	1996	(g)(20)	3280.703(a)(9), 3280.714(a)
24	U	ANSI Z21.47	American National Standards Institute	Gas Fired Central Furnaces (Except Direct Vent Systems)	2012	(g)(21)	3280.703(a)(10)
25	N	ANSI Z21.75	American National Standards Institute	Connectors for Outdoor Gas Appliances and Manufactured Homes	2007	(g)(22)	3280.703(a)(11)
26	U	ANSI Z97.1	American National Standards Institute	Standard for Safety Glazing Materials used in Buildings— Safety Performance Specifications and Methods of Test	2009	(g)(24)	3280.113(d), 3280.304(b)(6), 3280.403(d), 3280.607(b), 3280.703(d)(4)
27	U	APA D510C (replaces APA D410A)	The Engineered Wood Association (formerly the American Plywood Association)	Panel Design Specification	2012	(q)(1)	3280.304(b)(3)
28	U	APA E30V	The Engineered Wood Association (formerly the American Plywood Association)	Engineered Wood Construction Guide	2011	(q)(3)	3280.304(b)(3)
29	U	APA H815G	The Engineered Wood Association (formerly the American Plywood Association)	Design & Fabrication of All- Plywood Beams	2013	(q)(4)	3280.304(b)(3)
30	N	APA PS 1	The Engineered Wood Association (formerly the American Plywood Association)	Structural Plywood (with Typical APA Trademarks)	2009	(q)(5)	3280.304(b)(3)
31	U	APA S811P	The Engineered Wood Association (formerly the American Plywood Association)	Design & Fabrication of Plywood Curved Panels	2013	(q)(6)	3280.304(b)(3)
32	U	APA S812S	The Engineered Wood Association (formerly the American Plywood Association)	Design & Fabrication of Glued Plywood Lumber Beams	2013	(q)(7)	3280.304(b)(3)
33	U	APA U813M	The Engineered Wood Association (formerly the	Design & Fabrication of	2012	(q)(8)	3280.304(b)(3)

			American Plywood Association)	Plywood-Stressed Skin Panels			
34	U	APA U814J	The Engineered Wood Association (formerly the American Plywood Association)	Design & Fabrication of Plywood Sandwich Panels	2012	(q)(9)	3280.304(b)(3)
35	N	APA Y510	The Engineered Wood Association (formerly the American Plywood Association)	Plywood Design	1998	(q)(10)	3280.304(b)(3)
36	U	ASCE/SEI 7	American Society of Civil Engineers/Structural Engineering Institute	Minimum Design Loads for Buildings and Other Structures	2005	(h)(1)	3280.5(f) 3280.304(b)(6), 3280.305(c)
37	U	ANSI/ASHRAE 62.2	American National Standards Institute/American Society of Heating, Refrigeration and Air Conditioning Engineers	Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings	2013	(i)(2)	3280.103(d) and (e), 3280.703(d)(23)
38	U	ANSI/ASME B1.20.1	American National Standards Institute/American Society of Mechanical Engineers	Pipe Threads, General Purpose (Inch)	2013	(j)(18)	3280.604(c)(1), 3280.703(b)(3), 3280.705(e), 3280.706(d)
39	U	ANSI/ASME B36.10	American Society of Mechanical Engineers	Welding and Seamless Wrought Steel Pipe	2004	(j)(26)	3280.604(c)(1), 3280.703(b)(4), 3280.705(b), 3280.706(b)
40	U	ASTM A53/A53M	ASTM, International	Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc Coated, Welded and Seamless	2012	(l)(1)	3280.604(c)(1), 3280.703(b)(1)
41	U	ASTM B42	ASTM, International	Standard Specification for Seamless Copper Pipe, Standard Sizes	2010	(l)(4)	3280.604(c)(2), 3280.703(c)(7)
42	U	ASTM B88	ASTM, International	Standard Specification for Seamless Copper Water Tube	2014	(l)(6)	3280.604(c)(2), 3280.703(c)(1), 3280.705(b), 3280.706(b)
43	U	ASTM B251	ASTM, International	Standard Specification for General Requirements for Wrought Seamless Copper-Alloy Tubes	2010	(l)(7)	3280.604(c)(2), 3280.703(c)(6)

44	U	ASTM B280	ASTM, International	Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service	2013	(l)(8)	3280.703(c)(2), 3280.705(b), 3280.706(b)
45	U	ASTM C1396/C1396 M	ASTM, International	Standard Specification for Gypsum Board	2014	(l)(12)	3280.304(b)(4)
46	N	ASTM D3679	ASTM, International	Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Siding	2009	(l)(21)	3280.304(b)(6), 3280.309(b).
47	U	ASTM D4442	ASTM, International	Standard Test Methods for Direct Moisture Content Measurement of Wood & Wood Base Materials	2007	(i)(23)	3280.304(b)(3)
48	U	ASTM D4444	ASTM, International	Standard Test Methods for Use and Calibration of Hand- Held Moisture Meters	2013	(l)(24)	3280.304(b)(3)
49	N	ASTM D4756	ASTM, International	Standard Practice for Installation of Rigid Poly (Vinyl Chloride) (PVC) Siding and Soffit	2006	(l)(26)	3280.304(b)(6), 3280.309(c)
50	N	ASTM D7254	ASTM, International	Standard Specification for Polypropylene (PP) Siding	2007	(l)(28)	3280.304(b)(6), 3280.309(c)
51	N	ASTM E90	ASTM, International	Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements	2009	(l)(30)	3280.115(b)
52	U	ASTM E96/E96M	ASTM, International	Standard Test Methods for Water Vapor Transmission of Materials	2013	(l)(31)	3280.504(a) and (c)
53	U	ASTM E119	ASTM, International	Standard Test Method for Fire Tests of Building Construction and Materials	2014	(l)(32)	3280.215(a) and (d), 3280.304(b)(3), 3280.1003(a)
54	N	ASTM E492	ASTM, International	Standard Test Method for	2009	(l)(34)	3280.115(c)

				Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine			
55	N	ASTM E814	ASTM, International	Standard Test Method for Fire Tests of Penetration Firestop Systems	2013	(l)(37)	3280.215(d)(1)
56	U	AWC (formerly under AFPA)	American Wood Council (formerly American Forest & Paper Association)	Design Values for Joists & Rafters	2012	(m)(1)	3280.304(b)(3)
57	U	AWC NDS (formerly under AFPA)	American Wood Council (formerly American Forest & Paper Association)	National Design Specifications for Wood Construction, with Supplement, Design for Wood Construction	2015	(m)(2)	3280.215(a), 3280.304(b)(3)
58	U	AWC PS-20-70 (formerly under AFPA)	American Wood Council (formerly American Forest & Paper Association)	Span Tables for Joists & Rafters	2012	(m)(3)	3280.304(b)(3)
59	U	ANSI/HPVA HP-1	American National Standards Institute/Hardwood Plywood and Veneer Association (previously HPMA)	American National Standard for Hardwood and Decorative Plywood	2009	(p)(1)	3280.304(b)(3)
60	U	IAPMO TSC 9	Int'l Association of Plumbing and Mechanical Officials	Standard for Gas Supply Connectors for Manufactured Homes	2003	(v)(8)	3280.703(c)(5)
61	N	ISO/IEC 17065	Int'l Organization for Standardization/Int'l Electrotechnical Commission	Conformity Assessment – Requirements for Bodies Certifying Products, Processes and Services	2012	(x)(1)	3280.403(e), 3280.404(e), 3280.405(e)
62	U	ESR 1539	International Code Council Evaluation Service (previously known as National Evaluation Service)	Power Driven Staples and Nails	2014	(w)(1)	3280.304(b)(5)
63	N	NFPA 13D	National Fire Protection Association	Standard for the Installation of Sprinkler Systems in One and Two Family Dwellings and Manufactured Homes	2010	(bb)(1)	3280.214(b), (e)(2), and (o)(3)



64	U	NFPA 31	National Fire Protection Association	Installation of Oil-Burning Equipment	2011	(bb)(2)	3280.703(d)(13), 3280.707(f)
65	U	NFPA 54 / ANSI Z223.1	National Fire Protection Association/ American National Standards Institute	National Fuel Gas Code	2015	(bb)(3)	3280.703(d)(14)
66	U	NFPA 58	National Fire Protection Association	Standard for the Storage and Handling of Liquefied Petroleum Gases	2014	(bb)(4)	3280.703(d)(16)
67	U	NFPA 70	National Fire Protection Association/National Electric Code	National Electric Code	2014	(bb)(5)	3280.607(c), 3280.801(a) and (b), 3280.803(k), 3280.804(a) and (k), 3280.805(a), 3280.806(a) and (d), 3280.807(c), 3280.808(a), (l) and (p), 3280.810(b), 3280.811(b)
68	U	NFPA 90B	National Fire Protection Association	Warm Air Heating and Air Conditioning Systems	2015	(bb)(6)	3280.703(d)(15)
69	U	SAE J533b	Society of Automotive Engineers	Flares for Tubing	2007	(ff)(1)	3280.703(d)(17), 3280.705(f)
70	U	TPI 1 (replaces TPI-85)	Truss Plate Institute	National Design Standard for Metal Plate Connected Wood Truss Construction	2007	(hh)(1)	3280.304(b)(3)
71	U	UL 103	Underwriters' Laboratories, Inc.	Chimneys, Factory Built Residential Type & Building Heating Appliance	2010	(ii)(2)	3280.703(d)(18)
72	U	UL 109	Underwriters' Laboratories, Inc.	Tube Fittings for Flammable and Combustible Fluids, Refrigeration Service, and Marine Use	2005	(ii)(3)	3280.703(d)(5)
73	U	UL 174	Underwriters' Laboratories, Inc.	Household Electric Storage Tanks Water Heaters	2004	(ii)(5)	3280.703(a)(16)
74	U	UL 181	Underwriters' Laboratories, Inc.	Factory Made Air Ducts & Connectors	2013	(ii)(6)	3280.702, 3280.703(d)(1), 3280.715(a) and (e)
75	U	UL 181A	Underwriters' Laboratories, Inc.	Closure Systems for Use with Rigid Air	2013	(ii)(7)	3280.703(d)(2), 3280.715(c)

				Ducts and Air Connectors			
76	N	UL 263	Underwriters' Laboratories, Inc.	Fire Tests of Building Construction Materials	2014	(ii)(10)	3280.215(a) and (b)
77	*	UL 268	Underwriters' Laboratories, Inc.	Smoke Detectors for Fire Protective Signaling Systems	1999	(ii)(11)	3280.209(a) <sup>1</sup> , 3280.703(a)(18)
78	U	UL 307A	Underwriters' Laboratories, Inc.	Liquid Fuel Burning Heating Appliances for Manufactured Homes & Recreational Vehicles	2009	(ii)(12)	3280.703(a)(2), 3280.707(f)
79	U	UL 307B	Underwriters' Laboratories, Inc.	Gas Burning Appliances for Manufactured Homes & Recreational Vehicles	2009	(ii)(13)	3280.703(a)(6)
80	U	UL 441	Underwriters' Laboratories, Inc.	Gas Vents	2010	(ii)(15)	3280.703(d)(12)
81	N	UL 499	Underwriters' Laboratories, Inc.	Standard for Electric Heating Appliances, Fourteenth Edition	2014	(ii)(16)	3280.703(a)(20)
82	U	UL 569	Underwriters' Laboratories, Inc.	Pigtails & Flexible Hose Connectors for LP Gas	2013	(ii)(17)	3280.703(d)(6), 3280.705(l)
83	U	UL 1042	Underwriters' Laboratories, Inc.	Electric Baseboard Heating Equipment	2009	(ii)(20)	3280.703(a)(4)
84	N	UL 1479	Underwriters' Laboratories, Inc.	Standard for Fire Tests of Penetration Firestops	2014	(ii)(22)	3280.215(d)(1)(ii)
85	U	UL 1995	Underwriters' Laboratories, Inc.	Heating and Cooling Equipment	2011	(ii)(24)	3280.703(a)(1)
86	*	ANSI/UL 2034	Underwriters' Laboratories, Inc.	Standard for Single and Multiple Station Carbon Monoxide Alarms	2016	(ii)(26)	3280.209(a), 3280.211(a) <sup>1</sup> , 3280.703(a)(19)
87	N	UL 60335-2-34	Underwriters' Laboratories, Inc.	Standard for Household and Similar Electrical Appliances - Safety, Part 2-34: Particular Requirements for Motor-Compressors	2012	(ii)(27)	3280.703(a)
88	U	WDMA I.S.4	Window and Door Manufacturers Association	Industry Specification for Preservative Treatment for Millwork	2009	(kk)(1)	3280.405(c)

<sup>1</sup> There are no proposed amendments to this section.

reduced safety or performance levels for manufactured home occupants.

*K. Changes to the Manufactured Home Procedural and Enforcement Regulations (24 CFR Part 3282)*

HUD is proposing a single revision to its Manufactured Home Procedural and Enforcement Regulations at 24 CFR part 3282. Specifically, HUD is proposing to remove paragraph (l) from § 3282.8. This change would remove “multifamily homes” from the section’s applicability provisions.

*L. Changes to the Model Manufactured Home Installation Standards (24 CFR Part 3285)*

HUD is proposing changes to the Model Manufactured Home Installation Standards at 24 CFR part 3285 to revise definitions to allow certain specified roof ridge designs without a requirement for specific on-site inspections by the Production Inspection Primary Inspection Agencies (IPIAs), in those instances where it is to better support a type of roof installation that is now common throughout the industry and is a time-tested technology. Other proposed changes support broader criteria for fireplaces and woodstoves, as well as proposed changes to the Construction and Safety Standards for fire sprinkler certification and testing requirements, and modifications to water supply testing provisions to accommodate more types of piping materials. HUD proposes to add language under subpart F—Optional Features, to ensure that residential fire sprinkler systems are certified and tested on site in accordance with home manufacturer’s instructions and to ensure that a required listed minimum water supply is available for any systems installed. Testing requirements are to be consistent with § 3280.612(a) and certified by the installer.

Proposed revisions to part 3285 also include revised language in § 3285.603(d)(3) to support the changes under § 3280.603(b)(4)(ii) for heat tape or pipe heating cable use.

*M. Changes to the Manufactured Home Installation Program (24 CFR Part 3286)*

HUD is proposing changes to the Manufactured Home Installation Program at 24 CFR part 3286 to clarify and ensure that manufacturer instructions, alternative designs, and installation instructions are provided to purchasers and homeowners. Changes would also ensure that licensed installers must receive installation instructions in order to properly install the homes. Proposed changes also

include clarifying the financial damage coverage prerequisites for installer applicants to qualify for installation licenses. An irrevocable letter of credit was added as an option in place of the surety bond to give installers another financial avenue to meet the licensing requirements, while still ensuring the same coverage to consumers. Changes will codify what has been discovered by the HUD-administered Manufactured Home Installation Program as necessary to provide adequate coverage to consumers in the case of damage to or loss of a manufactured home resulting from installation defects.

**III. Incorporation by Reference**

Before HUD issues a final rule, the consensus standards proposed for incorporation 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. For purposes of this proposed rule, HUD has established an electronic reading room which provides links to access the consensus standards that would be added or updated by this rule. These standards will be available for review during the public comment period for this rule. The reading room can be accessed at: [www.hud.gov/program\\_offices/housing/rmra/mhs/readingroom](http://www.hud.gov/program_offices/housing/rmra/mhs/readingroom).

Supplemental descriptions of the standards are provided in the following list. In addition, copies of these standards may be obtained from the organization that developed the standard. Finally, as described in § 3280.4, these standards are available for inspection at HUD’s Office of Manufactured Housing Programs. Due to security measures at the HUD Headquarters building, however, an advance appointment to review standards must be scheduled by calling the Office of Manufactured Housing Programs 202–708–1112 (this is not a toll-free number).

The following 88 consensus standards for Manufactured Housing are proposed for approval for incorporation by reference:

1. ANSI/AHRI Standard 210/240–2008 with Addenda 1 and 2, Unitary Air-Conditioning and Air-Source Heat Pump Equipment. The proposed rule would update ANSI/ARI 210/240–89, Unitary Air-Conditioning and Air Source Heat Pump Equipment. This standard establishes definitions, classifications, test requirements, rating requirements, minimum data requirements for published ratings, operating requirements, marking and nameplate data, and conformance conditions for Unitary Air-Conditioners

and Air-Source Unitary Heat Pumps. This standard is available through HUD’s online reading room.

2. AAMA 1701.2–12, Voluntary Standard for Utilization in Manufactured Housing for Primary Window and Sliding Glass Doors. The proposed rule would update AAMA 1701.2–95. This standard sets the requirements for primary windows and sliding glass doors used in manufactured housing. Window mounted as components in entry doors are beyond the scope of this standard. Since building methods and materials are expected to undergo continued design innovation, the purpose of this standard is to establish reasonable performance standards for all present and future methods and materials of construction. This standard is available through HUD’s online reading room.

3. AAMA 1702.2–12, Voluntary Standard for Utilization in Manufactured Housing for Swinging Exterior Passage Doors. The proposed rule would update AAMA 1702.2–95, Voluntary Standard Swinging Exterior Passage Door for Utilization in Manufactured Housing. This standard sets the requirements for swinging exterior passage doors and combination doors used in manufactured housing. Windows used in swinging exterior passage doors are components of the door and are thus included in this standard. Since building methods and materials are expected to undergo continued design innovation, the purpose of this standard is to establish reasonable performance standards for all present and future methods and materials of construction. This standard is available through HUD’s online reading room.

4. AAMA 1704–12, Voluntary Standard Egress Window Systems for Utilization in Manufactured Housing. The proposed rule would update AAMA Standard 1704–1985. This standard sets the requirements for the design, construction, and installation of egress window systems. This standard is available through HUD’s online reading room.

5. AAMA/WDMA/CSA 101/I.S.2/A440–17, North American Fenestration Standard/Specification for Windows, Doors, and Skylights. The proposed rule would update AAMA/WDMA/CSA 101/I.S.2/A440–08. The MHCC originally recommended updating this standard to the 2011 version; however, more recently the MHCC submitted another recommendation to update this standard to the 2017 version. HUD proposes to update this standard to the 2017 version as most recently approved by the MHCC, as this version is already

referenced in HUD's industry-wide alternative construction approval for doors. Incorporating the more recently recommended version will eliminate the need for the industry-wide alternative construction approvals for both doors and windows that address pandemic-related supply chain shortages. This standard establishes material-neutral, minimum, and optional performance requirements for windows, doors, secondary storm products, tubular daylighting devices, roof windows, and unit skylights. The specification concerns itself with the determination of performance grade, design pressure, and related performance ratings. This standard is available through HUD's online reading room.

6. *ANSI/AHA A135.4–2012, Basic Hardboard*. The proposed rule would update ANSI/AHA A135.4–1995. This standard covers requirements and test methods for water resistance, thickness swelling, modulus of rupture, tensile strength, surface finish, dimensions, squareness, edge straightness, and moisture content of five classes of basic hardboard. This standard requires test methods determined by the ASTM, International where appropriate and provides methods of identifying hardboard that is compliant. This standard is available through HUD's online reading room.

7. *ANSI/AHA A135.5–2012, Prefinished Hardboard Paneling*. The proposed rule would update ANSI/AHA A135.5–1995. This standard covers requirements and methods of testing for the dimensions, squareness, edge straightness, and moisture content of prefinished hardboard paneling and for the finish of the paneling. Methods of identifying products which conform to ANSI/AHA A135.5 are included. This standard is available through HUD's online reading room.

8. *ANSI/AHA A135.6–2012, Hardboard Siding*. The proposed rule would update ANSI/AHA A135.6–1998. This standard sets requirements and methods of testing for the dimensions, straightness, squareness, physical properties, and surface characteristics of engineered wood siding at the time of manufacture. This standard is available through HUD's online reading room.

9. *AISC 360–10, Specifications for Structural Steel Buildings*. The proposed rule would update AISC–S335, 1989, Specification for Structural Steel Buildings—Allowable Stress Design and Plastic Design (except for the following parts of this standard which are specifically excluded from use: 1.3.3, 1.3.4, 1.3.5, 1.3.6, 1.4.6, 1.5.1.5, 1.5.5, 1.6, 1.7, 1.8, 1.9, 1.10.4 through 1.10.7, 1.10.9, 1.11, 1.13, 1.14.5,

1.17.7 through 1.17.9, 1.19.1, 1.19.3, 1.20, 1.21, 1.23.7, 1.24, 1.25.1 through 1.25.5, 1.26.4, 2.3, 2.4, 2.8 through 2.10), June 1, 1989. This specification provides the generally applicable requirements for the design and construction of structural steel buildings and other structures. This standard is available through HUD's online reading room.

10. *AISI S100–12, North American Specification for the Design of Cold-Formed Steel Structural Members*. The proposed rule would update AISI, Specification for the Design of Cold-Formed Steel Structural Members, 1996. This specification provides the general applicable requirements for the design of cold-formed steel structural members used in North America. This standard is available through HUD's online reading room.

11. *ANSI A208.1–2009, Particleboard*. The proposed rule would update ANSI A208.1–1999. This standard sets forth requirements and test methods for dimensional tolerances, physical and mechanical properties, and formaldehyde emissions for particleboard. Methods of identifying products conforming to the standard are specified. This standard is available through HUD's online reading room.

12. *ANSI LC 1–2014, Fuel Gas Piping Systems Using Corrugated Stainless Steel Tubing*. The proposed rule would update ANSI/IAS LC 1–1997. This standard provides the general applicable requirements for the installation of natural and propane gas piping systems using corrugated stainless steel tubing in residential, commercial, or industrial buildings. This includes requirements for the installation of corrugated stainless steel piping systems in which portions of the piping are exposed to the outdoors as required to make connections to outdoor gas meters or to outdoor gas appliances, which are attached to, mounted on, or located near the building structure. This standard is available through HUD's online reading room.

13. *ANSI Z21.1–2016, Household Cooking Gas Appliances*. The proposed rule would update ANSI Z21.1–2000. This standard specifies guidelines for the newly produced household cooking gas appliances constructed entirely of new, unused parts and materials. These appliances may be floor-supported or built-in. This standard is available through HUD's online reading room.

14. *ANSI Z21.5.1–2015, Gas Clothes Dryers Volume 1, Type 1 Clothes Dryers*. The proposed rule would update ANSI Z21.5.1–1999, Gas Clothes Dryers Volume 1, Type 1 Clothes Dryers, with Addendum z21.5.1a–1999. This

standard specifies guidelines for newly produced Type 1 clothes dryers constructed entirely of new, unused parts and materials for use with natural gas, manufactured gas, mixed gas, propane gas, LP gas-air mixtures, and for mobile home installation. This standard is available through HUD's online reading room.

15. *ANSI Z21.10.1–2014, Gas Water Heaters Volume 1, Storage Water Heaters with Input Ratings of 75,000 BTU per hour or Less*. The proposed rule would update ANSI Z21.10.1–1998, Gas Water Heaters—Volume 1, Storage Water Heaters with Input Ratings of 75,000 BTU per hour or Less, with Addendum Z21.10.1a–2000. This standard specifies guidelines for newly produced, automatic storage water heaters having input ratings of 75,000 Btu/hr (21,980 W) or less, hereinafter referred to as water heaters or appliances, constructed entirely of new, unused parts and materials. This standard is available through HUD's online reading room.

16. *ANSI Z21.10.3–2014 Gas-fired Water Heaters Volume 3, Storage Water Heaters with Input Ratings Above 75,000 BTU per Hour, Circulating and Instantaneous*. This proposed rule would add this standard for incorporation by reference. This standard specifies guidelines for newly produced, large automatic storage water heaters having input ratings about 75,000 Btu/hr (21,980 W), instantaneous water heaters, and circulating water heaters including booster water heaters, constructed entirely of new, unused parts and materials. This standard is available through HUD's online reading room.

17. *ANSI Z21.15–2009, Manually Operated Gas Valves for Appliances, Appliance Connector Valves and Hose End Valves*. The proposed rule would update ANSI Z21.15–1997. This standard applies to manually operated gas valves not exceeding 4 inch (102 mm) pipe size, and pilot shut-off devices. This standard is available through HUD's online reading room.

18. *ANSI Z21.19–2014, Refrigerators Using Gas Fuel*. The proposed rule would update ANSI Z21.19–1990, with Addendum ANSI Z21.19a–1992 and ANSI Z21.19b–1995. This standard specifies guidelines for gas-fired refrigerators having refrigerated spaces for storage of foods, storage of foods and making ice, storage of frozen foods and making ice, or storage of foods and the storage of frozen foods and making ice. The standard applies to newly produced refrigerators constructed entirely of new, unused parts and materials. This

standard is available through HUD's online reading room.

