Manufactured Housing Consensus Committee

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TO: Manufactured Housing Consensus Committee Members

FROM: Robert E. Solomon

DATE: 26 November 2003

SUBJECT: **Segmented Ballot - Update MHCSS - 2003 Edition of NFPA 501**

The ballot and ballot material for the subject document is enclosed. Your vote on these proposed changes (56 Total) is to be based upon the committee action for the proposed changes as shown. As previously explained in similar ballots, the 3 column table shows the change as accepted in NFPA 501 (03 Edition); how Part 3280 would be revised if the change is accepted; how Part 3280 is currently worded.

At the August 2003 meeting, the MHCC voted to submit all 56 changes for letter ballot (based on NFPA 501, 2003 Ed).

If you wish to vote negative or if you abstain on any or all items, please indicate your reasons for doing so. Do not cast a negative vote for items that are editorial in nature, but do bring any such items to my attention.

The final date for return of this ballot is **Monday, 8 December 2003**. Please note that the time frame is relatively short so that you can have a chance to discuss the preliminary results during the MHCC meeting that commences on 9 December.

Feel free to call or email me if you have any questions.

By way of a brief explanation, this is a segmented ballot. You do not have to support all 56 changes. You may disagree with one or two items and simply vote "Affirmative" except as indicated. You have 4 voting options on this ballot. If you agree with all 56 changes, you simply vote "Affirmative on all items". If you have a concern with one or more items, you vote "Affirmative except as indicated below" and check the appropriate box for that item(s) - Affirmative w/comment, negative, abstain. If you agree with the proposed change, but have a minor concern with the change, or if you see some editorial glitch, you may want to vote affirmative with comment. If you disagree with a substantial part of the change, you would vote in the negative for that change. Abstain votes are normally only reserved if you believe there is some conflict of interest, or if you do not feel qualified to pass judgment on an issue.

Once the **Monday, 8 December 2003** date has passed we will tabulate the results, recirculate any affirmative with comment, negative, or abstain votes with the requisite reasons, and give you a chance to review those and change your vote. Time permitting, some discussion on specific issues may be possible while we are in Phoenix. Between now and that date, you will receive one or two reminders on the impending ballot due date.

When you vote, you need only return the first page of the ballot if you vote affirmative on all items. Please feel free to attach additional pages if you need to provide more information on your reasons.

RES:jtm

Jill McGovern
NFPA
Building and Life Safety Codes Dept.
Ext. 7404

LETTER BALLOT

Segmented Ballot – Update MHCSS – 2003 Edition NFPA 501-03

Complete the ballot as indicated. If you vote affirmative with comment, negative, or if you abstain on any section, please indicate the reason(s) for doing so. Once you have reviewed the material, and completed this ballot, return to:

Jill McGovern
NFPA
1 Batterymarch Park
Quincy, MA 02269
FAX: (617) 984-7110
EMAIL: jmcgovern@nfpa.org

The due date for receipt of this ballot is: **Monday, 8 December 2003**

NAME: _____

DATE: _____

With respect to the proposed model installation standards, record my vote as:

☐ AFFIRMATIVE ON ALL ITEMS

☐ AFFIRMATIVE ON ALL ITEMS EXCEPT AS NOTED BELOW

Proposed Change Number	24 CFR 3280 Referenced Section	Comm Action	Affirm with Comment	Negative*	Abstain*
2 ROP 1 ROC	§3280.2	A			
5 ROP	§ 3280.3	A			
6 ROP (NEW)	§3280.4 Incorporation by reference.	A			
7 ROP	§3280.11	A			
5 ROC (NEW)	§3280.103	A			