19. *ANSI Z21.20–2014, Automatic Gas Ignitions Systems and Components*. This proposed rule would update ANSI Z21.20 with Addendum Z21.20a–2000. This standard specifies guidelines for newly produced automatic gas ignition systems and components constructed entirely of new, unused parts and materials. This standard is available through HUD's online reading room.

20. *ANSI Z21.21–2012, Automatic Valves for Gas Appliances*. This proposed rule would update ANZI Z21.21–2000. This standard specifies guidelines for newly produced automatic valves constructed entirely of new, unused parts and materials. These valves may be individual automatic valves or valves utilized as parts of automatic gas ignition systems. The standard also applies to commercial/ industrial safety shutoff valves, also referred to as C/I valves. This standard is available through HUD's online reading room.

21. *ANSI Z21.23–2000 (R2005), Gas Appliance Thermostats with ANSI Z21.23a–2003 (Addenda 1) and ANSI Z21.23b–2005 (Addenda 2)*. This proposed rule would update ANSI Z21.23–1993. This standard specifies guidelines for newly produced gas appliance thermostats of the integral gas valve type having a maximum operating gas pressure of ½ psi (3.5 kPa) or electric type. This standard is available through HUD's online reading room.

22. *ANSI Z21.24–2006 (R2011), Connectors for Gas Appliances*. This proposed rule would update ANSI Z21.24–1997/CGA 6.10–M97, Connectors for Gas Appliances, and remove the reference to the Compressed Gas Association. This standard specifies guidelines for newly produced gas appliance connectors constructed entirely of new unused parts and materials, having nominal internal diameters of ¼, ⅜, ½, ⅝, ¾ and 1 inch, and having fittings at both ends provided with taper pipe threads for connection to a gas appliance and to house piping. Guidelines cover assembled appliance connectors not exceeding a nominal length of six (6) feet (1.83 meters). Connectors listed under this standard are intended for use with gas appliances that are not frequently moved after installation. This standard is available through HUD's online reading room.

23. *ANSI Z21.40.1–1996, Gas Fired, Heat Activated Air Conditioning and Heat Pump Appliances*. This proposed rule would correct the title of this standard from ANSI Z21.40.1–1996/CGA 2.91–M96, Gas-Fired, Heat

Activated Air Conditioning and Heat Pump Appliances, to remove the reference to the Compressed Gas Association. This standard has already been approved for incorporation by reference for §§ 3280.703 and 3280.714(a) by the Director of the Office of the Federal Register and is unchanged. This standard is available through HUD's online reading room.

24. *ANSI Z21.47–2012, Gas Fired Central Furnaces (Except Direct Vent Systems)*. The proposed rule would update ANSI Z21.47–1990 with Addendum Z21.4a–1990 and Z21.47b–1992, Gas-Fired Central Furnaces (Except Direct Vent System Central Furnaces). The updated standard contains new and revised requirements for documentation and testing and sets forth basic standards for the safe operation, substantial and durable construction, and acceptable performance of gas-fired central furnaces. This standard has been previously approved for incorporation by reference at 10 CFR 431.75. This standard is available through HUD's online reading room.

25. *ANSI Z21.75–2007, Connectors for Outdoor Gas Appliances and Manufactured Homes*. This proposed rule would add this standard for incorporation by reference. This standard specifies guidelines for newly produced assembled connectors constructed entirely of new, unused parts and materials. This standard is available through HUD's online reading room.

26. *ANSI Z97.1–2009, Standard for Safety Glazing Materials used in Buildings—Safety Performance Specifications and Methods of Test*. The proposed rule would update ANSI Z97.1–2004, Standard for Safety Glazing Materials used in Buildings—Safety Performance Specifications and Methods of Test, copyright 2004. This standard establishes the specifications and methods of test for the safety properties of safety glazing materials (glazing materials designed to promote safety and to reduce or minimize the likelihood of cutting and piercing injuries when the glazing materials are broken by human contact) as used for all building and architectural purposes. The updated standard adds modifications and new material that add clarity of purpose, intent and procedures. Specifically, sections have been rewritten and new sections added to provide additional assurance that the intended safe-break characteristics have been achieved before a test specimen may be declared compliant. This reference standard impacts the HUD Code to define safety glazing materials

used in glass and glazed openings such as windows and sliding glass doors, and hazardous locations requiring safety glazing. The scope of this standard is available through HUD's online reading room.

27. *APA D510C–2012, Panel Design Specification*. The proposed rule would replace APA D410A–2004, Panel Design Specification. This standard specifies guidelines for newly produced assembled connectors constructed entirely of new, unused parts and materials. This standard is available through HUD's online reading room.

28. *APA E30V–2011, Engineered Wood Construction Guide*. The proposed rule would update APA E30R, Engineered Wood Construction Guide, revised January 2001. This standard specifies guidelines for the use of engineered wood for residential and commercial construction. It contains information on APA performance rated panels, glulam, I-joists, structural composite lumber, specification practices, floor, wall and roof systems, diaphragms and shear walls, fire-rated systems, and methods of finishing. This standard is available through HUD's online reading room.

29. *APA H815G–2013, Design & Fabrication of All-Plywood Beams*. The proposed rule would update APA H815E–1995 (PDS Supplement #5), Design and Fabrication of All-Plywood Beams. This standard presents recommended methods for the design and fabrication of staple-glued all-plywood beams. Allowable stresses and other design criteria are provided, as well as guidelines for beam fabrication. This standard is available through HUD's online reading room.

30. *APA PS 1–09, Structural Plywood (with Typical APA Trademarks)*. This proposed rule would add this standard for incorporation by reference. This standard specifies guidelines for producing, marketing, and specifying plywood for construction and industrial uses. This standard is available through HUD's online reading room.

31. *APA S811P–2013, Design & Fabrication of Plywood Curved Panels*. The proposed rule would update APA S811M–1990 (PDS Supplement 1), Design and Fabrication of Plywood Curved Panels. This specification presents the recommended method for the design and fabrication of curved plywood roof panels spanning between load-bearing supports so that the stresses developed act circumferentially around the curve. This standard is available through HUD's online reading room.

32. *APA S812S–2013, Design & Fabrication of Glued Plywood Lumber*

*Beams*. The proposed rule would update APA S812R–1992, Design and Fabrication of Glued Plywood-Lumber Beams, revised November 1998, Supplement #2, July 1992. This specification presents the recommended method for the design and fabrication of glued plywood and lumber beams. This standard is available through HUD's online reading room.

33. *APA U813M–2012, Design & Fabrication of Plywood-Stressed Skin Panels*. The proposed rule would update APA U813L–1992, Design and Fabrication of Plywood Stressed-Skin Panels, revised April 1996, Supplement #3, August 1992. This specification presents the recommended method for the design and fabrication of glued plywood stressed-skin panels. This standard is available through HUD's online reading room.

34. *APA U814J–2012, Design & Fabrication of Plywood Sandwich Panels*. The proposed rule would update APA U 814H, Design and Fabrication of Plywood, Sandwiched Panels, revised September 1993, Supplement #4, March 1990. This specification presents the recommended method for the design and fabrication of flat plywood sandwich panels. This standard is available through HUD's online reading room.

35. *APA Y510–98, Plywood Design*. This proposed rule would add this standard for incorporation by reference. This specification presents section properties, recommended design stresses, and design methods for plywood when used in building construction and related structures. This standard is available through HUD's online reading room.

36. *ASCE/SEI 7–05, Minimum Design Loads for Buildings and Other Structures*. The proposed rule would update ANSI/ASCE 7–88, Minimum Design Loads for Buildings and Other Structures. This standard describes the means for determining design loads including dead, live, soil, flood, tsunami, snow, rain, atmospheric ice, seismic, and wind loads and their combinations for general structural design. This standard is available through HUD's online reading room.

37. *ANSI/ASHRAE Standard 62.2–2013, Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings*. The proposed rule would update ANSI/ASHRAE 62.2–2010, Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings, copyright 2010. This standard describes the minimum requirements to achieve acceptable indoor air quality via dwelling-unit ventilation, local demand-controlled

exhaust, and source control. This standard is available through HUD's online reading room.

38. *ANSI/ASME B1.20.1–2013, Pipe Threads, General Purpose (Inch)*. The proposed rule would update ASME B1.20.1–1983, Pipe Threads, General Purpose (Inch). This standard establishes specifications for wrought copper and wrought copper alloy, solder-joint, seamless fittings, designed for use with seamless copper tube conforming to ASTM B88 (water and general plumbing systems), B280 (air conditioning and refrigeration service), and B819 (medical gas systems), as well as fittings intended to be assembled with soldering materials conforming to ASTM B32, brazing materials conforming to AWS A5.8, or with tapered pipe thread conforming to ASME B1.20.1. This standard is aligned with ASME B16.18, which covers cast copper alloy pressure fittings, and provides requirements for fitting ends suitable for soldering. This standard covers pressure-temperature ratings, abbreviations for end connections, size and method of designating openings of fittings, marking, material, dimensions and tolerances, and tests. This standard is available through HUD's online reading room.

39. *ANSI/ASME B36.10–2004, Welding and Seamless Wrought Steel Pipe*. The proposed rule would update ASME B36.10–1979, Welding and Seamless Wrought Steel Pipe. This standard covers the standardization of dimensions of welded and seamless wrought steel pipe for high or low temperatures and pressures. The word pipe is used, as distinguished from tube, to apply to tubular products of dimensions commonly used for pipeline and piping systems. Pipe NPS 12 (DN 300) and smaller have outside diameters numerically larger than their corresponding sizes. In contrast, the outside diameters of tubes are numerically identical to the size number for all sizes. This standard is available through HUD's online reading room.

40. *ASTM A53/A53M–12, Standard Specification for Pipe, Steel, Black and Hot-Dipped*. The proposed rule would update ASTM A53–93, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc Coated, Welded and Seamless. This specification covers seamless and welded black and hot-dipped galvanized steel pipe in NPS ½ to NPS 26. The steel categorized in this standard must be open-hearth, basic-oxygen, or electric-furnace processed, and must have specified chemical requirements. Testing requirements for seamless or welded tubing are provided in this standard. This standard is

available through HUD's online reading room.

41. *ASTM B42–10, Standard Specification for Seamless Copper Pipe, Standard Sizes*. The proposed rule would update ASTM B42–93, Standard Specification for Seamless Copper Pipe, Standard Sizes. This specification establishes the requirements for seamless copper pipe in all nominal standard pipe sizes, both regular and extra-strong, suitable for use in plumbing, boiler feed lines, and for similar purposes. This standard is available through HUD's online reading room.

42. *ASTM B88–14, Standard Specification for Seamless Copper Water Tube*. The proposed rule would update ASTM B88–93, Standard Specification for Seamless Copper Water Tube. The specification covers seamless copper water tube suitable for general plumbing, applications for the conveyance of fluids, and use with solder, flared, or compression-type fittings. This standard is available through HUD's online reading room.

43. *ASTM B251–10, Standard Specification for General Requirements for Wrought Seamless Copper and Copper-Alloy Tube*. The proposed rule would update ASTM B251–93, Standard Specification for General Requirements for Wrought Seamless Copper and Copper-Alloy Tube. This specification sets forth the general requirements for wrought seamless copper and copper-alloy tube. This standard is available through HUD's online reading room.

44. *ASTM B280–13, Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service*. The proposed rule would update ASTM B280–95a, Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service. This specification sets forth the requirements for seamless copper tube intended for use in the connection, repairs, or alterations of air conditioning or refrigeration units in the field. This standard is available through HUD's online reading room.

45. *ASTM C1396/C1396M–14, Standard Specification for Gypsum Board*. The proposed rule would update ASTM C 36/C 36M–99, Standard Specification for Gypsum Wallboard, 1999. This specification covers gypsum boards which include the following: gypsum wallboard for use on walls, ceilings, or partitions and that affords a surface suitable to receive decoration; predecorated gypsum board for use as the finished surfacing for walls, ceilings, or partitions; gypsum backing board, coreboard, and shaftliner board for use as a base in multilayer systems or as a

gypsum stud or core in semisolid or solid gypsum board partitions, or in shaft wall assemblies; water-resistant gypsum backing board to be used as a base for the application of ceramic or plastic tile on walls or ceilings; exterior gypsum soffit board for exterior soffits and carport ceilings that are completely protected from contact with liquid water; gypsum sheathing board for use as sheathing on buildings; gypsum base for veneer plaster; gypsum lath for use as a base for gypsum plaster application; and gypsum ceiling board for interior ceilings and walls. This standard is available through HUD's online reading room.

46. *ASTM D3679-09a, Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Siding*. This proposed rule would add this standard for incorporation by reference. This specification establishes requirements and test methods for the materials, dimensions, warp, shrinkage, impact strength, expansion, appearance, and windload resistance of extruded single-wall siding manufactured from rigid (unplasticized) PVC compound. This standard is available through HUD's online reading room.

47. *ASTM D4442-07, Standard Test Methods for Direct Moisture Content Measurement of Wood & Wood Base Materials*. The proposed rule would update ASTM D4442-92 (Reapproved 1997), Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials. These test methods cover the determination of the moisture content of wood, veneer, and other wood-based materials, including those that contain adhesives and chemical additives. This standard is available through HUD's online reading room.

48. *ASTM D4444-13, Standard Test Methods for Use and Calibration of Hand-Held Moisture Meters*. The proposed rule would update ASTM D4444-92, Standard Test Methods for Use and Calibration of Hand-Held Moisture Meters. These test methods cover the measurement of moisture content of solid wood products, including those containing additives (that is, chemicals or adhesives) for laboratory standardization and calibration of hand-held moisture meters. This standard is available through HUD's online reading room.

49. *ASTM D4756-06, Standard Practice for Installation of Rigid Poly (Vinyl Chloride) (PVC) Siding and Soffit*. This proposed rule would add this standard for incorporation by reference. This standard covers the minimum requirements for and the methods of installation of rigid vinyl siding, soffits,

and accessories on the exterior wall and soffit areas of buildings. This standard also covers aspects of installation relating to effectiveness and durability in service. This standard is available through HUD's online reading room.

50. *ASTM D7254-07, Standard Specification for Polypropylene (PP) Siding*. The proposed rule would add this standard for incorporation by reference. This specification establishes requirements and test methods for materials, impact strength, appearance, surface flame spread, and windload resistance of siding products manufactured from polypropylene material. This standard is available through HUD's online reading room.

51. *ASTM E90-09, Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements*. This proposed rule would add this standard for incorporation by reference. This test method covers the laboratory measurement of airborne sound transmission loss of building partitions such as walls of all kinds, operable partitions, floor-ceiling assemblies, doors, windows, roofs, panels, and other space-dividing elements. This standard is available through HUD's online reading room.

52. *ASTM E96/E96M-13, Standard Test Methods for Water Vapor Transmission of Materials*. The proposed rule would update ASTM E96-95, Standard Test Methods for Water Vapor Transmission of Materials. These test methods cover the determination of water vapor transmission rate of materials, such as, but not limited to, paper, plastic films, other sheet materials, coatings, foams, fiberboards, gypsum and plaster products, wood products, and plastics. This standard is available through HUD's online reading room.

53. *ASTM E119-14, Standard Test Method for Fire Tests of Building Construction and Materials*. The proposed rule would update ASTM E119-05, Standard Test Method for Fire Tests of Building Construction and Materials. This standard contemplates fire test response criteria which is essential for fire safety. Testing per this standard establishes the duration for which a specific material or installation can contain a fire. This information helps to show insurance carriers, contractors, and other parties what might reasonably be expected in the event of a fire emergency. This standard is available through HUD's online reading room.

54. *ASTM E492-09, Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through*

*Floor-Ceiling Assemblies Using the Tapping Machine*. This proposed rule would add this standard for incorporation by reference. This test method covers the laboratory measurement of impact sound transmission of floor-ceiling assemblies using a standardized tapping machine. This standard is available through HUD's online reading room.

55. *ASTM E814-13, Standard Test Method for Fire Tests of Penetration Firestop Systems*. This proposed rule would add this standard for incorporation by reference. This standard is used to measure and describe the response of materials, products, or assemblies to heat and flame under controlled conditions. This standard contemplates fire testing that evaluates a firestop under fire conditions to determine if it will gain firestop status. It addresses areas of building construction where firestop systems are necessary to contain fire from spreading from one area to another around penetrating items. This standard is available through HUD's online reading room.

56. *AWC (formerly under AFPA), 2012 Design Values for Joists & Rafters*. The proposed rule updates AFPA, Design Values for Joists and Rafters 1992. This standard provides design values such as bending, compression, and modulus of elasticity for joists and rafters, and tabulates allowable bending (Fb) and modulus of elasticity (E) design values for visually graded and mechanically graded dimension lumber. This standard is available through HUD's online reading room.

57. *AWC NDS-2015 (formerly under AFPA), National Design Specifications for Wood Construction, with Supplement, Design for Wood Construction*. The proposed rule updates ANSI/AFPA NDS-2001, National Design Specifications for Wood Construction, 2001 Edition, with Supplement, Design Values for Wood Construction, November 30, 2001. This specification defines the methods to be followed in structural design with the following wood products: visually graded lumber, mechanically graded lumber, structural glued laminated timber, timber piles, timber poles, prefabricated wood I-joists, structural composite lumber, wood structural panels, and cross-laminated timber. It also defines the practice to be followed in the design and fabrication of single and multiple fastener connections using the fasteners described within it. This standard is available through HUD's online reading room.

58. *AWC PS-20-70-2012 (formerly under AFPA), Span Tables for Joists &*

*Rafters*. The proposed rule updates AFPA PS-20-70, Span Tables for Joists and Rafters, 1993. This standard provides a simplified system for determining allowable joist and rafter spans for typical loads encountered in one- and two-family dwellings and is referenced in the 2012 *International Building Code*. This standard is available through HUD's online reading room.

59. *ANSI/HPVA HP-1-2009, American National Standard for Hardwood and Decorative Plywood*. The proposed rule would update ANSI/HPVA HP-1-1994, American National Standard for Hardwood and Decorative Plywood. This standard sets forth the specific requirements for all face, back, and inner ply grades as well as formaldehyde emissions, moisture content, tolerances, sanding, and grade marking for hardwood and decorative plywood. This standard is available through HUD's online reading room.

60. *IAPMO TSC 9-2003, Standard for Gas Supply Connectors for Manufactured Homes*. The proposed rule would update IAPMO TSC 9-97, Standard for Gas Supply Connectors for Manufactured Homes. This standard applies to connectors for outdoor use consisting of flexible tubing depending on all-metal construction for gas tightness and having a fitting at each end provided with tapered pipe threads for connecting manufactured home gas piping to a manufactured home lot gas outlet or a crossover in multiple unit manufactured homes. This standard is available through HUD's online reading room.

61. *ISO/IEC 17065-2012, Conformity Assessment—Requirements for Bodies Certifying Products, Processes and Services*. This proposed rule would add this standard for incorporation by reference. This International Standard contains requirements for the competence, consistent operation and impartiality of product, process and service certification bodies. This standard is available through HUD's online reading room.

62. *ESR 1539-2014, ICC-ES Evaluation Report, Power Driven Staples and Nails*. The proposed rule would update NER-272, National Evaluation Report, Power Driven Staples, Nails, and Allied Fasteners for Use in All Types of Building Construction, Reissued September 1, 1997. This document contains design values and allowable load tables for individual nails and staples as well as for nailed or stapled shear walls that may not be listed in the Uniform Building Code. This standard is available through HUD's online reading room.

63. *NFPA 13D-2010, Standard for the Installation of Sprinkler Systems in One and Two Family Dwellings and Manufactured Homes*. This proposed rule would add this standard for incorporation by reference. This standard covers the design, installation, and maintenance of automatic sprinkler systems for protection against the fire hazards in one- and two-family dwellings and manufactured homes. This standard is available through HUD's online reading room.

64. *NFPA 31-2011, Installation of Oil-Burning Equipment*. The proposed rule would update NFPA 31, Standard for the Installation of Oil-Burning Equipment, 2001. This standard sets forth the requirements for the safe, efficient design and installation of heating appliances that use a liquid fuel, typically No. 2 heating oil, but also lighter fuels, such as kerosene and diesel fuel, and heavier fuels, such as No. 4 fuel oil. This standard is available through HUD's online reading room.

65. *NFPA 54/ANSI Z223.1-2015, National Fuel Gas Code*. The proposed rule would update NFPA 54-2002, National Fuel Gas Code. This standard provides minimum safety requirements for the design and installation of fuel gas piping systems in homes and other buildings. This standard is available through HUD's online reading room.

66. *NFPA 58-2014, Standard for the Storage and Handling of Liquefied Petroleum Gases*. The proposed rule would update NFPA 58, Liquefied Petroleum Gas Code, 2001 Edition. This standard sets forth the requirements for safe liquified petroleum gas storage, handling, transportation, and use. This standard mitigates risks and ensures safe installations, to prevent failures, leaks, and tampering that could lead to fires and explosions. This standard is available through HUD's online reading room.

67. *NFPA 70-2014, National Electric Code*. This proposed rule would update NFPA No. 70-2005. This standard sets forth the requirements for safe electrical design, installation, and inspection to protect people and property from electrical hazards. The purpose of this Code is the practical safeguarding of persons and property from hazards arising from the use of electricity. This standard is available through HUD's online reading room.

68. *NFPA 90B-2015, Warm Air Heating and Air Conditioning Systems*. The proposed rule would update NFPA 90B, Warm Air Heating and Air Conditioning Systems, 1996 Edition. This standard sets forth the requirements that cover the construction, installation, operation,

and maintenance of systems for warm air heating and air conditioning, including filters, ducts, and related equipment to protect life and property from fire, smoke, and gases resulting from fire or from conditions having manifestations similar to fire. This standard is available through HUD's online reading room.

69. *SAE J533b-2007, Flares for Tubing*. The proposed rule would update SAE-J533b-1992, Flares for Tubing. This standard covers specifications and performance requirements for 37° and 45° single and double flares for tube ends intended for use with SAE J512, SAE J513, SAE J514, and ISO 8434-2 connectors. This standard is available through HUD's online reading room.

70. *TPI 1-2007, National Design Standard for Metal Plate Connected Wood Truss Construction* (formerly TPI-85). The proposed rule would update TPI-85, Design Specifications for Metal Plate and Wood Connected Trusses. This standard establishes minimum requirements for the design and construction of metal-plate-connected wood Trusses. This standard describes the materials used in a Truss, both lumber and steel, and design procedures for Truss members and joints. This standard is available through HUD's online reading room.

71. *UL 103-2010, Chimneys, Factory Built Residential Type & Building Heating Appliance*. The proposed rule would update UL 103-1995, with 1999 revisions, Factory-Built Chimneys for Residential Type and Building Heating Appliances, Ninth Edition. This standard sets forth the requirements for factory-built chimneys intended for venting gas, liquid, and solid-fuel fired residential-type appliances and building heating appliances in which the maximum continuous flue-gas outlet temperatures do not exceed 1,000 °F (538 °C). This standard is available through HUD's online reading room.

72. *UL 109-2005, Tube Fittings for Flammable and Combustible Fluids, Refrigeration Service, and Marine Use*. The proposed rule would update UL 109-1997, with 2001 revisions, Tube Fittings for Flammable and Combustible Fluids, Refrigeration Service, and Marine Use, Sixth Edition. This standard sets forth the requirements that apply to the performance in flame-exposure tests of flame-resistant fabrics of natural, synthetic or combination of natural and synthetic fibers, or plastic films intended for such use as tents, awnings, draperies or decorations. This standard is available through HUD's online reading room.



73. *UL 174–2004, Household Electric Storage Tanks Water Heaters*. The proposed rule would update UL 174–1996, with 1997 revisions, Household Electric Storage Tanks Water Heaters, Tenth Edition. This standard sets forth the requirements for household electric storage tank and small capacity storage tank water heaters that are rated no more than 600 volts and 12 kilowatts and are to be installed in accordance with the NFPA 70 and with model plumbing and mechanical codes. This standard is available through HUD's online reading room.

74. *UL 181–2013, Factory Made Air Ducts & Connectors*. The proposed rule would update UL 181 Factory Made Air Ducts and Connectors, Ninth Edition, April 4, 1996, with revisions through May 15, 2003. This standard sets forth the requirements that apply to materials for the fabrication of air duct and air connector systems for use in accordance with the International Mechanical Code, International Residential Code, and Uniform Mechanical Code, Standards of the National Fire Protection Association for the Installation of Air-Conditioning and Ventilating Systems, NFPA No. 90A, and the Installation of Warm Air Heating and Air-Conditioning Systems, NFPA No. 90B. This standard is available through HUD's online reading room.

75. *UL 181A–2013, Closure Systems for Use with Rigid Air Ducts and Air Connectors*. The proposed rule would update UL 181A, 1994, with 1998 revisions, Standard for Safety Closure Systems for Use with Rigid Air Ducts and Air Connectors, Second Edition. This standard sets forth the requirements that cover closure systems for use with factory-made rigid air ducts or air connectors complying with the Standard for Factory-Made Air Ducts and Air Connectors, UL 181. Closure systems consist of pressure sensitive tapes, heat-activated tapes, and mastics. This standard is available through HUD's online reading room.

76. *UL 263–2014, Fire Tests of Building Construction Materials*. This proposed rule would add this standard for incorporation by reference. These fire tests are applicable to assemblies of masonry units and composite assemblies of structural materials for buildings, including bearing and other walls and partitions, columns, girders, beams, slabs, and composite slab and beam assemblies for floors and roofs. They are also applicable to other assemblies and structural units that constitute permanent integral parts of a finishing building. This standard is available through HUD's online reading room.

77. *UL 268–1999, Smoke Detectors for Fire Protective Signaling Systems*. This standard has already been approved for incorporation by reference for § 3280.209(a) by the Director of the Office of the Federal Register and is unchanged but being proposed for incorporation by reference into § 3280.703. This standard is available through HUD's online reading room.

78. *UL 307A–2009, Liquid Fuel Burning Heating Appliances for Manufactured Homes & Recreational Vehicles*. The proposed rule would update UL 307A–1995, Liquid Fuel Burning Heating Appliances for Manufactured Homes and Recreational Vehicles, Seventh Edition, with 1997 revisions. This standard sets forth requirements that apply to certain types of liquid fuel-burning appliances intended for installation in manufactured homes and recreational vehicles, including travel trailers, camping trailers, truck campers, motor homes, and park trailers. This standard is available through HUD's online reading room.

79. *UL 307B–2009, Gas Burning Appliances for Manufactured Homes & Recreational Vehicles*. The proposed rule would update UL 307B–1995, Gas Burning Heating Appliances for Manufactured Homes and Recreational Vehicles, Fourth Edition, with 1998 revisions. This standard sets forth the requirements that apply to the certain gas fuel-burning heating appliances. This standard is available through HUD's online reading room.

80. *UL 441–2010, Gas Vents*. The proposed rule would update UL 441, 1996 with 1999 revisions, Gas Vents, Ninth Edition. This standard sets forth the requirements that cover Types B and BW gas vents and Types B and BW gas vent roof jacks intended for venting gas appliances equipped with draft hoods to burn only gas. This standard is available through HUD's online reading room.

81. *UL 499–2014, Standard for Electric Heating Appliances, Fourteenth Edition*. This proposed rule would add this standard for incorporation by reference. These requirements cover heating appliances rated at 600 V or less for use in unclassified locations in accordance with the National Electrical Code (NEC), NFPA 70–2014. This standard is available through HUD's online reading room.

82. *UL 569–2013, Pigtailed and Flexible Hose Connectors for LP Gas*. The proposed rule would update UL 569, 1995 with 2001 revisions, Pigtailed and Flexible Hose Connectors for LP-Gas, Seventh Edition. This standard sets forth the requirements that cover pigtailed and flexible hose connectors

used in the assembly of fuel-supply systems and intended for liquefied petroleum gas. This standard is available through HUD's online reading room.

83. *UL 1042–2009, Electric Baseboard Heating Equipment*. The proposed rule would update UL 1042–1994, Electric Baseboard Heating Equipment, Fourth Edition, with 1998 revisions. This standard sets forth the requirements for portable and fixed electric baseboard heating equipment rated at 600 volts or less, to be employed in ordinary locations in accordance with NFPA 70. This standard is available through HUD's online reading room.

84. *UL 1479–2014, Standard for Fire Tests of Penetration Firestops*. This proposed rule would add this standard for incorporation by reference. This standard provides testing requirements of penetration firestops of various materials and construction that are intended for use in openings in fire resistive wall, floor, or floor-ceiling assemblies, and membrane type penetration firestops of various materials and construction that are intended for use in openings in fire resistive wall assemblies. This standard is available through HUD's online reading room.

85. *UL 1995–2011, Heating and Cooling Equipment*. The proposed rule would update UL 1995, Heating and Cooling Equipment, Second Edition, with 1999 revisions. This standard sets forth the requirements for the following stationary equipment for use in nonhazardous locations rated greater than 600 volts up to 7200 V, and remote control assemblies for such equipment: heat pumps, air conditioners, liquid chillers and compressor-evaporator or liquid chiller assemblies, add-on heat pumps and heat pump water heaters, refrigerant desuperheaters, and packaged heat pump water heaters. This standard is available through HUD's online reading room.

86. *UL 2034–2016, Standard for Single and Multiple Station Carbon Monoxide Alarms*. This standard has already been approved for incorporation by reference for § 3280.211(a) by the Director of the Office of the Federal Register and is unchanged but is being proposed for incorporation by reference into §§ 3280.209 and 3280.703. This standard is available through HUD's online reading room.

87. *UL 60335–2–34–2012, Standard for Household and Similar Electrical Appliances—Safety, Part 2–34: Particular Requirements for Motor-Compressors*. The proposed rule would add this standard for incorporation by reference. This standard deals with the

safety of sealed (hermetic and semi-hermetic type) motor-compressors, their protection and control systems, if any, which are intended for use in equipment for household and similar purposes and which conform with the standards applicable to such equipment. This standard is available through HUD's online reading room.

88. *WDMA I.S.4-2009, Industry Specification for Preservative Treatment for Millwork*. The proposed rule would update NWWDA I.S.4-81, *Water Repellent Preservative Non-Pressure Treatment for Millwork*. This specification provides a nationally recognized standard for the water-repellent preservative treatment for millwork and serves as a basis of common understanding for producers, preservative formulators, distributors and users. The standard is also intended to promote fair competition within the industry and to aid purchasers and users in obtaining properly treated millwork. This standard is available through HUD's online reading room.

In addition to reviewing these standards on-line, copies of the standards may be obtained from the organization that developed the standard as follows:

AAMA—American Architectural Manufacturers Association, now known as Fenestration and Glazing Industry Alliance, 1900 E Golf Road, Schaumburg, Illinois 60173, website: [www.fgiaonline.org](http://www.fgiaonline.org).

AFPA—American Forest and Paper Association, 1101 K Street NW, Suite 700, Washington, DC, telephone number 202-463-2700, website: [www.afandpa.org](http://www.afandpa.org).

AHRI—Air Conditioning, Heating & Refrigeration Institute, 2311 Wilson Blvd., Suite 400, Arlington, VA 22201, telephone number 703-524-8800, fax number 703-528-3816, website: [www.ahrinet.org](http://www.ahrinet.org).

AISC—American Institute of Steel Construction, 130 East Randolph Street, Suite 2000, Chicago, IL 60601-6219, telephone number 312-670-2400, fax number 312-626-2402, website: [www.aisc.org](http://www.aisc.org).

AISI—American Iron and Steel Institute, 25 Massachusetts Avenue NW, Suite 800, Washington, DC 20001, telephone number 202-452-7100, website: [www.steel.org](http://www.steel.org).

ANSI—American National Standards Institute, 25 West 43rd Street, 4th Floor, New York, NY 10036, (212) 642-4900, fax (212) 398-0023, website: [www.ansi.org](http://www.ansi.org).

APA—The Engineered Wood Association (formerly American Plywood Association), 7011 South

19th Street, Tacoma, WA 98466-5333, telephone number 253-565-6600, fax number 253-565-7265, website: [www.apawood.org](http://www.apawood.org).

ASME—American Society of Mechanical Engineers, Two Park Avenue, New York, NY 10016-5990, telephone number 800-843-2763, website: [www.asme.org](http://www.asme.org).

ASCE/SEI—American Society of Civil Engineers/Structural Engineering Institute, 1801 Alexander Bell Drive, Reston, VA 20191, telephone number 800-548-2723, website: [www.asce.org](http://www.asce.org).

ASHRAE—American Society of Heating, Refrigerating and Air-Conditioning Engineers, 180 Technology Parkway NW, Peachtree Corners, GA 30092, telephone number 404-636-8400, fax 404-321-5478, website: [www.ashrae.org](http://www.ashrae.org).

ASME—American Society of Mechanical Engineers, Two Park Avenue, New York, NY 10016, telephone number 800-843-2763, website: [www.asme.org](http://www.asme.org).

ASTM—ASTM, International Headquarters, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, 1-877-909-2786 (USA & Canada), fax number 610-832-9555, website: [www.astm.org](http://www.astm.org).

AWC—American Wood Council, 222 Catocin Circle SE, Suite 201, Leesburg, VA 20175, telephone number 202-463-2766, website: [www.awc.org](http://www.awc.org).

CPA—Composite Panel Association (formerly the American Hardboard Association), 19465 Deerfield Ave., Suite 306, Leesburg, VA 20176, telephone number 1-703-724-1128, website: [compositepanel.org](http://compositepanel.org).

HPVA—Decorative Hardwoods Association (formerly HPVA), 42777 Trade West Drive, Sterling, VA 20166, telephone number 703-435-2900, fax 703-435-2537, website: [www.decorativehardwoods.org](http://www.decorativehardwoods.org).

IAPMO—International Association of Plumbing and Mechanical Officials, 4755 East Philadelphia Street, Ontario, CA 91716, telephone number 909-472-4100, fax number 909-472-4150, website: [www.iapmo.org](http://www.iapmo.org).

ICC-ES—International Code Council Evaluation Service, 3060 Saturn Street, Suite 100, Brea, CA 92821, telephone number 1-800-423-6587, fax (562) 695-4694, website: [www.icc-es.org](http://www.icc-es.org).

International Organization for Standardization/International Electrotechnical Commission, Chemin de Blandonnet 8, CP 401-1214 Vernier, Geneva, Switzerland, telephone number +41 22 749 01 11, website: [www.iso.org](http://www.iso.org).

NFPA—National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, telephone number (617) 770-3000, fax (508) 895-8301, website: [www.nfpa.org](http://www.nfpa.org).

SAE—Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096, telephone number 724-776-4841, fax number 724-776-0790, website: [www.sae.org](http://www.sae.org).

TPI—Truss Plate Institute, 2670 Crain Highway, Suite 203, Waldorf, MD 20601, telephone number 240-587-5582, fax number 866-501-4012, website: [www.tpinst.org](http://www.tpinst.org).

UL—Underwriters' Laboratories, Inc., 333 Pfingsten Road, Northbrook, IL 60062, telephone number 847-272-8800, fax number 847-509-6257, website: [www.ul.com](http://www.ul.com).

WDMA—Window and Door Manufacturers Association, 2001 K Street NW, 3rd Floor North, Washington, DC 20006, telephone number 202-367-1157, website: [www.wdma.com](http://www.wdma.com).

#### IV. Findings and Certifications

##### *Regulatory Planning and Review*

Under Executive Order 12866 (Regulatory Planning and Review), a determination must be made whether a regulatory action is significant and, therefore, subject to review by the Office of Management and Budget (OMB) in accordance with the requirements of the order. Executive Order 13563 (Improving Regulations and Regulatory Review) directs executive agencies to analyze regulations that are “outmoded, ineffective, insufficient, or excessively burdensome, and to modify, streamline, expand, or repeal them in accordance with what has been learned.” Executive Order 13563 also directs that, where relevant, feasible, and consistent with regulatory objectives, and to the extent permitted by law, agencies are to identify and consider regulatory approaches that reduce burdens and maintain flexibility and freedom of choice for the public.

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 at either [www.regulations.gov](http://www.regulations.gov) or in the Regulations Division, Office of the

General Counsel, Room 10276, 451 7th Street SW, Washington, DC 20410-0500. HUD strongly encourages the public to view the docket file at [www.regulations.gov](http://www.regulations.gov). Due to security measures at the HUD Headquarters building, please schedule an appointment to review the docket file by calling the Regulations Division at 202-402-3055 (this is not a toll-free number). Individuals with speech or hearing impairments may access this number via TTY by calling the Federal Relay Service at toll-free 800-877-8339.

#### *Paperwork Reduction Act*

The information collection requirements contained in this proposed rule have been approved by the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501-3520). In accordance with the Paperwork Reduction 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.

#### *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 on [www.regulations.gov](http://www.regulations.gov) and 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.

#### *Regulatory Flexibility Act*

The Regulatory Flexibility Act (RFA) (5 U.S.C. 601 *et seq.*) generally requires

an agency to conduct a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements, unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities.

The rule, as proposed, 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 1,250 employees. HUD believes that many of the manufacturers included under this NAICS definition fall below the small business threshold of 1250 employees. The proposed rule would apply to all of the manufacturers. The rule would, thus, affect a substantial number of small entities. HUD has determined, however, that this rule would not have a significant economic impact on a substantial number of small entities.

As discussed in the economic impact analysis prepared for this proposed rule, however, most of the revisions proposed by this rule would not affect costs of manufacturers, large or small, and provide benefit to homeowners. Further, of the nine code changes proposed by this rule that would affect the cost of design, production, or installation of manufactured homes, seven would decrease the costs of manufacturing or would provide manufacturers additional flexibility in the design of the home. Only two proposed revisions would increase costs and have an ambiguous impact on costs. The proposed revisions that increase costs, however, would increase fire safety save lives, reduce injury, and reduce property damage. This rule also proposes four changes that would eliminate the need for manufacturers to prepare and submit an Alternate Construction (AC) letter, providing all manufacturers, large and small, additional cost savings and increased flexibility in design. These provisions would provide additional options and increased flexibility in, for example, the design of accessible shower stalls, multi-unit homes and revised floor plans.

Overall, the regulatory impact analysis prepared for this proposed rule concluded that the decreased costs of design, production and installation of manufactured homes would be between \$9.5 million to \$23.3 million, annually. This overall decrease in production cost for the manufacturer associated with this proposed rule would reduce burden and result in an overall positive economic impact on manufacturers and consumers. The regulatory impact

analysis also provides that the rule, as proposed, would produce net benefits ranging from \$18.8 million to \$21.8 million.

Notwithstanding HUD's determination that this rule, as proposed, 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.

#### **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**

##### *24 CFR Part 3280*

Housing standards, Incorporation by reference, Manufactured homes.

##### *24 CFR Part 3282*

Administrative practice and procedure, Consumer protection, Intergovernmental relations, Investigations, Manufactured homes, Reporting and recordkeeping requirements, Warranties.

##### *24 CFR Part 3285*

Housing standards, Manufactured homes.

##### *24 CFR Part 3286*

Administrative practice and procedure, Consumer protection, Intergovernmental relations, Manufactured homes, Reporting and recordkeeping requirements.

For the reasons discussed in the preamble, HUD proposes to amend 24 CFR parts 3280, 3282, 3285, and 3286 as follows:

## PART 3280—MANUFACTURED HOME CONSTRUCTION AND SAFETY STANDARDS

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

**Authority:** 15 U.S.C. 2697, 42 U.S.C. 3535(d), 5403, and 5424.

■ 2. Amend § 3280.2 as follows:

■ a. Revise definition for “Certification label”;

■ b. Add, in alphabetical order, a definition for “Dwelling”;

■ c. Revise definition for “Dwelling unit”;

■ d. Add, in alphabetical order, definitions for “Multipurpose fire sprinkler system”, “Stand-alone fire sprinkler system”; and “Water resistive barrier”.

The revisions and additions read as follows:

### § 3280.2 Definitions.

\* \* \* \* \*

*Certification label* means the approved form of certification by the manufacturer that, under § 3280.11, is permanently affixed to each transportable section of each manufactured home manufactured for sale in the United States.

*Dwelling* means any structure that contains one to a maximum of three dwelling units, designed to be permanently occupied for residential living purposes.

*Dwelling unit* means a single unit that provides complete independent living facilities for one or more persons, where the occupancy is primarily permanent in nature, including permanent provisions for separate living, sleeping, cooking, eating, and sanitation.

\* \* \* \* \*

*Multipurpose fire sprinkler system* means a system that supplies domestic water to both plumbing fixtures and fire sprinklers.

\* \* \* \* \*

*Stand-alone fire sprinkler system* means a system that is separate and independent from the water distribution system.

\* \* \* \* \*

*Water resistive barrier* means a material behind the exterior wall covering that is intended to prevent liquid water that has penetrated behind the exterior covering from intruding further into the exterior wall assembly.

\* \* \* \* \*

■ 3. Revise and republish § 3280.4 to read as follows:

### § 3280.4 Incorporation by reference.

Certain material is incorporated by reference in this part with the approval

of the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the U.S. Department of Housing and Urban Development (Department) must publish a document in the **Federal Register** and the material must be available to the public. All approved incorporation by reference (IBR) material is available for inspection at the Department and at the National Archives and Records Administration (NARA). Contact the Department at: Office of Manufactured Housing Program, Manufactured Housing and Construction Standards Division, U.S. Department of Housing and Urban Development, 451 Seventh Street SW, Room B-133, Washington, DC 20410, email [mhs@hud.gov](mailto:mhs@hud.gov). For information on the availability of this material at NARA, email [fr.inspection@nara.gov](mailto:fr.inspection@nara.gov) or go to [www.archives.gov/federal-register/cfr/ibr-locations.html](http://www.archives.gov/federal-register/cfr/ibr-locations.html). Copies of incorporated standards that are not available from their producer organizations may be obtained from the Office of Manufactured Housing Programs. The material may be obtained from the following source(s):

(a) Air Conditioning, Heating & Refrigeration Institute (AHRI), 2311 Wilson Blvd., Suite 400, Arlington, VA 22201; telephone: 703-524-8800; fax: 703-528-3816; website: [www.ahrinet.org](http://www.ahrinet.org).

(1) ANSI/AHRI Standard 210/240-2008 with Addenda 1 and 2, Unitary Air-Conditioning and Air-Source Heat Pump Equipment, 2008; IBR approved for §§ 3280.511(b); 3280.703(d); 3280.714(a).

(2) [Reserved]

(b) Aluminum Association (AA), 1525 Wilson Blvd., Suite 600, Arlington, VA 22209; telephone: 703-358-2960; fax: 703-358-3921; website: [www.aluminum.org](http://www.aluminum.org).

(1) Aluminum Design Manual, Specifications and Guidelines for Aluminum Structures, Part 1-A, Sixth Edition, October 1994; IBR approved for § 3280.304(b).

(2) Aluminum Design Manual, Specifications and Guidelines for Aluminum Structures, Part 1-B, First Edition, October 1994; IBR approved for § 3280.304(b).

(c) American Forest and Paper Association (AFPA), 1101 K Street NW, Suite 700, Washington, DC 20005; telephone: 202-463-2700; website: [www.afandpa.org](http://www.afandpa.org).

(1) AFPA, Wood Structural Design Data, 1986 Edition with 1992 Revisions; IBR approved for § 3280.304(b).

(2) [Reserved]

(d) American Gas Association (AGA), 400 North Capitol Street NW, Washington, DC 20001; telephone: 202-824-7000; website: [www.aga.org](http://www.aga.org).

(1) AGA No. 3-87, Requirements for Gas Connectors for Connection of Fixed Appliances for Outdoor Installation, Park Trailers, and Manufactured (Mobile) Homes to the Gas Supply; IBR approved for § 3280.703(d).

(2) [Reserved]

(e) American Institute of Steel Construction (AISC), 130 East Randolph Street, Suite 2000, Chicago, IL 60601-6219; telephone: 312-670-2400; fax: 312-626-2402; website: [www.aisc.org](http://www.aisc.org).

(1) AISC 360-10, Specification for Structural Steel Buildings, June 22, 2010; IBR approved for §§ 3280.304(b); 3280.305(j).

(2) [Reserved]

(f) American Iron and Steel Institute (AISI), 25 Massachusetts Avenue NW, Suite 800, Washington, DC 20001; telephone: 202-452-7100; website: [www.steel.org](http://www.steel.org).

(1) AISI S100-12, North American Specification for the Design of Cold-Formed Steel Structural Members, 2012; IBR approved for §§ 3280.304(b); 3280.305(j).

(2) [Reserved]

(g) American National Standards Institute (ANSI), 25 West 43rd Street, 4th floor, New York, NY 10018; telephone: 212-642-4900; fax: 212-398-0023; website: [www.ansi.org](http://www.ansi.org).

(1) ANSI A112.14.1-1975, Backflow Valves; IBR approved for § 3280.604(c).

(2) ANSI A112.19.5-1979, Trim for Water Closet, Bowls, Tanks, and Urinals; IBR approved for § 3280.604(c).

(3) ANSI/AITC A190.1-1992, For wood products—Structural Glued Laminated Timber; IBR approved for § 3280.304(b).

(4) ANSI A208.1-2009, Particleboard, 2009; IBR approved for § 3280.304(b).

(5) ANSI A208.2-2002, Medium Density Fiberboard (MDF) For Interior Applications, approved May 13, 2002; IBR approved for § 3280.304(b).

(6) ANSI B16.18-1984, Cast Copper Alloy Solder-Joint Pressure Fittings; IBR approved for § 3280.604(c).

(7) ANSI C72.1-1972, section 4.3.1, Household Automatic Electric Storage Type Water Heaters; IBR approved for § 3280.707(d).

(8) ANSI LC 1-2014, Fuel Gas Piping Systems Using Corrugated Stainless Steel Tubing, 2014; IBR approved for § 3280.705(b).

(9) ANSI Z21.1-2016, Household Cooking Gas Appliances, 2016; IBR approved for § 3280.703(a).

(10) ANSI Z21.5.1-2015, Gas Clothes Dryers Volume 1, Type 1 Clothes Dryers, 2015; IBR approved for § 3280.703(a).

(11) ANSI Z21.10.1–2014, Gas Water Heaters—Volume 1, Storage Water Heaters with Input Ratings of 75,000 BTU per hour or Less, 2014; IBR approved for §§ 3280.703(a); 3280.707(d).

(12) ANSI Z21.10.3–2014, Gas-fired Water Heaters, Volume 3, Storage Water Heaters with Input Ratings Above 75,000 BTU per hour, Circulating and Instantaneous, 2015; IBR approved for § 3280.703(a).

(13) ANSI Z21.15–2009, Manually Operated Gas Valves for Appliances, Appliance Connector Valves and Hose End Valves, 2009; IBR approved for §§ 3280.703(c); 3280.705(c) and (l).

(14) ANSI Z21.19–2014, Refrigerators Using Gas Fuel, 2014; IBR approved for § 3280.703(a).

(15) ANSI Z21.20–2014, Automatic Gas Ignition Systems and Components, 2014; IBR approved for § 3280.703(d).

(16) ANSI Z21.21–2012, Automatic Valves for Gas Appliances, 2012; IBR approved for § 3280.703(d).

(17) ANSI Z21.22–1999, Relief Valves for Hot Water Supply Systems; IBR approved for §§ 3280.604(c); 3280.703(d).

(18) ANSI Z21.23–2000 (R2005) Gas Appliance Thermostats with ANSI Z21.23a–2003 (Addenda 1) and ANSI Z21.23b–2005 (Addenda 2), approved January 17, 2001; IBR approved for § 3280.703(d).

(19) ANSI Z21.24–2006, (R2011) Connectors for Gas Appliances, 2011; IBR approved for § 3280.703(c).

(20) ANSI Z21.40.1–1996, Gas-Fired, Heat Activated Air Conditioning and Heat Pump Appliances, 1996; IBR approved for §§ 3280.703(a); 3280.714(a).

(21) ANSI Z21.47–2012, Gas-Fired Central Furnaces (Except Direct Vent Systems), 2012; IBR approved for § 3280.703(a).

(22) ANSI Z21.75–2007, Connectors for Outdoor Gas Appliances and Manufactured Homes, 2007; IBR approved for § 3280.703(a).

(23) ANSI Z34.1–1993, Third-Party Certification Programs for Products, Processes, and Services; IBR approved for §§ 3280.403(e); 3280.405(e).

(24) ANSI Z97.1–2009, Standard for Safety Glazing Materials used in Buildings—Safety Performance Specifications and Methods of Test, 2009; IBR approved for §§ 3280.113(d); 3280.304(b); 3280.403(d); 3280.607(b); 3280.703(d).

(25) ANSI Z124.1–1987, Plastic Bathtub Units with Addendum Z124.1a–1990 and Z124.1b–1991; IBR approved for § 3280.604(c).

(26) ANSI Z124.2–1987, Plastic Shower Receptors and Shower Stalls

with Addendum Z124.2a–1990; IBR approved for § 3280.604(c).

(27) ANSI Z124.3–1986, Plastic Lavatories with Addendum Z124.3a–1990; IBR approved for § 3280.604(c).

(28) ANSI Z124.4–1986, Plastic Water Closets, Bowls, and Tanks with Addenda Z124.4a–1990; IBR approved for § 3280.604(c).

(29) ANSI Z124.5–1997, Plastic Toilet (Water Closets) Seats; IBR approved for § 3280.604(c).

(30) ANSI Z124.7–1997, Prefabricated Plastic Spa Shells; IBR approved for § 3280.604(c).

(31) ANSI Z–124.9–1994, Plastic Urinal Fixtures; IBR approved for § 3280.604(c).

(h) American Society of Civil Engineers (ASCE), 1801 Alexander Bell Drive, Reston, VA 20191; telephone: 800–548–2723; website: [www.asce.org](http://www.asce.org).

(1) ASCE/SEI 7–05, Minimum Design Loads for Buildings and Other Structures, 2005; IBR approved for §§ 3280.5(f); 3280.304(b); 3280.305(c).

(2) SEI/ASCE 8–02, Specification for the Design of Cold-Formed Stainless Steel Structural Members, 2002; IBR approved for §§ 3280.304(b); 3280.305(j).

(3) ASCE 19–96, Structural Applications of Steel Cables for Buildings; IBR approved for § 3280.304(b).

(i) American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), 1791 Tullie Circle NE, Atlanta, GA 30329; telephone: 404–636–8400; fax: 404–321–5478; website: [www.ashrae.org/home/](http://www.ashrae.org/home/).

(1) 1997 ASHRAE Handbook of Fundamentals, chapters 22 through 27, (except for the following parts of this standard that are not incorporated by reference: 23.1 Steel Frame Construction; 23.2 Masonry Construction; 23.3 Foundations and Floor Systems; 23.15 Pipes; 23.17 Tanks, Vessels, and Equipment; 23.18 Refrigerated Rooms and Buildings; 24.18 Mechanical and Industrial Systems; 25.19 Commercial Building Envelope Leakage; 27.9 Calculation of Heat Loss from Crawl Spaces), Inch-Pound Edition (1997); IBR approved for §§ 3280.508(a) and (e); 3280.511(a).

(2) ANSI/ASHRAE 62.2–2013, Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings; IBR approved for §§ 3280.103(d) and (e); 3280.703(d).

(j) American Society of Mechanical Engineers (ASME), Two Park Avenue, New York, NY 10016–5990; telephone: 800–843–2763; website: [www.asme.org/](http://www.asme.org/).

(1) ASME A112.1.2–1991, Air Gaps in Plumbing Systems; IBR approved for § 3280.604(c).

(2) ANSI/ASME A112.4.1–1993, Water Heater Relief Valve Drain Tubes; IBR approved for § 3280.604(c).

(3) ANSI/ASME A112.4.3–1999, Plastic Fittings for Connecting Water Closets to the Sanitary Drainage System; IBR approved for § 3280.604(c).

(4) ASME/ANSI A112.18.1M–1989, Plumbing Fixture Fittings; IBR approved for § 3280.604(c).

(5) ASME A112.18.3M–1996, Performance Requirements for Backflow Protection Devices and Systems in Plumbing Fixture Fittings; IBR approved for § 3280.604(c).

(6) ASME A112.18.6–1999, Flexible Water Connectors; IBR approved for § 3280.604(c).

(7) ASME A112.18.7–1999, Deck Mounted Bath/Shower Transfer Valves with Integral Backflow Protection; IBR approved for § 3280.604(c).

(8) ANSI/ASME A112.19.1M–1987, Enameled Cast Iron Plumbing Fixtures; IBR approved for § 3280.604(c).

(9) ANSI/ASME A112.19.2(M)-1990, Vitreous China Plumbing Fixtures; IBR approved for § 3280.604(c).

(10) ANSI/ASME A112.19.3M–1987, Stainless Steel Plumbing Fixtures (Designed for Residential Use); IBR approved for § 3280.604(c).

(11) ANSI/ASME A112.19.4(M)-1984, Porcelain Enameled Formed Steel Plumbing Fixtures; IBR approved for § 3280.604(c).

(12) ASME A112.19.6–1995, Hydraulic Performance Requirements for Water Closets and Urinals; IBR approved for § 3280.604(c).

(13) ASME/ANSI A112.19.7M–1987, Whirlpool Bathtub Appliances; IBR approved for § 3280.604(c).

(14) ASME/ANSI A112.19.8M–1989, Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Whirlpool Bathtub Appliances; IBR approved for § 3280.604(c).

(15) ASME A112.19.9M–1991, Non-Vitreous Ceramic Plumbing Fixtures; IBR approved for § 3280.604(c).

(16) ASME A112.19.10–1994, Dual Flush Devices for Water Closets; IBR approved for § 3280.604(c).

(17) ANSI/ASME A112.21.3M–1985, Hydrants for Utility and Maintenance Use; IBR approved for § 3280.604(c).

(18) ANSI/ASME B1.20.1–2013, Pipe Threads, General Purpose (Inch), 2013; IBR approved for §§ 3280.604(c); 3280.703(b); 3280.705(e); 3280.706(d).

(19) ANSI/ASME B16.3–1992, Malleable Iron Threaded Fittings; IBR approved for § 3280.604(c).

(20) ANSI/ASME B16.4–1992, Gray Iron Threaded Fittings; IBR approved for § 3280.604(c).

(21) ANSI/ASME B16.15–1985, Cast Bronze Threaded Fittings, Classes 125 and 250; IBR approved for § 3280.604(c).

(22) ASME/ANSI B16.22–1989, Wrought-Copper and Copper Alloy Solder-Joint Pressure Fitting; IBR approved for § 3280.604(c).

(23) ASME B16.23–1992, Cast Copper Alloy Solder-Joint Drainage Fittings-DWV; IBR approved for § 3280.604(c).

(24) ASME/ANSI B16.26–1988, Cast Copper Alloy Fittings for Flared Copper Tubes; IBR approved for § 3280.604(c).

(25) ASME/ANSI B16.29–1986, Wrought Copper and Wrought Copper Alloy Solder-Joint Drainage Fittings-DWV; IBR approved for § 3280.604(c).

(26) ANSI/ASME B36.10–2004, Welding and Seamless Wrought Steel Pipe; 2004; IBR approved for §§ 3280.604(c); 3280.703(b), 3280.705(b); 3280.706(b).

(k) American Society of Sanitary Engineering (ASSE), 901 Canterbury, Suite A, Westlake, OH 44145; telephone: 440–835–3040; fax: 440–835–3488; website: [www.asse-plumbing.org](http://www.asse-plumbing.org).

(1) ASSE 1001, Performance Requirements for Pipe Applied Atmospheric Type Vacuum Breakers (ANSI Approved 1990); IBR approved for § 3280.604(c).

(2) ASSE 1002, Performance Requirements for Water Closet Flush Tank Fill Valves (Ballcocks), Revision 5–1986 (ANSI/ASSE–1979); IBR approved for § 3280.604(c).

(3) ASSE 1006, Plumbing Requirements for Residential Use (Household) Dishwashers (ASSE/ANSI–1986); IBR approved for § 3280.604(c).

(4) ASSE 1007–1986, Performance Requirements for Home Laundry Equipment; IBR approved for § 3280.604(c).

(5) ASSE 1008–1986, Performance Requirements for Household Food Waste Disposer Units; IBR approved for § 3280.604(c).

(6) ASSE 1011–1981, Performance Requirements for Hose Connection Vacuum Breakers (ANSI–1982); IBR approved for § 3280.604(c).

(7) ASSE 1014–1989, Performance Requirements for Hand-held Showers (ANSI–1990); IBR approved for § 3280.604(c).

(8) ASSE 1016–2005, Performance Requirements for Automatic Compensating Valves for Individual Shower and Tub/Shower Combinations, approved January 2005; IBR approved for §§ 3280.604(c); 3280.607(b).

(9) ASSE 1017–1986, Performance Requirements for Temperature Activated Mixing Valves for Primary Domestic Use; IBR approved for § 3280.604(c).

(10) ANSI/ASSE 1019–1978, Performance Requirements for Wall Hydrants, Frost Proof Automatic Draining, Anti-Backflow Types; IBR approved for § 3280.604(c).

(11) ASSE 1023, Performance Requirements for Hot Water Dispensers, Household Storage Type Electrical (ANSI/ASSE–1979); IBR approved for § 3280.604(c).

(12) ASSE 1025, Performance Requirements for Diverters for Plumbing Faucets with Hose Spray, Anti-Siphon Type, Residential Applications (ANSI/ASSE–1978); IBR approved for § 3280.604(c).

(13) ASSE 1037–1990, Performance Requirements for Pressurized Flushing Devices (Flushometers) for Plumbing Fixtures (ANSI–1990); IBR approved for § 3280.604(c).

(14) ASSE 1051, Performance Requirements for Air Admittance Valves for Plumbing Drainage Systems—Fixture and Branch Devices Revised 1996 (ANSI 1998); IBR approved for § 3280.604(c).

(15) ASSE 1070–2004, Performance Requirements for Water Temperature Limiting Devices; IBR approved for §§ 3280.604(c); 3280.607(b).

(l) ASTM, International (ASTM), 100 Barr Harbor Drive, West Conshohocken, PA 19428–2959; telephone: 877–909–2786 (USA & Canada); fax: 610–832–9555; website: [www.astm.org](http://www.astm.org).

(1) ASTM A53/A53M–12, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless, 2012; IBR approved for §§ 3280.604(c); 3280.703(b).

(2) ASTM A74–92, Standard Specification for Cast Iron Soil Pipe and Fittings; IBR approved for § 3280.604(c).

(3) ASTM A539–99, Standard Specification for Electric-Resistance-Welded Coiled Steel Tubing for Gas and Fuel Oil Lines; IBR approved for §§ 3280.703(b); 3280.705(b); 3280.706(b).

(4) ASTM B42–10, Standard Specification for Seamless Copper Pipe, Standard Sizes, 2010; IBR approved for §§ 3280.604(c); 3280.703(c).

(5) ASTM B43–91, Standard Specification for Seamless Red Brass Pipe, Standard Sizes; IBR approved for §§ 3280.604(c); 3280.705(b).

(6) ASTM B88–14, Standard Specification for Seamless Copper Water Tube, 2014; IBR approved for §§ 3280.604(c); 3280.703(b); 3280.705(b); 3280.706(b).

(7) ASTM B251–10, Standard Specification for General Requirements for Wrought Seamless Copper and Copper-Alloy Tube; IBR approved for §§ 3280.604(c); 3280.703(c).

(8) ASTM B280–13, Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service, 2013; IBR approved for §§ 3280.703(c); 3280.705(b); 3280.706(b).

(9) ASTM B306–92, Standard Specification for Copper Drainage Tube (DWV); IBR approved for § 3280.604(c).

(10) ASTM C564–97, Standard Specification for Rubber Gaskets for Case Iron Soil Pipe and Fittings, approved December 10, 1997; IBR approved for §§ 3280.604(c); 3280.611(d).

(11) ASTM C920–02, Standard Specification for Elastomeric Joint Sealants, approved January 10, 2002; IBR approved for § 3280.611(d).

(12) ASTM C1396/C1396M–14, Standard Specification for Gypsum Board, 2014; IBR approved for § 3280.304(b).

(13) ASTM D781–68 (Reapproved 1973), Standard Test Methods for Puncture and Stiffness of Paperboard, and Corrugated and Solid Fiberboard; IBR approved for §§ 3280.304(b); 3280.305(g).

(14) ASTM D2235–88, Standard Specification for Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings; IBR approved for § 3280.604(c).

(15) ASTM D2564–91a, Standard Specification for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping Systems; IBR approved for § 3280.604(c).

(16) ASTM D2661–91, Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe and Fittings; IBR approved for § 3280.604(c).

(17) ASTM D2665–91b, Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings; IBR approved for § 3280.604(c).

(18) ASTM D2846–92, Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Hot- and Cold-Water Distribution Systems; IBR approved for § 3280.604(c).

(19) ASTM D3309–92a, Standard Specification for Polybutylene (PB) Plastic Hot- and Cold-Water Distribution Systems; IBR approved for § 3280.604(c).

(20) ASTM D3311–92, Standard Specification for Drain, Waste, and Vent (DWV) Plastic Fittings Patterns; IBR approved for § 3280.604(c).

(21) ASTM D3679–09a, Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Siding, 2009; IBR approved for §§ 3280.304(b); 3280.309(b).

(22) ASTM D3953–97, Standard Specification for Strapping, Flat Steel, and Seals, approved April 10, 1997; IBR approved for §§ 3280.306(b); 3280.306(g).

(23) ASTM D4442–07, Standard Test Methods for Direct Moisture Content Measurement of Wood & Wood-Base Materials, 2007; IBR approved for § 3280.304(b).

(24) ASTM D4444–13, Standard Test Methods for Use and Calibration of Hand-Held Moisture Meters, 2013; IBR approved for § 3280.304(b).

(25) ASTM D4635–01, Standard Specification for Polyethylene Films Made from Low-Density Polyethylene for General Use and Packaging Applications, approved June 10, 2001; IBR approved for § 3280.611(d).

(26) ASTM D4756–06, Standard Practice for Installation of Rigid Poly (Vinyl Chloride) (PVC) Siding and Soffit, 2006; IBR approved for §§ 3280.304(b); 3280.309(c).

(27) ASTM D6007–14, Standard Test Method for Determining Formaldehyde Concentrations in Air from Wood Products Using a Small Air Chamber, approved October 1, 2014; IBR approved for § 3280.406(b).

(28) ASTM D7254–07, Standard Specification for Polypropylene (PP) Siding, 2007; IBR approved for §§ 3280.304(b); 3280.309(c).

(29) ASTM E84–01, Standard Test Method for Surface Burning Characteristics of Building Materials, 2001; IBR approved for § 3280.203(a).

(30) ASTM E90–09, Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements, 2009; IBR approved for § 3280.115(b).

(31) ASTM E96/E96M–13 Standard Test Methods for Water Vapor Transmission of Materials, 2013; IBR approved for § 3280.504(a) and (c).

(32) ASTM E119–14, Standard Test Methods for Fire Tests of Building Construction and Materials, 2014; IBR approved for §§ 3280.215(a) and (d); 3280.304(b); 3280.1003(a).

(33) ASTM E162–94, Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source; IBR approved for § 3280.203(a).

(34) ASTM E492–09, Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine, 2009; IBR approved for § 3280.115(c).

(35) ASTM E773–97, Standard Test Methods for Accelerated Weathering of Sealed Insulating Glass Units; IBR approved for § 3280.403(d).

(36) ASTM E774–97, Standard Specification for the Classification of

the Durability of Sealed Insulating Glass Units; IBR approved for § 3280.403(d).

(37) ASTM E814–13, Standard Test Method for Fire Tests of Penetration Firestop Systems, 2013; IBR approved for § 3280.215(d).

(38) ASTM E1333–14, Standard Test Method for Determining Formaldehyde Concentrations in Air and Emission Rates from Wood Products Using a Large Air Chamber, approved October 1, 2014; IBR approved for § 3280.406(b).

(39) ASTM F628–91, Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40, Plastic Drain, Waste, and Vent Pipe with a Cellular Core; IBR approved for § 3280.604(c).

(40) ASTM F876–10, Standard Specification for Crosslinked Polyethylene (PEX) Tubing, approved February 10, 2010; IBR approved for § 3280.604(c).

(41) ASTM F877–07, Standard Specification for Crosslinked Polyethylene (PEX) Plastic Hot- and Cold-Water Distribution Systems, approved February 1, 2007; IBR approved for § 3280.604(c).

(m) American Wood Council (AWC), 222 Catocin Circle SE, Suite 201, Leesburg, VA 20175; telephone: 202–463–2766; website: [www.awc.org](http://www.awc.org).

(1) AWC, Design Values for Joists & Rafters, 2012; IBR approved for § 3280.304(b).

(2) AWC NDS–2015, National Design Specifications for Wood Construction, 2015 Edition, with Supplement, Design Values for Wood Construction, September 30, 2014; IBR approved for §§ 3280.215(a); 3280.304(b).

(3) AWC PS–20–70–2012, Span Tables for Joists & Rafters, 2012; IBR approved for § 3280.304(b).

(n) Cast Iron Soil Pipe Institute (CISPI), 1064 Delaware Avenue SE, Atlanta, GA 30316; telephone: 404–622–0073; fax: 404–973–2845; website: [www.cispi.org/](http://www.cispi.org/).

(1) CISPI–301–90, Standard Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications; IBR approved for § 3280.604(c).

(2) CISPI–HSN–85, Specification for Neoprene Rubber Gaskets for HUB and Spigot Cast Iron Soil Pipe and Fittings; IBR approved for §§ 3280.604(c), 3280.611(d).

(o) Composite Panel Association (formerly the American Hardboard Association), 19465 Deerfield Ave, Suite 306, Leesburg, VA 20176; telephone: 703–724–1128; website: [www.compositepanel.org](http://www.compositepanel.org).

(1) ANSI/AHA A135.4–2012, Basic Hardboard, 2012; IBR approved for § 3280.304(b).

(2) ANSI/AHA A135.5–2012, Prefinished Hardboard Paneling, 2012; IBR approved for § 3280.304(b).

(3) ANSI/AHA A135.6–2012, Hardboard Siding, 2012 IBR approved for § 3280.304(b).

(p) Decorative Hardwoods Association (formerly HPVA), 42777 Trade West Drive, Sterling, VA 20166; telephone: 703–435–2900; fax: 703–435–2537; website: [www.decorativehardwoods.org](http://www.decorativehardwoods.org).

(1) ANSI/HPVA HP–1–2009, American National Standard for Hardwood and Decorative Plywood, 2009; IBR approved for § 3280.304(b).

(2) HP–SG–96, Structural Design Guide for Hardwood Plywood Wall Panels, revised 1996; IBR approved for § 3280.304(b).

(q) The Engineered Wood Association (APA) (formerly the American Plywood Association), 7011 South 19th Street, Tacoma, WA 98411; telephone: 253–565–6600; fax: 253–565–7265; website: [www.apawood.org](http://www.apawood.org).

(1) APA D510C–2012, Panel Design Specification, 2012; IBR approved for § 3280.304(b).

(2) APA E30P–1996, APA Design/Construction Guide, Residential and Commercial Structures; IBR approved for § 3280.304(b).

(3) APA E30V–2011, Engineered Wood Construction Guide, 2011; IBR approved for § 3280.304(b).

(4) APA H815G–2013, Design & Fabrication of All-Plywood Beams, 2013; IBR approved for § 3280.304(b).

(5) APA PS1–2009, Structural Plywood (with Typical APA Trademarks), 2009; IBR approved for § 3280.304(b).

(6) APA S811P–2013, Design & Fabrication of Plywood Curved Panels, 2013; IBR approved for § 3280.304(b).

(7) APA S812S–2013, Design & Fabrication of Glued Plywood-Lumber Beams, 2013; IBR approved for § 3280.304(b).

(8) APA U813M–2012, Design & Fabrication of Plywood Stressed-Skin Panels, 2012; IBR approved for § 3280.304(b).

(9) APA U814J–2013, Design & Fabrication of Plywood, Sandwiched Panels, 2013; IBR approved for § 3280.304(b).

(10) APA Y510–1998, Plywood Design, 1998; IBR approved for § 3280.304(b).

(r) FS—Federal Specifications, General Services Administration, Specifications Branch, Room 6039, GSA Building, 7th and D Streets SW, Washington, DC 20407.

(1) FS WW–P–541E/GEN–1980, Plumbing Fixtures (General

Specifications); IBR approved for § 3280.604(c).

(2) FS ZZ-R-765B-1970, Silicone Rubber, (with 1971 Amendment); IBR approved for § 3280.611(d).

(s) Fenestration and Glazing Industry Alliance (FGIA) (formerly known as American Architectural Manufacturers Association (AAMA)), 1900 E. Golf Road, Schaumburg, Illinois 60173; website: [www.fgiaonline.org](http://www.fgiaonline.org).

(1) AAMA 1503.1-88, Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors, and Glazed Wall Sections; IBR approved for § 3280.508(e).

(2) AAMA 1600/I.S.7-00, Voluntary Specification for Skylights, 2003 IBR approved for § 3280.305(c).

(3) AAMA 1701.2-12, Voluntary Standard for Utilization in Manufactured Housing for Primary Window and Sliding Glass Doors, 2012; IBR approved for §§ 3280.403(b) and (e); 3280.404(b) and (e).

(4) AAMA 1702.2-12, Voluntary Standard for Utilization in Manufactured Housing for Swinging Exterior Passage Door, 2012; IBR approved for §§ 3280.403(e); 3280.405(b) and (e).

(5) AAMA 1704-12, Voluntary Standard Egress Window Systems for Utilization in Manufactured Housing, 2012; IBR approved for § 3280.404(b) and (e).

(6) AAMA/WDMA/CSA 101/I.S.2/A440-17 North American Fenestration Standard/Specification for Windows, Doors, and Skylights, 2017; IBR approved for §§ 3280.304(b); 3280.403(b) and (e); 3280.404(b) and (e); 3280.405(b) and (e).

(t) HUD User, 11491 Sunset Hills Road, Reston, VA 20190-5254; telephone 800-245-2691; website: [www.huduser.gov](http://www.huduser.gov).

(1) HUD User No. 0005945, Overall U-values and Heating/Cooling Loads—Manufactured Homes, February 1992; IBR approved for § 3280.508(b).

(2) [Reserved]

(u) IIT Research Institute (IITRI), 10 West 35th Street, Chicago, IL 60616; telephone: 312-567-4000; website: [www.iitri.org/](http://www.iitri.org/).

(1) IITRI Fire and Safety Research Project J-6461 “Development of Mobile Home Fire Test Methods to Judge the Fire-Safe Performance of Foam Plastic Sheathing and Cavity Insulation”, 1979; IBR approved for § 3280.207(a).

(2) [Reserved]

(v) International Association of Plumbing and Mechanical Officials (IAPMO), 4755 East Philadelphia Street, Ontario, CA 91716; telephone: 909-472-4100; fax: 909-472-4150; website: [www.iapmo.org](http://www.iapmo.org).

(1) IAPMO PS 2-89, Material and Property Standard for Cast Brass and Tubing P-Traps; IBR approved for § 3280.604(c).

(2) IAPMO PS 4-90, Material and Property Standard for Drains for Prefabricated and Precast Showers; IBR approved for § 3280.604(c).

(3) IAPMO PS 5-84, Material and Property Standard for Special Cast Iron Fittings; IBR approved for § 3280.604(c).

(4) IAPMO PS 9-84, Material and Property Standard for Diversion Tees and Twin Waste Elbow; IBR approved for § 3280.604(c).

(5) IAPMO PS 14-89, Material and Property Standard for Flexible Metallic Water Connectors; IBR approved for § 3280.604(c).

(6) IAPMO PS 23-89, Material and Property Standard for Dishwasher Drain Airgaps; IBR approved for § 3280.604(c).

(7) IAPMO PS 31-91, Material and Property Standards for Backflow Prevention Assemblies; IBR approved for § 3280.604(c).

(8) IAPMO TSC 9-2003, Standard for Gas Supply Connectors for Manufactured Homes, 2003; IBR approved for § 3280.703(c).

(9) IAPMO TSC 22-85, Standard for Porcelain Enameled Formed Steel Plumbing Fixtures; IBR approved for § 3280.604(c).

(w) International Code Council Evaluation Service (ICC-ES), 3060 Saturn Street, Suite 100, Brea, CA 92821; telephone: 800-423-6587; fax: 562-695-4694; website: [www.icc-es.org](http://www.icc-es.org).

(1) ESR 1539-2014, ICC-ES Evaluation Report, Power Driven Staples and Nails, 2014; IBR approved for § 3280.304(b).

(2) [Reserved]

(x) International Organization for Standardization/International Electrotechnical Commission, Chemin de Blandonnet 8, CP 401-1214 Vernier, Geneva, Switzerland; telephone: +41 22 749 01 11; website: [www.iso.org](http://www.iso.org).

(1) ISO/IEC 17065-2012 Conformity Assessment—Requirements for Bodies Certifying Products, Processes and Services, 2012; IBR approved for § 3280.403(e); 3280.404(e); 3280.405(e).

(2) [Reserved]

(y) Military Specifications and Standards, Naval Publications and Forms Center (MIL), 5801 Tabor Avenue, Philadelphia, PA 19120; website: [www.dsp.dla.mil/](http://www.dsp.dla.mil/)

(1) MIL-L-10547E-1975, Liners, Case, and Sheet, Overwrap; Water-Vapor Proof or Waterproof, Flexible; IBR approved for § 3280.611(d).

(2) [Reserved]

(z) National Electrical Manufacturers Association (NEMA), 1300 North 17th Street, Suite 1752, Arlington, VA 22209;

telephone: 703-841-3200; fax: 703-841-5900; website: [www.nema.org/Pages/default.aspx](http://www.nema.org/Pages/default.aspx).

(1) ANSI/NEMA WD-6-1997 Wiring Devices-Dimensional Specifications; IBR approved for § 3280.803(f).

(2) [Reserved]

(aa) National Fenestration Rating Council (NFRC), 6305 Ivy Lane, Suite 140, Greenbelt, MD 20770; telephone: 301-589-1776; fax: 301-589-3884; website: [www.nfrc.org](http://www.nfrc.org).

(1) NFRC 100, Procedure for Determining Fenestration Product U-factors, 1997 Edition; IBR approved for § 3280.508(e).

(2) [Reserved]

(bb) National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02269; telephone: 617-770-3000; fax: 617-770-0700; website: [www.nfpa.org](http://www.nfpa.org).

(1) NFPA 13D-2010, Standard for the Installation of Sprinkler Systems in One and Two Family Dwellings and Manufactured Homes, 2010 Edition; IBR approved for § 3280.214(b), (e) and (o).

(2) NFPA 31-2011, Installation of Oil-Burning Equipment, 2011; IBR approved for §§ 3280.703(d); 3280.707(f).

(3) NFPA 54/ANSI Z223.1, National Fuel Gas Code, 2015; IBR approved for § 3280.703(d).

(4) NFPA 58-2014, Standard for the Storage and Handling of Liquefied Petroleum Gas, 2014 Edition, 2014; IBR approved for § 3280.703(d).

(5) NFPA 70-2014, National Electrical Code, 2014; IBR approved for §§ 3280.607(c); 3280.801(a) and (b); 3280.803(k); 3280.804(a) and (k); 3280.805(a); 3280.806(a) and (d); 3280.807(c); 3280.808(a), (l), and (p); 3280.810(b); 3280.811(b).

(6) NFPA 90B-2015, Warm Air Heating and Air Conditioning Systems, 2015; IBR approved for § 3280.703(d).

(7) NFPA 220, Standard on Types of Building Construction, Chapter 2: definitions of “limited combustible” and “noncombustible material”, 1995 Edition; IBR approved for § 3280.202.

(8) NFPA 253, Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source, 2000; IBR approved for § 3280.207(c).

(9) NFPA 255, Standard Method of Test of Surface Burning Characteristics of Building Materials, 1996; IBR approved for §§ 3280.203(a); 3280.207(a).

(10) NFPA 720, Standard for Installation of Carbon Monoxide Detection (CO) Detection and Warning Equipment, 2015 Edition; IBR approved for § 3280.211(b).

(cc) U.S. Department of Commerce, National Institute of Standards and



Technology (NIST), Office of Engineering Standards, Room A-166, Technical Building, Washington, DC 20234 and Voluntary Product Division, 100 Bureau Drive, Stop 2100, Gaithersburg, MD 20899-2100; telephone: 301-975-4000; fax: 301-975-4715; website: [www.nist.gov](http://www.nist.gov).

(1) PS 1-95, Construction and Industrial Plywood (With Typical APA Trademarks); IBR approved for § 3280.304(b).

(2) Voluntary Product Standard PS 2-04, Performance Standard for Wood-Based Structural-Use Panels, December 2004; IBR approved for § 3280.304(b).

(dd) National Sanitation Foundation (NSF), 789 North Dixboro Road, Ann Arbor, MI 48105; telephone: 734-769-8010 fax: 734-769-0109; website: [www.nsf.org](http://www.nsf.org).

(1) ANSI/NSF 14-1990, Plastic Piping Components and Related Materials; IBR approved for § 3280.604(c).

(2) ANSI/NSF 24-1988, Plumbing System Components for Manufactured Homes and Recreational Vehicles; IBR approved for § 3280.604(c).

(3) ANSI/NSF 61-2001, Drinking Water System Components-Health Effects; IBR approved for § 3280.604(b).

(ee) Resources, Applications, Designs, & Controls (RADCO), 3220 East 59th Street, Long Beach, CA 90805; telephone: 562-272-7231; fax: 562-529-7513; website: [www.radcoinc.com](http://www.radcoinc.com).

(1) RADCO DS-010-91, Decorative Gas Appliances for Installation in Solid Fuel Burning Fireplaces, May 1991; IBR approved for § 3280.703(a).

(2) [Reserved]

(ff) Society of Automotive Engineers (SAE), 400 Commonwealth Drive, Warrendale, PA 15096; telephone: 724-776-0790; website: [www.sae.org/](http://www.sae.org/).

(1) SAE J533b-2007, Flares for Tubing, 2007; IBR approved for §§ 3280.703(d); 3280.705(f).

(2) [Reserved]

(gg) Steel Joist Institute (SJI), 234 West Cheves Street, Florence, SC 29501; telephone: 843-407-4091; website: [www.steeljoist.org](http://www.steeljoist.org).

(1) Standard Specifications Load Tables and Weight Tables for Steel Joists and Girders, SJI 1994, Fortieth Edition; IBR approved for § 3280.304(b).

(2) [Reserved]

(hh) Truss Plate Institute (TPI), 2670 Crain Highway, Suite 203, Waldorf, MD 20601; telephone: 240-587-5582; fax: 866-501-4012; website: [www.tpinst.org](http://www.tpinst.org).

(1) TPI 1-2007 National Design Standard for Metal Plate Connected Wood Truss Construction, 2007; IBR approved for § 3280.304(b).

(2) [Reserved]

(ii) Underwriters' Laboratories, Inc. (UL), 333 Pfingsten Road, Northbrook,

IL 60062; telephone: 847-272-8800; fax: 847-509-6257; website: [www.ul.com](http://www.ul.com).

(1) UL 94-1996, with 2001 revisions, Test for Flammability of Plastic Materials for Parts in Devices and Appliances, Fifth Edition; IBR approved for § 3280.715(e).

(2) UL 103-2010, Chimneys, Factory-Built Chimneys Residential Type & Building Heating Appliance, 2010; IBR approved for § 3280.703(d).

(3) UL 109-2005, Tube Fittings for Flammable and Combustible Fluids, Refrigeration Service, and Marine Use, 2005; IBR approved for § 3280.703(d).

(4) UL 127-1996, with 1999 revisions, Factory-Built Fireplaces, Seventh Edition; IBR approved for § 3280.703(d).

(5) UL 174-2004, Household Electric Storage Tank Water Heaters, 2004; IBR approved for § 3280.703(a).

(6) UL 181-2013, Factory-Made Air Ducts & Air Connectors, 2013; IBR approved for §§ 3280.702, 3280.703(d); 3280.715(a) and (e).

(7) UL 181A-2013, Closure Systems for Use with Rigid Air Ducts and Air Connectors, 2013; IBR approved for §§ 3280.703(d); 3280.715(c).

(8) UL 181B, 1995, with 1998 revisions, Standard for Safety Closure Systems for use with Flexible Air Ducts and Air Connectors, First Edition; IBR approved for §§ 3280.703(d); 3280.715(c).

(9) UL 217, Single and Multiple Station Smoke Alarms, Fifth Edition, dated January 4, 1999; IBR approved for §§ 3280.208(a); 3280.211(a).

(10) UL 263-2014, Fire Tests of Building Construction Materials, 2014; IBR approved for § 3280.215(a) and (d).

(11) UL 268-1999, Smoke Detectors for Fire Protective Signaling Systems, 1999; IBR approved for §§ 3280.209(a); 3280.703(a).

(12) UL 307A-2009, Liquid Fuel Burning Heating Appliances for Manufactured Homes & Recreational Vehicles, 2009; IBR approved for §§ 3280.703(a); 3280.707(f).

(13) UL 307B-2009, Gas Burning Appliances for Manufactured Homes & Recreational Vehicles, 2009; IBR approved for § 3280.703(a).

(14) UL 311, 1994, with 1998 revisions, Roof Jacks for Manufactured Homes and Recreational Vehicles, Eighth Edition; IBR approved for § 3280.703(d).

(15) UL 441-2010, Gas Vents, 2010; IBR approved for § 3280.703(d).

(16) UL 499-2014, Standard for Electrical Heating Appliances, Edition 2014; IBR approved for § 3280.703(a).

(17) UL 569-2013, Pigtails & Flexible Hose Connectors for LP Gas, 2013; IBR approved for §§ 3280.703(d); 3280.705(l).

(18) UL 737, 1996, Fireplace Stoves, Eighth Edition, with 2000 revisions; IBR approved for § 3280.703(d).

(19) UL 923 Microwave Cooking Appliances, Fifth Edition, May 23, 2002; IBR approved for § 3280.204(c).

(20) UL 1042-2009, Electric Baseboard Heating Equipment, 2009; IBR approved for § 3280.703(a).

(21) UL 1096, 1986, Electric Central Air Heating Equipment, Fourth Edition with revisions July 16, 1986, and January 30, 1988; IBR approved for § 3280.703(a).

(22) UL 1479-2014, Standard for Fire Tests of Penetration Firestops, Fourth Edition, May 16, 2014; IBR approved for § 3280.215(d).

(23) UL 1482, 1996, with 2000 revisions, Solid-Fuel Type Room Heaters, Fifth Edition; IBR approved for § 3280.703(d).

(24) UL 1995-2011, Heating and Cooling Equipment, 2011; IBR approved for § 3280.703(a).

(25) UL 2021-1997, Fixed and Location-Dedicated Electric Room Heaters, Second Edition, with 1998 revisions; IBR approved for § 3280.703(a).

(26) ANSI/UL 2034-2016, Standard for Single and Multiple Station Carbon Monoxide Alarms, Third Edition, dated February 28, 2008 (including revisions through May 11, 2016); IBR approved for §§ 3280.209(a); 3280.211(a); 3280.703(a).

(27) UL 60335-2-34-2012, Standard for Household and Similar Electrical Appliances—Safety, Part 2-34: Particular Requirements for Motor-Compressors, 2012; IBR approved for § 3280.703(a).

(jj) Underwriters' Laboratories of Canada (ULC), 7 Underwriters Road, Toronto, Ontario, Canada M1 R 3A9; telephone: 866-937-3852; fax: 416-757-8727; website: [www.ul.com/canada/eng/pages/](http://www.ul.com/canada/eng/pages/).

(1) CAN/ULC S102.2-M88, Standard Method of Test for Surface Burning Characteristics of Floor Coverings and Miscellaneous Materials and Assemblies, Fourth Edition, April 1988; IBR approved for § 3280.207(b).

(2) [Reserved]

(kk)—Window and Door Manufacturers Association (WDMA), 2001 K Street NW, 3rd Floor North, Washington, DC 20006; telephone: 202-367-1157; website: [www.wdma.com](http://www.wdma.com).

(1) WDMA I.S.4-2009 Industry Specification for Preservative Treatment for Millwork; IBR approved for § 3280.405(c).

(2) [Reserved]

■ 4. Amend § 3280.5 as follows:

■ a. Revise the first sentence of the introductory text; and

■ b. In paragraph (g), remove the text “ASCE/SEI 7–88” and add, in its place, “ASCE/SEI 7–05”.

The revision reads as follows:

**§ 3280.5 Data Plate.**

Each dwelling unit of a manufactured home must bear a data plate affixed in a permanent manner near the main electrical panel or other readily accessible and visible location. \* \* \*

■ 5. Revise § 3280.102 to read as follows:

**§ 3280.102 Definitions.**

*Air, exhaust* means air discharged from any space to the outside by an exhaust system.

*Air, outdoor* means air from outside the building taken into a ventilation system or air from outside the building that enters a space through infiltration or natural ventilation openings.

*Exhaust system* means one or more exhaust fans that remove air from the building, causing outdoor air to enter by ventilation inlets or normal leakage paths through the building envelope.

*Gross floor area* means all space, wall to wall, including recessed entries not to exceed five (5) square feet and areas under built-in vanities and similar furniture. When the ceiling height is less than that specified in § 3280.104, the floor area under such ceilings must not be included in the gross floor area. Floor area of closets must also not be included in the gross floor area.

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

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

*Mechanical ventilation* means the active process of supplying air to or removing air from an indoor space by powered equipment such as motor-driven fans and blowers but not by devices such as wind-turbine ventilators and mechanically operated windows.

*Natural ventilation* means ventilation occurring as a result of natural forces, such as wind pressure or differences in air density, through intentional openings such as open windows or doors.

*Supply system* means one or more fans that supply outdoor air to the building, causing indoor air to leave by normal air leakage through the building envelope.

*Ventilation* means the process of supplying outdoor air to or removing

indoor air from the manufactured home by natural or mechanical means. Such air may or may not have been conditioned.

■ 6. Amend § 3280.103 as follows:

■ a. Revise introductory text of paragraph (b) and paragraphs (b)(1) and (3), (c) and (3), and (d); and

■ b. Add paragraph (e).

The revisions and addition read as follows:

**§ 3280.103 Light and Ventilation.**

(b) *Whole-house ventilation.* Each dwelling unit of a manufactured home must be provided with a whole-house mechanical ventilation having the capability to provide a minimum capacity of 0.035 ft<sup>3</sup>/min/ft<sup>2</sup> of interior floor space or its hourly average equivalent. This ventilation capacity must be in addition to any openable window area. In no case shall the installed ventilation capacity of the system be less than 50 cfm. The following criteria must be adhered to:

(1) The ventilation capacity must be provided by a mechanical ventilation system or a combination natural and mechanical ventilation system.

(3) The ventilation supply system or a portion of the ventilation supply system is permitted to be integral with the home’s heating or cooling system. The supply system must be capable of operating independently of the heating and cooling modes. A mechanical ventilation supply system that is integral with the heating and cooling system is to be listed as part of the heating and cooling system or listed as suitable for use with that system.

(c) \* \* \*

(2) Kitchens must be provided with a local exhaust system that is capable of exhausting 100 cfm to the outside of the home. The local exhaust system must be located as close as possible to the range or cook top, but in no case farther than 3 feet horizontally from the range or cooktop.

(3) Each bathroom and separate toilet compartment must be provided with a local exhaust system capable of exhausting 50 cfm to the outside of the home. A separate toilet compartment may be provided with 1.5 square feet of openable glazed area in place of mechanical ventilation, except in Uo value Zone 3.

(e) *Airflow rating.* During the design stage, the airflow rating at a pressure of 0.25 inch water column may be used, provided the duct sizing meets the

prescriptive requirements of Table 5.3 in ANSI/ASHRAE 62.2 (incorporated by reference, see § 3280.4) or ventilation system manufacturer’s design criteria.

■ 7. Amend § 3280.105 as follows:

■ a. Revise the introductory text of paragraph (a); and

■ b. Revise paragraphs (a)(2)(i) and (b)(2).

The revisions read as follows:

**§ 3280.105 Exit facilities; exterior doors.**

(a) *Number and location of exterior doors.* Each dwelling unit of a manufactured home must have a minimum of two exterior doors located remotely from each other.

(2) \* \* \*

(i) Both of the required doors must not be in the same room.

(b) \* \* \*

(2) All exterior swinging doors must provide a minimum 28 inch wide by 74 inch high clear opening. All exterior sliding glass doors must provide a minimum 28 inch wide by 72 inch high clear opening. One exterior door must provide a minimum of 32 inch wide by 74 inch high clear opening.

■ 8. Amend § 3280.109 by revising paragraph (a) to read as follows:

**§ 3280.109 Room requirements.**

(a) Each dwelling unit of a manufactured home must have a minimum of 150 square feet of gross floor area.

■ 9. Revise § 3280.112 to read as follows:

**§ 3280.112 Hallways.**

Hallways must have a minimum horizontal dimension of 28 inches measured from the interior finished surface to the interior finished surface of the opposite wall. For manufactured homes with 14 feet of inside width or more, hallways must have a minimum horizontal dimension of 30 inches measured from the interior finished surface to the interior finished surface of the opposite wall. When appliances are installed in a laundry area, the measurement must be from the front of the appliance to the opposite finished exterior surface. When appliances are not installed and a laundry area is provided, the area must have a minimum clear depth of 27 inches in addition to the 28 inches or 30 inches (for manufactured homes with 14 feet of inside width or greater) required for passage. In addition, a notice of the available clearance for washer/dryer

units must be posted in the laundry area. Minor protrusions into the minimum hallway width by doorknobs, trim, smoke alarms or light fixtures are permitted.

■ 10. Amend § 3280.113 by revising paragraph (d) to read as follows:

§ 3280.113 Glass and glazed openings.

\* \* \* \* \*

(d) Safety glazing is any glazing material capable of meeting the requirements of Consumer Product Safety Commission 16 CFR part 1201, or Standard for Safety Glazing Materials used in Buildings—Safety Performance Specifications and Methods of Test for Safety Glazing Materials Used in Buildings, ANSI Z97.1 (incorporated by reference, see § 3280.4).

\* \* \* \* \*

■ 11. Add § 3280.115 to subpart B to read as follows:

§ 3280.115 Sound transmission between multi-dwelling unit manufactured homes.

(a) Scope. This section applies to common interior walls, partitions, and floor/ceiling assemblies between adjacent dwelling units.

(b) Air-borne sound. Walls, partitions, and floor/ceiling assemblies between stories separating dwelling units from each other must have a sound transmission class (STC) of not less than 34 for air-borne noise when tested in accordance with ASTM E90 (incorporated by reference, see § 3280.4) or calculated. Penetrations or openings in construction assemblies for piping; electrical devices; recessed cabinets; bathtubs; soffits; or heating, ventilating, or exhaust ducts must be sealed, lined, insulated or otherwise treated to maintain the required ratings. This requirement does not apply to dwelling unit entrance doors; however, such doors must be tight fitting to the frame and sill.

(c) Structure-borne sound. Floor/ceiling assemblies between stories separating dwelling units must have an impact insulation class (IIC) rating of not less than 34 when tested in accordance with ASTM E492 (incorporated by reference, see § 3280.4).

■ 12. Amend § 3280.203 by revising (c)(1)(ii) to read as follows:

§ 3280.203 Flame spread limitations and fire protective requirements.

\* \* \* \* \*

- (c) \* \* \*
(1) \* \* \*

(ii) Exposed bottoms and sides of kitchen cabinets as required by § 3280.204 except that non-horizontal surfaces above the horizontal plane

formed by the bottom of the range hood are not considered exposed;

\* \* \* \* \*

■ 13. Amend § 3280.204 by revising the first sentence of paragraph (a) and adding paragraph (f) to read as follows:

§ 3280.204 Kitchen cabinet protection.

(a) The exposed bottom and sides of combustible kitchen cabinets over cooking ranges to a horizontal distance of 6 inches from the outside edge of the cooking range must be protected with at least 5/16 inch thick gypsum board or equivalent limited combustible material.

\* \* \* \* \*

(f) Range hood finish materials must be installed with at least 5/16 inch thick gypsum board or equivalent limited combustible material between the metal range hood and finish materials. Except for sealants and other trim materials 2 inches or less in width, finish materials shall have a flame spread rating not exceeding the Flame Spread Index of 200.

■ 14. Amend § 3280.209 by revising paragraph (a) to read as follows:

§ 3280.209 Smoke alarm requirements.

(a) Labeling. Each smoke alarm required under paragraph (b) of this section must conform with the requirements of UL 217 (incorporated by reference, see § 3280.4), or ANSI/UL 268 (incorporated by reference, see § 3280.4), and must bear a label to evidence conformance. Combination smoke and carbon monoxide alarms shall be listed and must bear a label to evidence conformance with UL 217 (incorporated by reference, see § 3280.4) and ANSI/UL 2034 (incorporated by reference, see § 3280.4).

\* \* \* \* \*

■ 15. Add §§ 3280.214 through 3280.216 to subpart C to read as follows:

§ 3280.214 Fire sprinkler system requirements.

(a) General. (1) Fire Sprinkler systems are not required by this subpart; however, when a manufacturer installs a fire sprinkler system, this section establishes the requirements for the installation of a fire sprinkler system in a manufactured home.

(2) This section applies to both stand-alone and multipurpose fire sprinkler systems that do not include the use of antifreeze.

(3) A back-flow preventer is not required to separate a stand-alone sprinkler system from the water distribution system.

(b) Design. The design of the fire sprinkler system itself shall be in accordance with NFPA 13D

(incorporated by reference, see § 3280.4) or a section which is deemed to be equivalent to the design method used in NFPA 13D.

(c) Sprinkler Location. Sprinklers must be installed to protect all areas inside the manufactured home except:

(1) Attics and normally unoccupied concealed spaces;

(2) Closets not exceeding 24 square feet in area, with the smallest dimension not greater than three feet and having at least one base layer of minimum 5/16 inch thick gypsum board on wall and ceiling surfaces;

(3) Bathrooms not more than 55 square feet in area; and,

(4) Garages, carports, open attached porches and similar structures; and

(5) Closets or alcoves containing heat-producing appliance, regardless of size if the closet or alcove complies with § 3280.203(b)(3).

(d) Sprinklers. Sprinklers shall be new listed residential sprinklers and shall be installed in accordance with the sprinkler manufacturer's installation instructions.

(e) Temperature rating and separation from heat sources. Sprinklers are to have a temperature rating and be separated from heat sources as follows:

(1) Sprinklers are to have a temperature rating of no less than 135 °F (57°C) and not more than 170 °F (77°C) and be separated from heat sources as required by the sprinkler manufacturer's installation instructions.

(2) Sprinklers are to have an intermediate temperature rating not less than 175 °F (79°C) and not more than 225 °F (107°C) and be located within the distance to a heat source as specified in Table 7.5.5.3 of NFPA 13D (incorporated by reference, see § 3280.4) when installed in:

- (i) attics;
(ii) concealed spaces located directly beneath a roof; and
(iii) directly under skylights where the sprinkler is exposed to direct sunlight.

(f) Freezing areas. Piping must be protected from freezing as required by § 3280.603(b)(4). Where sprinklers are required in areas subject to freezing, dry-sidewall or dry-pendent sprinklers extending from nonfreezing area into a freezing area, must be installed.

(g) Sprinkler area of coverage. The area of coverage of a single sprinkler shall not exceed 400 square feet and shall be based on the sprinkler listing and the sprinkler manufacturer's installation instructions. Sprinkler discharge shall not be blocked by obstructions unless additional sprinklers are installed to protect the obstructed area. Sprinkler separation

from obstructions shall comply with the minimum distances specified in the sprinkler manufacturer's instructions. Pendent sprinklers within 3 feet of the center of a ceiling fan, surface-mounted ceiling light or other similar object shall be considered to be obstructed and additional sprinklers shall be installed, except that in all closets 50 square feet or less in size, one sprinkler shall be sufficient. Sidewall sprinklers within 5 feet of the center of a ceiling fan, surface-mounted ceiling light or other similar object shall be considered to be obstructed and additional sprinklers shall be installed.

(h) *Sprinkler installation on systems assembled with solvent cement.* The solvent cementing of threaded adapter fittings shall be completed and threaded adapters for sprinklers shall be verified as being clear of excess cement prior to the installation of sprinklers on systems assembled with solvent cement.

(i) *Painting, caulking or modifying sprinklers is prohibited.* Painted, caulked, modified, or damaged sprinklers shall be replaced.

(j) *Sprinkler piping support.* Sprinkler piping shall be supported in accordance with § 3280.608. Sprinkler piping must comply with all requirements for cold-water distribution piping. For multipurpose piping systems, the sprinkler piping shall connect to and be part of the cold-water distribution piping system. Nonmetallic pipe and tubing, such as CPVC and PEX, shall be listed for use in residential fire sprinkler systems. Nonmetallic pipe and tubing systems shall be protected from exposure to the living space by a layer of not less than 5/16 inch thick gypsum wallboard, 1/2 inch thick plywood, or other material having a 15 minute fire rating. Pipe protection shall not be required where exposed piping is permitted by the pipe listing and in areas that do not require protection with sprinklers as specified in paragraph (c) of this section.

(k) *Shutoff valves.* Shutoff valves shall not be installed in any location where the valve would isolate piping serving one or more sprinklers, except for shutoff valves installed for the entire water distribution system.

(l) *Means of drainage.* A means to drain the sprinkler system shall be provided on the system side of the water supply inlet.

(m) *Minimum flow rate.* The sprinkler system must provide at least the flow rate required to produce a minimum discharge density of 0.05 gpm/ft<sup>2</sup> from each sprinkler and be determined by using the sprinkler manufacturer's published data for the specific sprinkler model based on the area of coverage,

ceiling configuration, temperature rating and any other conditions specified by the sprinkler manufacturer.

(n) *Design flow rate.* The design flow rate for the sprinkler system shall be based on the following:

(1) The design flow rate for a room having only one sprinkler shall be the flow rate required for that sprinkler, as determined by paragraph (m) of this section.

(2) The design flow rate for a room having two or more sprinklers shall be determined by identifying the sprinkler in that room with the highest required flow rate, based on paragraph (m) of this section, and multiplying that flow rate by two.

(3) Where the sprinkler manufacturer's instructions specify different criteria for ceiling configurations that are not smooth, flat and horizontal, the required design flow rate for the room shall comply with the sprinkler manufacturer's instructions.

(4) The design flow rate for the sprinkler system shall be the flow rate required by the room with the largest flow rate, based on paragraph (n)(1), (2), or (3) of this section.

(5) For the purposes of this section, it shall be permissible to reduce the design flow rate for a room by subdividing the space into two or more rooms, where each room is evaluated separately with respect to the required design flow rate. Walls and a ceiling shall bound each room. Openings in walls shall have a lintel (header) not less than 8 inches in depth and each lintel shall form a solid barrier between the ceiling and the top of the opening.

(o) *Pipe sizing and minimum required supply pressure.* (1) The piping to sprinklers shall be sized for the flow required by paragraph (n) of this section. The flow rate required to supply the plumbing fixtures shall not be required to be added to the sprinkler design flow rate. The minimum pipe size from the water supply inlet to any sprinkler shall be 3/4 inch diameter. Threaded adapter fittings at the point where sprinklers are attached to the piping shall be a minimum of 1/2 inch diameter.

(2) Piping shall be sized by determining the available pressure to offset friction loss in piping and identifying a piping material, diameter and length in accordance with the following:

(i) *Minimum Supply Pressure Required.* The following equation shall be used to determine the required supply pressure at the fire sprinkler system supply inlet.

Equation 1 to paragraph (o)(2)  
PSUP = PT+PLE+PSP

Where:

PSUP = Pressure required at the fire sprinkler system supply inlet. (Note: This is the pressure which is entered on the Fire Sprinkler System Certificate under "Minimum Water Supply Required.")

PT = Pressure loss in the fire sprinkler system piping.

PLE = Pressure loss from elevation change. (Note: Normally 4.4 psi for single story houses and 8.7 psi for two story houses).

PSP = Maximum pressure required by a sprinkler.

(ii) [Reserved]

(3) Determination of PSUP shall be in accordance with the following procedure:

(i) *Step 1.* Determine PT. For the specific design in question determine the distance (developed length) from the fire sprinkler system supply inlet to the most remote sprinkler. Refer to Tables 8.4.10.2(a) through (i) of NFPA 13D (incorporated by reference, see § 3280.4) and select the correct table for the fire sprinkler system pipe material and pipe size used. Using the system design flow rate from paragraph (m) of this section find the "Allowable length of pipe" column which is closest to, but not less than, the developed length for the design in question. The "Allowable Pressure" in the column heading is PT. (Note: Interpolation between "Allowable length of pipe" (developed length) and "Available Pressure" (PT) is permitted. Example: Using Table 8.4.10.2(d) of NFPA 13D, Sprinkler Flow Rate = 16 gpm, developed length = 70 feet, Available Pressure (PT) = 17.5 psi)

(ii) *Step 2.* Determine PLE. Refer to Table 8.4.10.2.(c) of the NFPA 13D. The elevation used in applying the table shall be the difference between the highest sprinkler and the fire sprinkler system supply inlet. Interpolation is permitted. (Note: If the highest sprinkler is lower than the fire sprinkler system supply inlet then subtract this value in equation 1 to paragraph (o)(2) of this section, instead of adding it.)

(iii) *Step 3.* Determine PSP. Determine the maximum pressure required by any individual sprinkler based on the flow rate for each sprinkler as set forth in paragraph (m) of this section. The required pressure is provided in the data provided by the sprinkler manufacturer for the specific model based on the selected flow rate.

(p) *Testing.* The fire sprinkler system piping shall be subject to the same test as the water distribution system in § 3280.612(a). For multipurpose fire sprinkler systems, it shall be permitted to test the fire sprinkler system piping simultaneously with the domestic water distribution system.

(q) *Fire Sprinkler System Certificate.* The manufacturer must permanently affix a Fire Sprinkler System Certificate adjacent to the data plate. The manufacturer must specify on the Fire Sprinkler System Certificate the

minimum required pressure in pounds per square inch (psi) and flow rate in gallons per minute (gpm) for the water supply system. The Fire Sprinkler System Certificate is to include all the statements and required information

arranged in substantially the same layout as shown in the following example.

**BILLING CODE 4210-67-P**

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(Example Certificate)

## Fire Sprinkler System Certificate

Note: This label contains important information about the fire sprinkler system installed in this home. Please do not remove, alter, or cover this label.

### General Information

Name of Manufacturer:

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Manufactured Home Serial Number:

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The residential fire sprinkler system installed in this dwelling unit is in compliance with 24 CFR Part 3280.214 Fire Sprinkler System Requirements. The manufactured home installer must complete testing required below at the home site.

**Warning:** When necessary, replace components only with identical components or those determined to have equivalent performance characteristics with respect to flows and pressures.

### Minimum Water Supply Required

**Warning:** For this system to operate properly, the following minimum supply of water must be available at the point of connection to the residential fire sprinkler system:

\_\_\_\_\_ gpm (gallons per minute) at not less than \_\_\_\_\_ psi (pounds per square inch)

The water supply shall have the capacity to provide the above required design flow rate for the sprinklers for a period of time as follows:

1. Seven minutes for manufactured homes one story in height and less than 2,000 square feet in area.
2. Ten minutes for manufactured home two or more stories in height or equal to or greater than 2,000 square feet in area.

Where a water supply tank, a well system or a combination thereof is used, any combination of tank storage or well system shall be permitted to meet the capacity requirement.

The home installer certifies that the fire sprinkler piping system has been tested on site in accordance with the home manufacturer's instructions and that the above listed required minimum water supply is available.

Company and/or Individual Name of Installer:

---

License/Certification Number of Installer

---

Address of Installer:

---

Date Home Installed:

---

**Warning:** This structure contains a residential fire sprinkler system. Do not alter or make additions to the water supply without first contacting the home manufacturer or a fire protection specialist. Any control valve(s) on the water supply to the residential fire sprinkler system must be in the full open position for the system to operate properly. If the valves must be closed temporarily to service the sprinkler, verify that they are left fully open and secured when service is complete.

**BILLING CODE 4210-67-C**

(r) *Sign or valve tag.* A sign or valve tag shall be installed at the fire sprinkler system supply inlet stating the following:

Warning, the water supply system supplies fire sprinklers that require specific flows and pressures to fight a fire. Devices that restrict the flow or decrease the pressure or automatically shut off the water to the fire sprinkler system, such as water filtration systems, water softeners and automatic shutoff valves, shall not be added to this system without first contacting the home manufacturer or a fire protection specialist. Please do not remove this sign.

(s) *Component instructions.* If the manufacturer of a fire sprinkler system component used in a system provides written instructions and procedures for the operation, maintenance, periodic testing, and/or repair of the component, a copy of the instructions and procedures shall be left in each home for the consumer.

(t) *Manufacturer's installation instructions for fire sprinkler systems.* Manufacturer's installation instructions must provide the following:

(1) *Specific instructions for the inspection and testing of the fire*

*sprinkler system during the installation of the home.* Testing requirements are to be consistent with § 3280.612(a).

(2) *Required statement.* If this manufactured home contains a fire sprinkler system, the installer of the home shall verify that the water supply at the site meets the minimum conditions described on the Fire Sprinkler System Certificate in the home (located next to the data plate). The installer shall also complete the name, address and date on the Certificate.

**§ 3280.215 Multi-dwelling unit manufactured homes.**

(a) *General.* In manufactured homes with more than one dwelling unit, each dwelling unit must be separated from each other by wall and floor assemblies having not less than a 1 hour fire resistance rating when tested in accordance with ASTM E119 or UL 263 (both incorporated by reference, see § 3280.4) or having a fire resistance rating of not less than a 1 hour when calculated in accordance with Chapter 16 of the National Design Specification for Wood Construction, (AWS NDS) (incorporated by reference, see § 3280.4).

(b) *Fire resistance walls.* Fire-resistance-rated floor/ceiling and wall assemblies must extend to and be tight against the exterior wall, and wall assemblies must extend from the foundation to the underside of the roof sheathing except as follows:

(1) Wall assemblies need not extend through attic spaces where the ceiling is protected by not less than 5/8 inch Type X gypsum board and attic draftstop is constructed as specified in § 3280.216 is provided above and along the wall assembly separating the dwelling units; and

(2) The structural framing supporting the ceiling the ceiling is protected by not less than 1/2 inch gypsum board or equivalent.

(c) *Supporting construction.* Where floor assemblies are required to be fire resistant rated by this section, the supporting construction of such assemblies must have an equal or greater fire resistance rating.

(d) *Dwelling unit rated penetrations.* Penetrations of wall or floor-ceiling assemblies in multi-dwelling unit manufactured homes are required to be fire-resistance rated in accordance with this section.

(1) *Through penetrations.* (i) Through penetrations must be installed as tested in the approved fire-resistance rated assembly; or

(ii) Through penetrations must be protected by an approved penetration fire stop system installed as tested in accordance with ASTM E814 or UL 1479 (incorporated by reference, see § 3280.4), with a positive pressure differential of not less than 0.01 inch of water and must have an *F* rating of not less than the required fire resistance rating of the wall or floor-ceiling assembly penetrated; or

(iii) Where the penetrating items are steel, ferrous or copper pipes, tubes, or conduits, the material used to fill the annular space must prevent the passage of flame and hot gasses sufficient to ignite cotton waste where subjected to ASTM E119 or UL 263 (incorporated by reference, see § 3280.4) time temperature fire conditions under a positive pressure differential of not less than 0.01 inch of water at the location of the through penetration for the time period equivalent to the fire resistance rating of the construction penetrated.

(2) *Membrane penetrations.* Membrane penetrations must comply with paragraph (d)(1) of this section. Where walls are required to have a fire resistance rating, recessed fixtures must be installed so that the required fire resistance rating will not be reduced except as follows:

(i) By membrane penetrations of fire-resistant-rated walls, ceiling/floors and partitions by steel electrical boxes provided they do not exceed 16 square inches in area and the aggregate area of the openings through the membrane does not exceed 100 square inches in any 100 square feet of wall area. The annular space between the wall membrane and the box must not exceed  $\frac{1}{8}$  inch. Such boxes on opposite sides of the wall must be separated by one of the following:

(A) A horizontal distance of not less than 24 inches where the wall or partition is constructed with individual non-communicating stud cavities; or

(B) A horizontal distance of not less than the depth of the wall cavity, where the wall cavity is filled with cellulose loose-fill or other loose-fill insulation; or

(C) Solid fire blocking in accordance with § 3280.206; or

(D) Protecting both boxes with listed putty pads; or

(E) Other listed materials and methods.

(ii) By membrane penetrations of listed electrical boxes of any materials provided that the boxes have been tested for use in fire resistance rated

assemblies and are installed in accordance with the instructions included with the listing. The annular space between the wall membrane and the box must not exceed  $\frac{1}{8}$  inch unless otherwise noted. Such boxes on opposite sides of the wall must be separated by one of the following:

(A) The horizontal distance specified in the listing of the electrical boxes; or

(B) Solid fire blocking in accordance with § 3280.206; or

(C) Protecting boxes with listed putty pads; or

(D) Other listed materials and methods.

(iii) By the annular space created by the penetration of a fire sprinkler provided that it is covered by a metal escutcheon plate.

**§ 3280.216 Draftstopping requirements for multi-dwelling unit manufactured homes.**

(a) When there is usable space both above and below the concealed space of a floor/ceiling assembly in a multi-dwelling unit manufactured home, draftstops must be installed so that the area of the concealed space does not exceed 1000 square feet.

(b) Draftstopping must divide the concealed space into approximately equal areas.

(c) Where the assembly is enclosed by a floor membrane above and a ceiling membrane below, draftstopping must be provided in the floor/ceiling assemblies:

(1) When the ceiling is suspended under the floor framing; or

(2) When the floor framing is constructed of truss type open-web or perforated members.

(d) Draftstopping materials must not be less than  $\frac{1}{2}$  inch gypsum board,  $\frac{3}{8}$  inch wood structural panels, or other approved materials adequately supported.

(e) Draftstopping must be installed parallel to the floor framing members.

(f) The integrity of all draftstops must be maintained.

■ 16. Amend § 3280.303 by revising paragraph (b) to read as follows:

**§ 3280.303 General requirements.**

\* \* \* \* \*

(b) *Construction.* All Construction methods must be in conformance with an approved quality assurance manual as provided by §§ 3282.203 and 3282.361(c) and accepted engineering practices to ensure durable, livable, and safe housing.

\* \* \* \* \*

■ 17. Revise and republish § 3280.304 to read as follows:

**§ 3280.304 Materials.**

(a) Dimension and board lumber must not exceed 19 percent moisture content

at the time of installation, except that treated lumber used for exterior purposes may have a moisture content exceeding 19 percent.

(b) The standards for some of the generally used materials and methods of construction that are listed in this paragraph are incorporated by reference (see § 3280.4).

(1) *Aluminum.*

(i) Aluminum Design Manual, Specifications and Guidelines for Aluminum Structures, Part 1—A (Aluminum Association).

(ii) Aluminum Design Manual, Specifications and Guidelines for Aluminum Structures, Part 1—B (Aluminum Association).

(2) *Steel.*

(i) Specification for Structural Steel Buildings—AISC 360.

(ii) North American Specification for the Design of Cold-Formed Steel Structural Members—AISI S100.

(iii) Specification for the Design of Cold-Formed Stainless Steel Structural Members—SEI/ASCE 8.

(iv) Standard Specifications Load Tables and Weight Tables for Steel Joists and Joist Girders, SJI.

(v) Structural Applications of Steel Cables for Buildings—ASCE 19.

(vi) Standard Specification for Strapping, Flat Steel and Seals—ASTM D3953.

(3) *Wood and Wood Products.*

(i) Basic Hardboard—ANSI/AHA A135.4.

(ii) Prefinished Hardboard Paneling—ANSI/AHA A135.5.

(iii) Hardboard Siding—ANSI/AHA A135.6.

(iv) American National Standard for Hardwood and Decorative Plywood—ANSI/HPVA HP-1.

(v) Structural Design Guide for Hardwood Plywood Wall Panels—HPVA Design Guide HP-SG.

(vi) Standard for Wood Products—Structural Glued Laminated Timber—ANSI/AITC A190.1.

(vii) Construction and Industrial Plywood (With Typical APA Trademarks)—PS 1.

(viii) APA Design/Construction Guide, Residential and Commercial—APA E30-P.

(ix) National Design Standard for Metal Plate Connected Wood Truss Construction, TPI-1.

(x) APA Design & Fabrication of All-Plywood Beams—H815G.

(xi) Panel Design Specification—APA D510C.

(xii) Design & Fabrication of Glued Plywood-Lumber Beams—APA S812S.

(xiii) Design & Fabrication of Plywood Curved Panels—APA-S811P.

(xiv) Design & Fabrication of Plywood Sandwich Panels, APA U814J.



- (xv) Performance Standard for Wood-Based Structural Use Panels—NIST PS 2.
- (xvi) Design & Fabrication of Plywood Stressed-Skin Panels,—APA-U813M.
- (xvii) National Design Specifications for Wood Construction, with Supplement, Design Values for Wood Construction, AWC NDS.
- (xviii) Wood Structural Design Data, 1986 Edition with 1992 Revisions, AFPA.
- (xix) Span Tables for Joists & Rafters—AWC PS-20-70.
- (xx) Design Values for Joists & Rafters, AWC.
- (xxi) Particleboard—ANSI A208.1.
- (xxii) North American Fenestration Standard/Specification for Windows, Doors and Skylights—AAMA/WDMA/CSA 101/I.S.2/A440.
- (xxiii) Standard Test Methods for Puncture and Stiffness of Paperboard, and Corrugated and Solid Fiberboard—ASTM D781.
- (xxiv) Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials—ASTM D4442.
- (xxv) Standard Test Methods for Use and Calibration of Hand-Held Moisture Meters—ASTM D4444.
- (xxvi) Medium Density Fiberboard (MDF) For Interior Applications—ANSI A208.2.
- (xxvii) Standard Test Methods for Fire Tests of Building Construction and Materials—ASTM E119.
- (xxviii) Engineered Wood Construction Guide—APA E30V.
- (xxix) Structural Plywood (with Typical APA Trademarks), APA PS 1.

- (xxx) Plywood Design Specification, APA Y510.
- (4) *Other*.
- (i) Standard Specification for Gypsum Board—ASTM C1396/C1396M.
- (ii) [Reserved].
- (5) *Fasteners*.
- (i) ICC-ES Evaluation Report, Power Driven Staples and Nails—ESR 1539.
- (ii) [Reserved]
- (6) *Unclassified*.
- (i) Minimum Design Loads for Buildings and Other Structures, ASCE/SEI 7.
- (ii) Standard for Safety Glazing Materials Used in Buildings—Safety Performance Specifications and Methods of Test, ANSI Z97.1.
- (iii) Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Siding, ASTM D3679.
- (iv) Standard Practice for Installation of Rigid Poly (Vinyl Chloride) (PVC) Siding and Soffit, ASTM D4756.
- (v) Standard Specification for Polypropylene (PP) Siding, ASTM D7254.
- (c) Materials and methods of construction utilized in the design and construction of manufactured homes which are covered by the standards listed in this section, or any applicable portion thereof shall comply with these requirements.
- (d) Engineering analysis and testing methods contained in these references shall be utilized to judge conformance with accepted engineering practices required in § 3280.303(c).
- (e) Materials and methods of installation conforming to these

standards shall be considered acceptable when installed in conformance with the requirements of this part.

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

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

- 18. Amend § 3280.305 as follows:
- a. Revise paragraph (c)(1)(ii)(A);
- b. Designate the table immediately following paragraph (c)(1)(ii)(B) as table 1 to paragraph (c)(1)(ii)(B) and revise its column headings; and
- c. Revise paragraphs (c)(2)(ii) and (iii); (j)(i) and (k)(2)

The revisions read as follows:

**§ 3280.305 Structural design requirements.**

\* \* \* \* \*

- (c) \* \* \*
- (1) \* \* \*
- (ii) \* \* \*

(A) The design wind pressures for Exposure C as specified in Minimum Design Loads for Buildings and Other Structures, ASCE/SEI 7 (incorporated by reference, see § 3280.4), for a fifty-year recurrence interval, and for an equivalent three-second gust wind speed of 140 mph, as specified for Wind Zone II, or 150 mph, as specified for Wind Zone III on the Basic Wind Zone Map for Manufactured Housing; or

(B) \* \* \*

**Table 1 to paragraph (c)(1)(ii)(B) -TABLE OF DESIGN WIND PRESSURES**

Element	Wind Zone II design wind speed 140 mph	Wind Zone III design wind speed 150 mph
* * * * *	* * *	* * *

\* \* \* \* \*

(2) \* \* \*

(ii) *Wind Zone II*. . . .140 mph. The following areas are considered to be within Wind Zone II of the Basic Wind Zone Map:

**Table 2 to paragraph (c)(ii)**

Local governments: The following local governments listed by State (counties, unless specified otherwise):	
Alabama:	Baldwin and Mobile.
Florida:	All counties except those identified in paragraph (c)(1)(i)(C) of this section as within Wind Zone III.
Georgia:	Bryan, Camden, Chatham, Glynn, Liberty, McIntosh.
Louisiana:	Parishes of Acadia, Allen, Ascension, Assumption, Calcasieu, Cameron, East Baton Rouge, East Feliciana, Evangeline, Iberia, Iberville, Jefferson Davis, LaFayette, Livingston, Pointe Coupee, St. Helena, St. James, St. John the Baptist, St. Landry, St. Martin, St. Tammany, Tangipahoa, Vermillion, Washington, West Baton Rouge, and West Feliciana.
Maine:	Hancock and Washington.
Massachusetts:	Barnstable, Bristol, Dukes, Nantucket, and Plymouth.
Mississippi:	George, Hancock, Harrison, Jackson, Pearl River, and Stone.

North Carolina:	Beaufort, Brunswick, Camden, Chowan, Columbus, Craven, Currituck, Jones, New Hanover, Onslow, Pamlico, Pasquotank, Pender, Perquimans, Tyrrell, and Washington.
South Carolina:	Beaufort, Berkeley, Charleston, Colleton, Dorchester, Georgetown, Horry, Jasper, and Williamsburg.
Texas:	Aransas, Brazoria, Calhoun, Cameron, Chambers, Galveston, Jefferson, Kenedy, Kleberg, Matagorda, Nueces, Orange, Refugio, San Patricio, and Willacy.
Virginia:	Cities of Chesapeake, Norfolk, Portsmouth, Princess Anne, and Virginia Beach.

(iii) *Wind Zone III*. . . .150 mph. The following areas are considered to be within Wind Zone III of the Basic Wind Zone Map:

(A) *States and Territories*: The entire State of Hawaii, the coastal regions of

Alaska (as determined by the 110 mph isotach on the ASCE/SEI 7 map), and all of the U.S. Territories of American Samoa, Guam, Northern Mariana Islands, Puerto Rico, and the United States Virgin Islands.

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

**Table 3 to paragraph (c)(2)(iii)(B)**

Florida:	Broward, Charlotte, Collier, Dade, Franklin, Gulf, Hendry, Lee, Martin, Manatee, Monroe, Palm Beach, Pinellas, and Sarasota.
Louisiana:	Parishes of Jefferson, La Fourche, Orleans, Plaquemines, St. Bernard, St. Charles, St. Mary, and Terrabonne.
North Carolina:	Carteret, Dare, and Hyde.

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\* \* \* \* \*

(j) \* \* \*

(1) All welds must be made in accordance with the applicable provisions of the Specification for Structural Steel Buildings, AISC 360 (incorporated by reference, see § 3280.4); the North American Specification for the Design of Cold-Formed Steel Structural Members, AISI S100 (incorporated by reference, see § 3280.4); and the Specification for the Design of Cold-Formed Stainless Steel Structural Members, SEI/ASCE 8 (incorporated by reference, see § 3280.4).

\* \* \* \* \*

(k) \* \* \*

(2) For roofs with slopes less than 7:12 that contain an attic area or for portions of roofs with slopes 7:12 or greater that do not meet the ceiling height/living space requirements of the standards, the attic floor must be designed for a storage live load of 20 pounds per square foot (psf).

(i) Attic area as used within this section are those spaces where the maximum clear height between joist and rafters is 42 inches or greater or where there are two or more adjacent trusses with web configurations capable of accommodating an assumed rectangle 42 inches high by 24 inches in width or greater, within the plane of the trusses.

(ii) The live load need only be applied to those portions of the joist or truss bottom chords where all of the following criteria are met:

(A) The attic area is accessible from an opening not less than 20 inches in width and 30 inches in length that is located where the clear height in the attic is a minimum of 30 inches; and,

(B) The slope of the joists of the truss bottom chord are no greater than 2 inches vertical to 12 inches horizontal; and,

(C) Required insulation depth is less than the joist or truss bottom chord member depth.

■ 19. Amend § 3280.307 by adding paragraph (f) to read as follows:

**§ 3280.307 Resistance to elements and use.**

\* \* \* \* \*

(f) The exterior wall envelope must be designed and constructed in a manner that prevents the accumulation of water within the wall assembly by providing a Water Resistive Barrier (WRB) behind the exterior cladding and a means of draining water that enters the assembly.

■ 20. Add § 3280.309 to subpart D to read as follows:

**§ 3280.309 Standard for vinyl siding and polypropylene siding used in manufactured homes.**

(a) *Scope.* This section establishes the requirements for vinyl siding and polypropylene siding used in manufactured homes.

(b) *Standards*—(1) *Vinyl siding.* All vinyl siding must comply with the requirements of ASTM D3679 (incorporated by reference, see § 3280.4) and must be certified or listed and labeled as conforming to those requirements.

(2) *Polypropylene siding.* All polypropylene siding must comply with the requirements of ASTM D7254 (incorporated by reference, see § 3280.4) and must be certified or listed and labeled as conforming to those requirements.

(c) *Installation.* Vinyl siding and soffit installation must be installed in accordance with the manufacturer's installation instructions. Vinyl siding and soffit installation must be based on ASTM D4756 (incorporated by reference, see § 3280.4).

■ 21. Amend § 3280.403 as follows:

■ a. Revise paragraph (b)(1) and the first sentence of the introductory text of paragraph (b)(2);

■ b. Revise the introductory text of paragraph (d)(1); and

■ c. Revise paragraph (e).

The revisions read as follows:

**§ 3280.403 Requirements for windows, sliding glass doors, and skylights.**

\* \* \* \* \*

(b)(1) *Standard.* All primary windows and sliding glass doors must comply with AAMA 1701.2 (incorporated by reference, see § 3280.4), or AAMA/WDMA/CSA 101/I.S.2/A440 (incorporated by reference, see § 3280.4), except the exterior and interior pressure tests must be conducted at the minimum design wind loads required for components in § 3280.305(c)(1).

(2) All skylights must comply with AAMA/WDMA/CSA 101/I.S.2/A440 (incorporated by reference, see § 3280.4). \* \* \*

\* \* \* \* \*

(d) \* \* \* (1) Safety glazing materials, where used shall meet ANSI Z97.1 (incorporated by reference, see § 3280.4).

\* \* \* \* \*

(e) *Certification.* All primary windows and sliding glass doors to be installed in manufactured homes must be certified as complying with AAMA 1701.2 (incorporated by reference, see § 3280.4) or AAMA/WDMA/CSA 101/I.S.2/A440 (incorporated by reference, see § 3280.4). 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 must show evidence of certification by affixing a quality certification label to the product from an independent product certification body accredited to ISO/IEC 17065 (incorporated by reference, see § 3280.4).

(2) In determining certifiability of the products, an independent quality assurance agency must conduct pre-production specimen tests in accordance with AAMA 1702.2 (incorporated by reference see § 3280.4) or AAMA/WDMA/CSA 101/I.S.2/A440 (incorporated by reference, see § 3280.4). Further, such agency must inspect the product manufacturer's facility at least twice per year.

(3) All skylights installed in manufactured homes must be certified as complying with AAMA 1701.2 (incorporated by reference see § 3280.4) or AAMA/WDMA/CSA 101/I.S.2/A440 (incorporated by reference, see § 3280.4).

\* \* \* \* \*

■ 22. Amend § 3280.404 by revising paragraphs (b) and (e) 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, must meet all requirements of AAMA 1701.2 (incorporated by reference, see § 3280.4) and AAMA 1704 (incorporated by reference, see § 3280.4) or AAMA/WDMA/CSA 101/I.S.2/A440 (incorporated by reference, see § 3280.4).

(1) *Loading.* Exterior and interior pressure tests for components and cladding must be conducted meeting or exceeding the minimum design wind loads required by § 3280.305(c)(1).

(2) *Dimensions.* All egress systems must have a minimum clear horizontal dimension of 20 inches and a minimum clear vertical dimension of 24 inches and have a clear opening of at least 5 ft<sup>2</sup>.

\* \* \* \* \*

(e) *Certification of Egress Windows and devices.* (1) Egress windows and devices must be listed in accordance with the procedures and requirements of AAMA 1701.2 (incorporated by reference, see § 3280.4) and AAMA 1704 (incorporated by reference, see § 3280.4) or AAMA/WDMA/CSA 101/I.S.2/A440 (incorporated by reference, see § 3280.4). This certification must be based on tests conducted meeting or exceeding the minimum design wind loads specified in § 3280.305(c)(1).

(2) All such windows and devices must show evidence of certification by

affixing a quality certification label to the product from an independent product certification body accredited to ISO/IEC 17065 (incorporated by reference, see § 3280.4).

■ 23. Amend § 3280.405 by revising paragraphs (b), (c), 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 must meet all requirements of AAMA 1702.2 (incorporated by reference, see § 3280.4) or AAMA/WDMA/CSA 101/I.S.2/A440 (incorporated by reference, see § 3280.4).

(c) Materials and methods. Any material or method of construction must conform to the performance requirements as outlined in paragraph (b) of this section. Plywood must be exterior type and preservative treated in accordance with WDMA I.S. 4 (incorporated by reference, see § 3280.4).

(e) Certification. All swinging exterior doors to be installed in manufactured homes must be certified as complying with AAMA 1702 (incorporated by reference, see § 3280.4) or AAMA/WDMA/CSA 101/I.S.2/A440 (incorporated by reference, see § 3280.4).

(1) All such doors must show evidence of certification by affixing a quality certification label to the product from an independent product certification body accredited to ISO/IEC 17065 (incorporated by reference, see § 3280.4).

(2) In determining certifiability of the products, an independent quality assurance agency must conduct a pre-production specimen test in accordance with AAMA 1702.2 (incorporated by reference, see § 3280.4) or AAMA/WDMA/CSA 101/I.S.2/A440 (incorporated by reference, see § 3280.4).

■ 24. Amend § 3280.504 by revising paragraphs (a)(1) and (c) to read as follows:

§ 3280.504 Condensation control and installation of vapor retarders.

(a) \* \* \* (1) In U<sub>o</sub> Value Zones 2 and 3, ceilings must have a vapor retarder with a permeance of not greater than 1 perm as measured by ASTM E96/E96M (incorporated by reference, see

§ 3280.4), installed on the living space side of the roof cavity.

(c) Liquid applied vapor retarders. Each liquid applied vapor retarder must be tested by a nationally recognized testing agency for use on the specific substrate to which it is applied. The test report must include the perm rating, as measured by ASTM E96/E96M (incorporated by reference, see § 3280.4), and associated application rate for each specific substrate.

■ 25. Amend § 3280.510 by revising the first sentence of the introductory text to read as follows:

§ 3280.510 Heat loss certificate.

The manufactured home manufacturer must permanently affix the following "Certificate" to an interior surface of each dwelling unit that is readily visible to the occupant.

■ 26. Amend § 3280.511 by revising the first sentence of the introductory text of paragraph (a) and paragraph (b) to read as follows:

§ 3280.511 Comfort cooling certificate and information.

(a) The manufactured home manufacturer must permanently affix a "Comfort Cooling Certificate" to an interior surface of each dwelling unit that is readily visible to the occupant.

(b) For each home designated as suitable for central air conditioning the manufacturer shall provide the maximum central manufactured home air conditioning capacity certified in accordance with the ANSI/AHRI Standard 210/240 with Addenda 1 and 2 (incorporated by reference, see § 3280.4) and in accordance with § 3280.715(a)(3). If the capacity information provided is based on entrances to the air supply duct at other than the furnace plenum, the manufacturer shall indicate the correct supply air entrance and return air exit locations.

■ 27. Amend § 3280.603 by revising paragraph (b)(4)(ii) to read as follows:

§ 3280.603 General requirements.

(ii) A statement in the installation instructions required by § 3280.306(b), stating that if the heat tape or pipe heating cable is used, it must be listed or certified for its intended purpose.

■ 28. Revise and republish § 3280.604 to read as follows

§ 3280.604 Materials.

(a) Minimum standards. Materials, devices, fixtures, fittings, equipment, appliances, appurtenances and accessories shall conform to one of the standards listed in this section (all incorporated by reference, see § 3280.4) and be free from defects. Where an appropriate standard is not listed in this section or a standard not listed is preferred, the item may be used if it is listed. A listing is also required when so specified in other sections of this subpart.

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

(1) When one of the reference standards requires evaluation of chemical, toxicity or odor properties which are not included in the other standard, then conformance to the applicable requirements of each standard shall be demonstrated;

(2) When a plastic material or component is not covered by the standards in this section, it must be certified as non-toxic in accordance with ANSI/NSF 61, Drinking water system components—Health effects (incorporated by reference, see § 3280.4).

(c) Standards for some of the generally used materials and methods of construction are listed as following:

- (1) Ferrous Pipe and Fittings. (i) Gray Iron Threaded Fittings—ANSI/ASME B16.4. (ii) Malleable Iron Threaded Fittings—ANSI/ASME B16.3. (iii) Material and Property Standard for Special Cast Iron Fittings—IAPMO PS 5. (iv) Welding and Seamless Wrought Steel Pipe—ANSI/ASME B36.10. (v) Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless—ASTM A53/A53M. (vi) Pipe Threads, General Purpose (Inch)—ANSI/ASME B1.20.1. (vii) Standard Specification for Cast Iron Soil Pipe and Fittings—ASTM A74. (viii) Standard Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications—CISPI-301. (2) Nonferrous Pipe and Fittings. (i) Standard Specification for Seamless Copper Pipe, Standard Sizes—ASTM B42. (ii) Standard Specification for General Requirements for Wrought Seamless

Copper and Copper-Alloy Tube—ASTM B251.

(iii) Standard Specification for Seamless Copper Water Tube—ASTM B88.

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

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

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

(vii) Cast Copper Alloy Solder-Joint Pressure Fittings—ANSI B16.18.

(viii) Cast Copper Alloy Solder-Joint Drainage Fittings-DWV—ASME B16.23.

(ix) Cast Copper Alloy Fittings for Flared Copper Tubes—ASME/ANSI B16.26.

(x) Standard Specification for Seamless Red Brass Pipe, Standard Sizes—ASTM B43.

(xi) Cast Bronze Threaded Fittings, Classes 125 and 250—ANSI/ASME B16.15.

(3) *Plastic Pipe and Fittings.* (i) Standard Specification Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe and Fittings—ASTM D2661.

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

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

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

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

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

(vii) Plastic Piping Components and Related Materials—ANSI/NSF 14.

(viii) Standard Specification for Crosslinked Polyethylene (PEX) Tubing—ASTM F876.

(ix) Standard Specification for Crosslinked Polyethylene (PEX) Plastic Hot- and Cold-Water Distribution Systems—ASTM F877.

(4) *Miscellaneous.* (i) Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings, ASTM C564.

(ii) Backflow Valves—ANSI A112.14.1.

(iii) Plumbing Fixture Setting Compound—TTP 1536A.

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

(v) Relief Valves for Hot Water Supply Systems, ANSI Z21.22.

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

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

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

(ix) Plumbing System Components for Manufactured Homes and Recreational Vehicles—ANSI/NSF 24.

(x) Material and Property Standard for Diversion Tees and Twin Waste Elbow—IAPMO PS 9.

(xi) Material and Property Standard for Flexible Metallic Water Connectors—IAPMO PS 14.

(xii) Material and Property Standard for Dishwasher Drain Airgaps—IAPMO PS 23.

(xiii) Material and Property Standards for Backflow Prevention Assemblies—IAPMO PS 31.

(xiv) Performance Requirements for Air Admittance Valves for Plumbing Drainage Systems, Fixture and Branch Devices—ASSE Standard #1051.

(xv) Drinking Water System Components-Health Effects—ANSI/NSF 61.

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

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

(iii) Enameled Cast Iron Plumbing Fixtures—ANSI/ASME A112.19.1M.

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

(v) Plastic Bathtub Units with Addenda Z124.1a and Z124.16—ANSI Z124.1.

(vi) Standard for Porcelain Enameled Formed Steel Plumbing Fixtures—IAPMO TSC 22.

(vii) Plastic Shower Receptors and Shower Stalls with Addendum Z124.2a—ANSI Z124.2.

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

(ix) Material and Property Standard for Drains for Prefabricated and Precast Showers—IAPMO PS 4.

(x) Plastic Lavatories with Addendum Z124.3a—ANSI Z124.3.

(xi) Standard for Safety Glazing Materials used in Buildings—Safety Performance Specifications and Methods of Test, ANSI Z97.1.

(xii) Water Heater Relief Valve Drain Tubes—ASME A112.4.1.

(xiii) Flexible Water Connectors—ASME A112.18.6.

(xiv) Performance Requirements for Backflow Protection Devices and Systems in Plumbing Fixture Fittings—ASME A112.18.3M.

(xv) Non-Vitreous Ceramic Plumbing Fixtures—ASME A112.19.9M.

(xvi) Dual Flush Devices for Water Closets—ASME A119.19.10.

(xvii) Deck Mounted Bath/Shower Transfer Valves with Integral Backflow Protection—ASME A112.18.7.

(xviii) Plastic Fittings for Connecting Water Closets to the Sanitary Drainage System—ASME A112.4.3.

(xix) Hydraulic Performance Requirements for Water Closets and Urinals, ASME A112.19.6.

(xx) Plumbing Fixture Fittings—ASME/ANSI A112.18.1M.

(xxi) Trim for Water Closet, Bowls, Tanks, and Urinals—ANSI A112.19.5.

(xxii) Plastic Water Closets, Bowls, and Tanks with Addenda Z124.4a—ANSI Z124.4.

(xxiii) Plastic Toilet (Water Closets) Seats—ANSI Z124.5.

(xxiv) Prefabricated Plastic Spa Shells—ANSI Z124.7.

(xxv) Whirlpool Bathtub

Appliances—ASME/ANSI A112.19.7M.

(xxvi) Plastic Urinal Fixtures—ANSI Z-124.9.

(xxvii) Performance Requirements for Individual Thermostatic Pressure Balancing and Combination Control for Bathing Facilities—ASSE 1016.

(xxviii) Performance Requirements for Pressurized Flushing Devices (Flushometers) for Plumbing Fixtures—ASSE 1037.

(xxix) Performance Requirements for Water Closet Flush Tank Fill Valves (Ballcocks)—ASSE 1002.

(xxx) Performance Requirements for Hand-held Showers—ASSE 1014.

(xxxi) Hydrants for Utility and Maintenance Use—ANSI/ASME A112.21.3M.

(xxxii) Performance Requirements for Home Laundry Equipment—ASSE 1007.

(xxxiii) Performance Requirements for Hot Water Dispensers, Household Storage Type Electrical—ASSE 1023.

(xxxiv) Plumbing Requirements for Residential Use (Household) Dishwashers—ASSE 1006.

(xxxv) Performance Requirements for Household Food Waste Disposer Units—ASSE 1008.

(xxxvi) Performance Requirements for Temperature Activated Mixing Valves for Primary Domestic Use—ASSE 1017.

(xxxv) Water Hammer Arresters—ANSI A112.26.1.

(xxxvi) Suction Fittings for Use in Swimming Pools, Wading Pools, Spas,

Hot Tubs, and Whirlpool Bathtub Appliances—ASME/ANSI A112.19.8M. (xxxvii) Air Gaps in Plumbing Systems—ASME A112.1.2.

(xxxviii) Performance Requirements for Diverters for Plumbing Faucets with Hose Spray, Anti-Siphon Type, Residential Applications—ASSE 1025.

(xxxix) Performance Requirements for Pipe Applied Atmospheric Type Vacuum Breakers—ASSE 1001.

(xl) Performance Requirements for Hose Connection Vacuum Breakers—ASSE 1011–1981.

(xli) Performance Requirements for Wall Hydrants, Frost Proof Automatic Draining, Anti-Backflow Types—ANSI/ASSE 1019.

(xlii) Performance Requirements for Automatic Compensating Valves for Individual Shower and Tub/Shower Combinations—ASSE 1016.

(xliii) Performance Requirements for Water Temperature Limiting Devices—ASSE 1070–2004.

■ 29. Amend § 3280.607 by revising paragraphs (b)(3) and (c)(6)(iv) to read as follows:

**§ 3280.607 Plumbing Fixtures.**

\* \* \* \* \*

(b) \* \* \*

(3) *Shower compartment.* (i) Each compartment stall must be provided with an approved watertight receptor with sides and back extending with sides and back extending at least 1 inch above the finished dam or threshold. Except as provided by paragraph (b)(3)(v) of this section, the depth of a shower receptor must not be less than 2 inches or more than 9 inches

measured from the top of the finished dam or threshold to the top of the drain. The wall area must be constructed of smooth, non-corrosive, and non-absorbent materials to a height not less than 6 feet above the bathroom floor level. Such walls must form a watertight joint with each other and with the bathtub, receptor or shower floor. The floor or compartment must slope uniformly to the drain not less than one-fourth nor more than 1/2 inch per foot.

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

(iii) Shower doors and tub and shower enclosures must be constructed so as to be waterproof and, if glazed, glazing must comply with ANSI Z97.1 (incorporated by reference, see § 3280.4)

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

(v) Thresholds in roll-in-type shower compartments must be 1/2 inch maximum in height in accordance with paragraph (vi) of this section. In transfer type shower compartments, thresholds 1/2 inch maximum in height must be beveled, rounded, or be vertical.

(vi) Changes in level of 1/4 inch maximum in height must be permitted to be vertical. Changes in level greater than 1/4 inch in height and not more than 1/2 inch maximum in height must be beveled with a slope not steeper than 1:2.

(vii) Shower and tub-shower combination valves must be balanced pressure, thermostatic, or combination mixing valves that conform to the requirements of ASSE 1016

(incorporated by reference, see § 3280.4). Such valves must be equipped with handle position stops that are adjustable in accordance with the valve manufacturer’s instructions and to a maximum setting of 120 °F. Hot water supplied to bathtubs and whirlpool bathtubs are to be limited to a temperature of not greater than 120 °F by a water temperature limiting device that conforms to the requirements of ASSE 1070 (incorporated by reference, see § 3280.4).

\* \* \* \* \*

(c) \* \* \*

(6) \* \* \*

(iv) *Electrical.* Wiring must comply with Articles 680.70, 680.71, and 680.72 of NFPA 70 (incorporated by reference, see § 3280.4).

■ 30. Amend § 3280.609 by revising paragraph (a)(2) to read as follows:

**§ 3280.609 Water distribution systems.**

(a) \* \* \*

(2) *Hot water supply.* Each dwelling unit equipped with a kitchen sink, and bathtub and/or shower must be provided with a hot water supply system including a listed water heater.

\* \* \* \* \*

■ 31. Amend § 3280.611 by revising paragraph (c)(5) to read as follows:

**§ 3280.611 Vents and venting.**

\* \* \* \* \*

(c) \* \* \*

(5) The distance of the fixture trap from the vent must not exceed the values given in the following table:

**Table 1 to paragraph (c)(5)) – Maximum Distance of Fixtures from Vent Trap**

Size of fixture drain (inches)	Distance trap to vent
1 1/4	5 ft.
1 1/2	6 ft.
2	8 ft.
3	12 ft.

\* \* \* \* \*

■ 32. Amend § 3280.702 by revising the definitions for “Class 0 air ducts and air connectors” and “Class 1 air ducts and air connectors,” to read as follows:

**§ 3280.702 Definitions.**

\* \* \* \* \*

*Class 0 air ducts and air connectors* means air ducts and air connectors having a fire hazard classification of zero when tested in accordance with UL

181 (incorporated by reference, see § 3280.4).

*Class 1 air ducts and air connectors* means air ducts and air connectors having a flame spread rating of not over 25 without evidence of continued

progressive combustion and a smoke developed rating of not over 50 when tested in accordance with UL 181 (incorporated by reference, see § 3280.4).

\* \* \* \* \*

■ 33. Revise § 3280.703 to read as follows:

**§ 3280.703 Minimum standards.**

Heating, cooling, and fuel burning appliances and systems in manufactured homes shall be free of defects and shall conform to applicable standards (incorporated by reference, see § 3280.4) in this section unless otherwise specified in this part. When more than one standard is referenced, compliance with any one such standard shall meet the requirements of this part.

- (a) *Appliances.* (1) Heating and Cooling Equipment—UL 1995.
- (2) Liquid Fuel Burning Heating Appliances for Manufactured Homes & Recreational Vehicles—UL 307A.
- (3) Fixed and Location-Dedicated Electric Room Heaters—UL 2021.
- (4) Electric Baseboard Heating Equipment—UL 1042.
- (5) Electric Central Air Heating Equipment—UL 1096.
- (6) Gas Burning Heating Appliances for Manufactured Homes & Recreational Vehicles—UL 307B.
- (7) Gas Clothes Dryers Volume 1, Type 1 Clothes Dryers—ANSI Z21.5.1.
- (8) Gas-fired Water Heaters, Volume 3, Storage Water Heaters with Input Ratings Above 75,000 BTU per Hour, Circulating and Instantaneous—ANSI Z21.10.3.
- (9) Gas Fired, Heat Activated Air Conditioning and Heat Pump Appliances—ANSI Z21.40.1.
- (10) Gas Fired Central Furnaces (Except Direct Vent Systems)—ANSI Z21.47.
- (11) Connectors for Outdoor Gas Appliances and Manufactured Homes—ANSI Z21.75
- (12) Decorative Gas Appliances for Installation in Solid Fuel Burning Fireplaces—RADCO DS-010.
- (13) Household Cooking Gas Appliances—ANSI Z21.1.
- (14) Refrigerators Using Gas Fuel—ANSI Z21.19.
- (15) Gas Water Heaters, Volume 1, Storage Water Heaters with Input Ratings of 75,000 BTU per hour or Less—ANSI Z21.10.1.
- (16) Household Electric Storage Tank Water Heaters—UL 174.
- (17) Standard for Household and Similar Electrical Appliances—Safety, Part 2–34: Particular Requirements for Motor-Compressors—UL 60335–2–34.
- (18) Smoke Detectors for Fire Protective Signaling Systems—UL 268.

(19) Standard for Single and Multiple Station Carbon Monoxide Alarms—UL 2034.

(20) Standard for Electric Heating Appliances—UL 499.

(b) *Ferrous Pipe and Fittings.* (1) Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless—ASTM A53/A53M.

(2) Standard Specification for Electric-Resistance-Welded Coiled Steel Tubing for Gas and Fuel Oil Lines—ASTM A539.

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

(4) Welding and Seamless Wrought Steel Pipe—ANSI/ASME B36.10.

(c) *Nonferrous Pipe, Tubing, and Fittings.* (1) Standard Specification for Seamless Copper Water Tube—ASTM B88.

(2) Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service—ASTM B280.

(3) Connectors for Gas Appliances—ANSI Z21.24.

(4) Manually Operated Gas Valves for Appliances, Appliance Connector Valves and Hose End Valves—ANSI Z21.15.

(5) Standard for Gas Supply Connectors for Manufactured Homes—IAPMO TSC 9.

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

(7) Standard Specification for Seamless Copper Pipe, Standard Sizes—ASTM B42.

(d) *Miscellaneous.* (1) Factory-Made Air Ducts & Air Connectors—UL 181.

(2) Closure Systems for use with Rigid Air Ducts and Air Connectors—UL 181A.

(3) Standard for Safety Closure Systems for use with Flexible Air Ducts and Air Connectors—UL 181B.

(4) Standard for Safety Glazing Materials used in Buildings—Safety Performance Specifications and Methods of Test—ANSI Z97.1.

(5) Tube Fittings for Flammable and Combustible Fluids, Refrigeration Service, and Marine Use—UL 109.

(6) Pigtails & Flexible Hose Connectors for LP-Gas—UL 569.

(7) Roof Jacks for Manufactured Homes and Recreational Vehicles, Eighth Edition—UL 311.

(8) Relief Valves for Hot Water Supply Systems—ANSI Z21.22.

(9) Automatic Gas Ignition Systems and Components—ANSI Z21.20.

(10) Automatic Valves for Gas Appliances—ANSI Z21.21.

(11) Gas Appliance Thermostats—ANSI Z21.23 with ANSI Z21.23a

(Addenda 1) and ANSI 21.23b (Addenda 2).

(12) Gas Vents—UL 441.

(13) Installation of Oil-Burning Equipment—NFPA 31.

(14) National Fuel Gas Code—NFPA 54/ANSI Z223.1.

(15) Warm Air Heating and Air Conditioning Systems—NFPA 90B.

(16) Standard for the Storage and Handling of Liquefied Petroleum Gas—NFPA 58.

(17) Flares for Tubing—SAE J533b.

(18) Chimneys, Factory Built Type & Building Heating Appliance—UL 103.

(19) Factory-Built Fireplaces—UL 127.

(20) Solid-Fuel Type Room Heaters—UL 1482.

(21) Fireplace Stoves—UL 737.

(22) Unitary Air-Conditioning and Air-Source Heat Pump Equipment—ANSI/AHRI Standard 210/240 with Addenda 1 and 2.

(23) Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings—ANSI/ASHRAE 62.2.

(24) Requirements for Gas Connectors for Connection of Fixed Appliances for Outdoor Installation, Park Trailers, and Manufactured (Mobile) Homes to the Gas Supply—AGA No. 3.

■ 34. Amend § 3280.705 as follows:

■ a. Revise paragraphs (b)(1), (3), and (5);

■ b. Revise paragraph (c)(2);

■ c. Revise paragraphs (e) and (f);

■ d. Revise the first sentence of paragraph (j); and,

■ e. Revise paragraphs (l)(1), (2)(ii), and (3);

The revisions read as follows:

**§ 3280.705 Gas piping systems.**

\* \* \* \* \*

(b) \* \* \*

(1) Steel or wrought-iron pipe shall comply with ASME B36.10 (incorporated by reference, see § 3280.4). Threaded brass pipe in iron pipe sizes may be used. Threaded brass pipe shall comply with ASTM B43. (incorporated by reference, see § 3280.4).

\* \* \* \* \*

(3) Copper tubing must be annealed type, Grade K or L, conforming to ASTM B88 (incorporated by reference, see § 3280.4), or must comply with the ASTM B280 (incorporated by reference, see § 3280.4). Copper tubing must be internally tinned.

\* \* \* \* \*

(5) Corrugated stainless steel tubing (CSST) systems must be listed and installed in accordance with ANSI LC 1 (incorporated by reference, see



§ 3280.4), and the requirements of this section.

(c) \* \* \*

(2) The connection(s) between units must be made with a connector(s) listed for exterior use or direct plumbing sized in accordance with paragraph (d) of this section. A shutoff valve of the non-displaceable rotor type conforming to ANSI Z21.15 (incorporated by reference, see § 3280.4), suitable for outdoor use must be installed at each crossover point upstream of the connection.

\* \* \* \* \*

(e) *Joints for gas pipe.* All pipe joints in the piping system, unless welded or brazed, shall be threaded joints that comply with ANSI/ASME B1.20.1 (incorporated by reference, see § 3280.4). Right and left nipples or couplings shall not be used. Unions, if used, shall be of ground joint type. The material used for welding or brazing pipe connections shall have a melting temperature in excess of 1,000 °F.

(f) *Joints for tubing.* (1) Tubing joints shall be made with either a single or a double flare of 45 degrees in accordance with SAE J533b (incorporated by reference, see § 3280.4) or with other listed vibration-resistant fittings, or joints may be brazed with material having a melting point exceeding 1,000 °F. Metallic ball sleeve compression-type tubing fittings shall not be used.

(2) Steel tubing joints shall be made with a double-flare in accordance with SAE J533b (incorporated by reference, see § 3280.4).

\* \* \* \* \*

(j) \* \* \* When gas appliances are installed, at least one gas supply connection must be provided on each dwelling unit. \* \* \*

\* \* \* \* \*

(1) \* \* \*(1) *General.* A listed LP-Gas flexible connection conforming to UL 569 (incorporated by reference, see § 3280.4), or equal, must be supplied when LP-Gas cylinder(s) and regulator(s) are supplied.

(2) \* \* \*

(ii) The outlet must be provided with an approved quick-disconnect device, which must 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 (incorporated by reference, see § 3280.4), must be installed immediately upstream of the quick-disconnect device. The complete device must be provided as part of the original installation.

\* \* \* \* \*

(3) *Valves.* A shutoff valve must 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 must 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 by this paragraph (1)(3). The shutoff valve must be of the non-displaceable rotor type and conform to ANSI Z21.15 (incorporated by reference, see § 3280.4).

\* \* \* \* \*

■ 35. Amend § 3280.706 by revising paragraphs (b)(3) and (d) to read as follows:

§ 3280.706 Oil piping systems.

\* \* \* \* \*

(b) \* \* \*

(3) Copper tubing must be annealed type, Grade K or L conforming to ASTM B88 (incorporated by reference, see § 3280.4), or shall comply with ASTM B280 (incorporated by reference, see § 3280.4).

\* \* \* \* \*

(d) *Joints for oil piping.* All pipe joints in the piping system, unless welded or brazed, shall be threaded joints which comply with ANSI/ASME B1.20.1 (incorporated by reference, see § 3280.4). The material used for brazing pipe connections shall have a melting temperature in excess of 1,000 F.

\* \* \* \* \*

■ 36. Amend § 3280.707 as follows:

■ a. Revise the introductory text of paragraph (a);

■ b. Revise the introductory text of paragraph (d)(2) and designate the table immediately following paragraph (d)(2) as table 1 to paragraph (d)(2); and

■ c. Revise the introductory text of paragraph (f);

The revisions read as follows:

§ 3280.707 Heat producing appliances.

(a) Heat producing appliances and vents, roof jacks and chimneys necessary for their installation in manufactured homes must be listed or certified for residential use by a nationally recognized testing agency.

\* \* \* \* \*

(d) \* \* \*

(2) All gas and oil-fired automatic storage water heaters shall have a recovery efficiency, E, and a standby loss, S, as described below. The method of test of E and S shall be as described in section 2.7 of Gas Water heaters, Vol.

I, Storage Water Heaters with Input/Ratings of 75,000 BTU per hour or less, ANSI Z21.10.1 (incorporated by reference, see § 3280.4), except that for oil-fired units. CF = 1.0, Q = total gallons of oil consumed and H = total heating value of oil in BTU/gallon.

\* \* \* \* \*

(f) *Oil-fired heating equipment.* All oil-fired heating equipment must conform to UL 307A (incorporated by reference, see § 3280.4) and be installed in accordance with NFPA 31 (incorporated by reference, see § 3280.4). Regardless of the requirements of the above-referenced standards, or any other standards referenced in this part, the following are not required:

\* \* \* \* \*

■ 37. Amend § 3280.709 by revising the introductory text of paragraph (a) and the introductory text of paragraph (g) to read as follows:

§ 3280.709 Installation of Appliances.

(a) The installation of each appliance must conform to the terms of its listing and the manufacturer's instructions. Every appliance must be secured in place to avoid displacement. For the purpose of servicing and replacement, each appliance must be both accessible and removable.

\* \* \* \* \*

(g) Solid fuel burning fireplaces and fireplace stoves listed for residential use may be installed in manufactured homes provided they and their installation conform to the following paragraphs. A fireplace or fireplace stove is not to be considered as a heating facility for determining compliance with subpart F of this part.

\* \* \* \* \*

■ 38. Revise § 3280.711 to read as follows:

§ 3280.711 Instructions.

Operating instructions must be provided with each appliance unless the appliance is affixed with a permanent Quick Response (QR) Code. The operating instructions for each appliance must be provided with the homeowner's manual.

■ 39. Amend § 3280.714 by revising paragraphs (a)(1) and (2) to read as follows:

§ 3280.714 Appliances, cooling.

(a) \* \* \*

(1) Mechanical air conditioners shall be rated in accordance with the ANSI/AHRI Standard 210/240 with Addenda 1 and 2 (incorporated by reference, see § 3280.4) and certified by AHRI or other nationally recognized testing agency capable of providing follow-up service.

(i) Electric motor-driven unitary air-cooled air conditioners and heat pumps in the cooling mode with rated capacity less than 65,000 BTU/hour (19,045 watts), when rated at AHRI standard rating conditions in ANSI/AHRI Standard 210/240 with Addenda 1 and 2 (incorporated by reference, see § 3280.4), must have seasonal energy efficiency (SEER) values not less than as specified in 10 CFR part 430, Energy Conservation Program for Consumer Products: Central Air Conditioners and Heat Pumps Energy Conservation Standards.

(ii) Heat pumps must be certified to comply with all requirements of the ANSI/AHRI Standard 210/240 with

Addenda 1 and 2 (incorporated by reference, see § 3280.4). Electric motor-driven vapor compression heat pumps with supplemental electrical resistance heat must be sized to provide by compression at least 60 percent of the calculated annual heating requirements for the manufactured home being served. A control must be provided and set to prevent operation of supplemental electrical resistance heat at outdoor temperatures above 40 °F (4 °C), except for defrost conditions. Electric motor-driven vapor compression heat pumps with supplemental electric resistance heat conforming to ANSI/AHRI Standard 210/240 with Addenda 1 and

2 (incorporated by reference, see § 3280.4), must have Heating Season Performance Factor (HSPF) efficiencies not less than as specified in the 10 CFR part 430, Energy Conservation Program for Consumer Products: Central Air Conditioners and Heat Pumps Energy Conservation Standards.

(iii) Electric motor-driven vapor compression heat pumps with supplemental electric resistance heat conforming to ANSI/AHRI Standard 210/240 with Addenda 1 and 2 (incorporated by reference, see § 3280.4), shall show coefficient of performance ratios not less than shown below:

**Table 1 to paragraph (a)(1)(iii) - COP**

Temperature degrees Fahrenheit	Coefficient of performance
47	2.5
17	1.7
0	1.0

(2) Gas fired absorption air conditioners must be listed or certified in accordance with ANSI Z21.40.1, (incorporated by reference, see § 3280.4), and certified by a nationally recognized testing agency capable of providing follow-up service.

\* \* \* \* \*

■ 40. Amend § 3280.715 as follows:

■ a. Revise the introductory text of paragraph (a)(1) and designate the table immediately following paragraph (a)(1) as table 1 to paragraph (a)(1); and,

■ b. Revise paragraph (c) and the introductory text of paragraph (e),

The revisions read as follows:

**§ 3280.715 Circulating air systems.**

(a) \* \* \* (1) Supply air ducts, fittings, and any dampers contained there-in must be made of galvanized steel, tin-plated steel, or aluminum, or must be listed as Class 0 or Class 1 air ducts in accordance with UL 181 (incorporated by reference, see § 3280.4). Air ducts and air connectors located within three feet of the furnace discharge must be rated to withstand the maximum air discharge temperature of the equipment. Air connectors must not be used for exterior manufactured home duct connections. A duct system integral with the structure must be of durable construction that can be demonstrated to be equally resistant to fire and deterioration as required by this section. Ducts constructed of sheet metal must

be in accordance with the following table:

\* \* \* \* \*

(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 one inch (“1”) 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 181A (incorporated by reference, see § 3280.4). Tapes and mastic closure systems used with factory-made flexible air ducts and air connectors shall be listed in accordance with UL 181B, (incorporated by reference, see § 3280.4).

\* \* \* \* \*

(e) *Registers and grilles.* Fittings connecting the registers and grilles to the duct system must be constructed of metal or material that complies with the requirements of Class 1 or 2 ducts under UL 181 (incorporated by reference, see § 3280.4). Air supply terminal devices (registers) when installed in kitchen, bedrooms, and bathrooms must be equipped with adjustable closeable

dampers. Registers or grilles must be constructed of metal or conform with the following:

\* \* \* \* \*

■ 41. Amend § 3280.801 by revising paragraphs (a) and (b) to read as follows:

**§ 3280.801 Scope.**

(a) This subpart I incorporates by reference NFPA 70, the National Electrical Code (incorporated by reference, see § 3280.4) including Part II of Article 550 of NFPA 70, and covers the electrical conductors and equipment installed within or on manufactured homes and the conductors that connect manufactured homes to a supply of electricity. However, Articles 550.4(A) and 550.4(B) of NFPA 70 shall not apply.

(b) In addition to the requirements of this part and Part II of Article 550 of NFPA 70, the applicable portions of other Articles of NFPA 70 referenced in this part must be followed for electrical installations in manufactured homes. The use of arc-fault breakers under the NFPA 70, are only required for general lighting circuits. Smoke alarms installed on a dedicated circuit do not require arc fault protection. Wherever arc-fault breakers are provided, such use must be in accordance with NFPA 70. Wherever the requirements of this part standards differ from NFPA 70, these standards apply.

\* \* \* \* \*

■ 42. Amend § 3280.802 by revising paragraph (a)(21) to read as follows:

§ 3280.802 Definitions.

\* \* \* \* \*

(21) Feeder assembly means the overhead or under-chassis feeder conductors, including the grounding conductor, together with the necessary fittings and equipment, or a power supply cord approved for manufactured home use, designed for the purpose of delivering energy from the source of electrical supply to the distribution panelboard within each dwelling unit.

\* \* \* \* \*

■ 43. Amend § 3280.803 by revising paragraphs (a) and (k)(1) and (3) to read as follows:

§ 3280.803 Power supply.

(a) The power supply to the manufactured home must be a feeder assembly consisting of not more than one listed 50 ampere manufactured home power supply cord, or a permanently installed circuit. A manufactured home that is factory equipped with gas or oil-fired heating equipment and cooking appliances is permitted to be provided with a listed power supply cord rated 40 amperes. This section does not apply to multi-dwelling unit manufactured homes.

\* \* \* \* \*

(k) \* \* \*

(1) One mast weatherhead installation installed in accordance with Article 230 of NFPA No. 70 (incorporated by reference, see § 3280.4), containing four continuous insulated, color-coded, feeder conductors, one of which shall be an equipment grounding conductor; or

\* \* \* \* \*

(3) Service equipment installed in or on the manufactured home, provided that all of the following conditions are met:

(i) In its written installation instructions, the manufacturer must include information indicating that the home must be secured in place by an anchoring system or installed on and secured to a permanent foundation;

(ii) The installation of the service equipment complies with Article 230 of NFPA 70. Exterior service equipment or the enclosure in which it is to be installed must be weatherproof, and conductors must be suitable for use in wet locations;

(iii) The installation of the service equipment complies with Article 230 of NFPA 70. Exterior service equipment or the enclosure in which it is to be installed must be weatherproof, and conductors must be suitable for use in wet locations;

(iv) Bonding and grounding of the service must be in accordance with Article 250 of NFPA 70;

(v) The manufacturer must include in its installation instructions one method of grounding the service equipment at the installation site. The instructions must clearly state that other methods of grounding are found in Article 250 of NFPA 70;

(vi) The minimum size grounding electrode conductor must be specified in the instructions; and

(vii) A red warning label must be mounted on or adjacent to the service equipment. The label must state the following: WARNING—DO NOT PROVIDE ELECTRICAL POWER UNTIL THE GROUNDING ELECTRODE(S) IS INSTALLED AND CONNECTED (SEE INSTALLATION INSTRUCTIONS).

■ 44. Amend § 3280.804 as follows:

■ a. Revise paragraphs (a) and (c);

■ b. Revise the introductory text of paragraph (g), add and reserve paragraph (g)(2);

■ c. Revise paragraph (k); and

■ d. Add paragraph (m).

The revisions and addition read as follows:

§ 3280.804 Disconnecting means and branch-circuit protective equipment.

(a) The branch-circuit equipment is permitted to be combined with the disconnecting means as a single assembly. Such a combination is permitted to be designated as a distribution panelboard. If a fused distribution panelboard is used, the maximum fuse size for the mains shall be plainly marked, with the lettering at least ¼ inch high and visible when fuses are changed. See Article 110.22 of NFPA 70 (incorporated by reference, see § 3280.4), concerning the identification of each disconnecting means and each service, feeder, or branch circuit at the point where it originated, and the type of marking needed.

\* \* \* \* \*

(c) A single disconnecting means must be provided in each dwelling unit, consisting of a circuit breaker, or a switch and fuses and its accessories, installed in a readily accessible location near the point of entrance of the supply cord or conductors into the dwelling unit.

\* \* \* \* \*

(g) Branch-circuit distribution equipment must be installed in each dwelling unit and must include overcurrent protection for each branch circuit consisting of either circuit breakers or fuses.

\* \* \* \* \*

(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 must be provided in accordance with Article 230, Part VI of NFPA 70 (incorporated by reference, see § 3280.4). The disconnecting means shall be listed for use as service equipment. The disconnecting means may be combined with the disconnect required by paragraph (c) of this section. The disconnecting means shall be rated not more than the ampere supply or service capacity indicated on the tag required by paragraph (l) of this section.

\* \* \* \* \*

(m) A service distribution panel must be factory installed and connected to the subpanels on multi-dwelling unit manufactured homes.

■ 45. Amend § 3280.805 by revising paragraphs (a)(1) and (3)(iv) to read as follows:

§ 3280.805 Branch circuits required.

(a) \* \* \*

(1) Lighting. For lighting, based on a 3 volt-amperes per square foot times outside dimensions of each dwelling unit (coupler excluded) divided by 120 volts times amperes to determine the number of 15 or 20 ampere lighting area circuits.

\* \* \* \* \*

(3) \* \* \*

(iv) The rating of the range branch circuit is based on the range demand as specified for ranges in § 3280.811(a)(5). For central air conditioning, see Article 440 of NFPA 70 (incorporated by reference, see § 3280.4).

\* \* \* \* \*

■ 46. Amend § 3280.806 by revising paragraphs (a)(2) and (d)(8) to read as follows:

§ 3280.806 Receptacle outlets.

(a) \* \* \*

(2) Installed according to Article 406.3 of NFPA 70 (incorporated by reference, see § 3280.4).

\* \* \* \* \*

(d) \* \* \*

(8) At least one receptacle outlet shall be installed outdoors. Additional outdoor receptacles shall be installed in accordance with Article 210.52(E)(3) of NFPA 70 (incorporated by reference, see § 3280.4), except those balconies, decks, or porches with an area of less than 20 square feet are not required to have an additional receptacle installed.

\* \* \* \* \*

■ 47. Amend § 3280.807 by revising paragraph (c) to read as follows:

§ 3280.807 Fixtures and appliances.

\* \* \* \* \*

(c) Where a lighting fixture is installed over a bathtub or in a shower

stall, it must be listed for wet locations. See also Article 410.4(D) of NFPA 70 (incorporated by reference, see § 3280.4).

\* \* \* \* \*

■ 48. Amend § 3280.808 by revising paragraphs (a), (k), (l), and (p) to read as follows:

§ 3280.808 Wiring methods and materials.

(a) Except as specifically permitted by this part, the wiring methods and materials specified in NFPA 70 (incorporated by reference, see § 3280.4) must be used in manufactured homes.

\* \* \* \* \*

(k) Where outdoor or under-chassis line voltage (120 volts, nominal or higher) wiring is exposed to moisture or subject to physical damage, it must be protected by a conduit or raceway approved for use in wet locations. The conductors must be suitable for use in wet locations.

(l) Outlet boxes of dimensions less than those required in Table 314.16(A) of NFPA 70 (incorporated by reference, see § 3280.4), are permitted provided the box has been tested and approved for that purpose.

\* \* \* \* \*

(p) A substantial brace for securing a box, fitting, or cabinet must be as described in Article 314.23(B) of NFPA 70 (incorporated by reference, see § 3280.4), or the brace, including the fastening mechanism to attach the brace to the home structure, must 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 on which the box is installed.

\* \* \* \* \*

■ 49. Amend § 3280.810 by revising paragraph (b)(3) to read as follows:

§ 3280.810 Electrical testing.

\* \* \* \* \*

(b) \* \* \*

(3) Electrical polarity checks to determine that connections have been made in accordance with applicable provisions of these standards and Article 550.17 of NFPA 70 (incorporated by reference, see § 3280.4). Visual verification is an acceptable electrical polarity check.

■ 50. Amend § 3280.811 by revising 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 are permitted to have the neutral load determined by Article 220.61 of NFPA 70 (incorporated by reference, see § 3280.4). The loads identified in the table as "other load" and as "Remainder of other load" must include the following:

\* \* \* \* \*

■ 51. Amend § 3280.1003 by revising paragraph (a)(1) to read as follows:

§ 3280.1003 Attached manufactured home unit separation.

(a) \* \* \* (1) Attached manufactured homes shall be separated from each other by a fire separation wall of not less than 1-hour fire-resistive rating with exposure from both sides on each attached manufactured home unit when rated based on tests in accordance with ASTM E119 (incorporated by reference, see § 3280.4).

\* \* \* \* \*

PART 3282—MANUFACTURED HOME PROCEDURAL AND ENFORCEMENT REGULATIONS

■ 52. The authority citation for part 3282 continues to read as follows:

Authority: 15 U.S.C. 2697, 28 U.S.C. 2461 note, 42 U.S.C. 3535(d), 5403, and 5424.

■ 53. Amend § 3282.7 by revising paragraphs (t) and (v) and removing paragraph (oo) to read as follows:

§ 3282.7 Definitions.

\* \* \* \* \*

(t) *Length of Manufactured Home* is defined in § 3280.2 of this chapter.

\* \* \* \* \*

(v) *Manufactured Home* is defined in § 3280.2 of this chapter.

\* \* \* \* \*

§ 3282.8 [Amended].

■ 54. Amend § 3282.8 by removing paragraph (l).

PART 3285—MODEL MANUFACTURED HOME INSTALLATION STANDARDS

■ 55. The authority citation for part 3285 continues to read as follows:

Authority: 42 U.S.C. 3535(d), 5403, 5404, and 5424.

■ 56. Amend § 3285.5 as follows:

■ a. Add, in alphabetical order, definition for "peak cap assembly";

■ b. Remove definition for "Peak cap construction" and add, in its place, a definition for "Peak cap construction";

■ c. Add, in alphabetical order, definitions for "peak cap assembly" and "peak flip assembly"

■ d. Remove definition for "Peak flip construction" and add, in its place, a definition for "Peak flip construction".

The additions read as follows:

§ 3285.5 Definitions.

\* \* \* \* \*

*Peak cap assembly* means any roof peak assembly that is either shipped loose or site completed and is site installed to finish the roof ridge/peak of a home.

*Peak cap construction* means any roof peak construction that is either shipped loose or site constructed and is site installed to complete the roof ridge/peak of a home. *Peak flip assembly* means any roof peak assembly that requires the joining of two or more cut top chord members on site. The cut top chords must be joined at the factory by straps, hinges, or other means.

*Peak flip construction* means any roof peak construction that requires the joining of two or more cut top chord members on site. The cut top chords must be joined at the factory by straps, hinges, or other means.

\* \* \* \* \*

■ 57. Amend § 3285.503 by revising paragraph (b) to read as follows:

§ 3285.503 Optional appliances.

\* \* \* \* \*

(b) *Fireplaces and wood-stoves*. When not provided by the home manufacturer, fireplaces and wood-stoves must be listed for residential use and must be installed in accordance with their listings.

\* \* \* \* \*

■ 58. Add § 3285.506 to subpart F to read as follows:

§ 3285.506 Testing and certification of fire sprinkler systems for multi-dwelling units.

The installer will certify and test residential fire sprinkler systems on site in accordance with home manufacturer's instructions and as outlined in § 3280.214 of this chapter. The installer should ensure that a required listed minimum water supply is available for the system. Testing requirements are to be consistent with § 3280.612(a) of this chapter and certified by the installer.

■ 59. Amend § 3285.603 by revising paragraphs (d)(3) and (e)(1) to read as follows:

§ 3285.603 Water supply.

\* \* \* \* \*

(d) \* \* \*

(3) Only heat tape or pipe heating cable listed and certified for its intended purpose is permitted for use, and it must be installed in accordance with tape or cable manufacturer installation instructions.

(e) \* \* \* (1) The water system must be inspected and tested for leaks after completion at the site. The installation instructions must provide testing requirements that are in accordance with the piping manufacturer's instructions.

\* \* \* \* \*

■ 60. Amend § 3285.801 by revising paragraph (f)(2) to read as follows:

**§ 3285.801 Exterior close-up.**

\* \* \* \* \*

(f) \* \* \*

(2) In which the roof pitch of the hinged roof is less than 7:12, including designs incorporating peak cap or peak flip assembly components; and

\* \* \* \* \*

**PART 3286—MANUFACTURED HOME INSTALLATION PROGRAM**

■ 61. The authority citation for part 3286 continues to read as follows:

Authority: 42 U.S.C. 3535(d), 5404, and 5424.

■ 62. Revise § 3286.103 to read as follows:

**§ 3286.103 DAPIA-approved installation instructions.**

(a) *Providing instructions to purchaser or lessee.* (1) For each manufactured home sold or leased to a purchaser or lessee, the retailer must provide the purchaser or lessee with the manufacturer's DAPIA-approved installation instructions for the home, a copy of which is shipped with the home in accordance with § 3285.2 of this chapter.

(2) If the installation requires a design that is different from that provided by the manufacturer in paragraph (a)(1) of this section, the installation design and instructions must be prepared and certified by a professional engineer or registered architect, that have been approved by the manufacturer and the DAPIA as providing a level of protection for residents of the home that equals or exceeds the protection provided by the federal installation standards in part 3285 of this chapter. The retailer or manufacturer must provide the installation design and instructions to the purchaser or lessee.

(b) *Providing instructions to installer.* When the retailer or manufacturer agrees to provide any set up in connection with the sale of the home, the retailer or manufacturer must provide to the licensed installer a copy of the approved installation instructions required in paragraph (a)(1) or (2) of this section or, as applicable, to each company or, in the case of sole proprietor, to each individual who performs setup or installation work on the home.

■ 63. Amend § 3286.205 by revising paragraph (d) to read as follows:

**§ 3286.205 Prerequisites for installation license.**

\* \* \* \* \*

(d) *Insurance and either a surety bond or irrevocable letter of credit.* An applicant for an installation license must provide evidence of and must maintain, when available in the state of installation, insurance and either a surety bond or irrevocable letter of credit that will cover the cost of repairing all damage to the home and its supports caused by the installer during the installation up to and including replacement of the home. HUD may require the licensed installer to provide proof of the surety bond or insurance at any time. The licensed installer must

notify HUD of any changes or cancellations with the insurance coverage, surety bond, or irrevocable letter of credit.

■ 64. Amend § 3286.207 by revising paragraph (d) to read as follows:

**§ 3286.207 Process for obtaining installation license.**

\* \* \* \* \*

(d) *Proof of insurance and either a surety bond or irrevocable letter of credit.* Every applicant for an installation license must submit the name and proof of the applicant's insurance carrier and the number of the policy, surety bond, or irrevocable letter of credit required in § 3286.205(d).

\* \* \* \* \*

■ 65. Amend § 3286.209 by revising paragraph (b)(8)(vi) to read as follows:

**§ 3286.209 Denial, suspension, or revocation of installation license.**

\* \* \* \* \*

(b) \* \* \*

(8) \* \* \*

(vi) Failure to maintain the insurance and either a surety bond or irrevocable letter of credit, required by § 3286.205(d).

\* \* \* \* \*

■ 66. Amend § 3286.409 by revising paragraph (b) to read as follows:

**§ 3286.409 Obtaining inspection.**

\* \* \* \* \*

(b) *Contract rights not affected.* Failure to arrange for an inspection of a home within 10 business days will not affect the validity or enforceability of any sale or contract for the sale of any manufactured home.

\* \* \* \* \*

**Julia Gordon,**

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