* Reasons must accompany these votes

Proposed Change Number	24 CFR 3280 Referenced Section	Comm Action	Affirm with Comment	Negative*	Abstain*
4 ROC (NEW)	**§ 3280.103 Light and Ventilation**	**A**			
12 ROC (NEW)	**§ 3280.113 Glass and glazed openings.**	**A**			
- Editorial -	**§3280.105(b)(2)**	**A**			
10 ROC (NEW)	**§3280.108**	**A**			
10 ROC (NEW)	**§3280.111 Toilet compartments.**	**A**			
11 ROC	**3280.112 Hallways.**	**A**			
25 ROP 26 ROP (NEW)	**§3280.114 (a) Landings.**	**A**			
29 ROP (NEW)	**§3280.114 (b) Handrails.**	**A**			
8 ROP (NEW)	**§3280.114(b)(5)**	**A**			
33 ROP (NEW)	**§3280.114(c) Guards.**	**A**			
8 ROP (NEW)	**§3280.114(c)(2)(ii)**	**A**			
23 ROP (NEW)	**§3280.114(d)**	**A**			
35 ROP	**§3280.204(c)**	**A**			
20 ROC (NEW)	**§3280.210 Draftstopping.**	**A**			
39 ROP (NEW)	**§3280.211 Attached garages.**	**A**			
21 ROC	**§3280.304 Materials. Steel**	A			
40 ROP	**§ 3280.305 Structural design requirements.**	**A**			
40 ROP	**§3280.305(e) (e) *Fastening of structural systems.***	**A**			
42 ROP (NEW)	**§3280.305(g)(5)**	**A**			
23 ROC (NEW)	**§3280.305(h)**	**A**			
25 ROC (NEW)	**§3280.307(e)**	**A**			
49 ROP	**§ 3280.502(a)(2)**	**A**			

* Reasons must accompany these votes

Proposed Change Number	24 CFR 3280 Referenced Section	Comm Action	Affirm with Comment	Negative*	Abstain*
51 ROP (NEW)	**§ 3280.504 Condensation control and installation of vapor retarders.**	**A**			
54 ROP	**§3280.504(b)** **(b) *Exterior walls.***	**A**			
57 ROP (NEW)	**§3280.504(c)** **(c) *Attic or roof ventilation.***	**A**			
60 ROP (NEW)	**§3280.506(a)**	**A**			
34 ROC	**§ 3280.507 Comfort heat gain.**	**A**			
33 ROC	**§3280.508(e)**	**A**			
66 ROP	**§3280.608(b)**	**A**			
39 ROC	**§3280.609(c)(iii)**	**A**			
70 ROP	**§3280.610(c)(5)**	**A**			
71 ROP	**§3280.611(c)**	**A**			
72 ROP	**§ 3280.612 Tests and inspection.**	**A**			
76 ROP	**§ 3280.703 Minimum Standards Gas Clothes Dryers Vol. 1, Type 1 Clothes Dryers--ANSI Z21.5.1-1999 with Addenda Z21.5.1a 1999** **Gas-Fired Central Furnaces [Except Direct Vent System Central Furnaces]--ANSI Z21.47-1998, With Addendum Z21.47a-1999.** **Household Cooking Gas Appliances ANSI Z21.1-1996.** **Gas Water Heaters Vol. 1, Storage Water Heaters With Input Ratings of 75,000 BTU per hour or Less--ANSI Z21.10.1-1998, With Addendum Z21.10.1-2000** **Ferrous Pipe and Fittings** **Gas Piping Systems Using Corrugated Stainless Steel Tubing - LC 1-1997 with Addenda LC-1a-1999.** **Nonferrous Pipe, Tubing, and Fittings**	**A** **A** **A** **A** A **A** A			

* Reasons must accompany these votes

Proposed Change Number	24 CFR 3280 Referenced Section	Comm Action	Affirm with Comment	Negative*	Abstain*
	Metal Connectors for Gas Appliances--ANSI Z21.24-1997, With Addenda Z21.24a 2000.	**A**			
	Miscellaneous	A			
	Relief Valves and Automatic Gas Shutoff Devices for Hot Water Supply Systems--ANSI Z21.22-1999, With Addendum Z.	**A**			
	Automatic Gas Ignition Systems and Components--ANSI Z21.20-2000, With Addendum Z21.20a.	**A**			
	Automatic Valves for Gas Appliances--ANSI Z21.21-1995, With Addendum Z21.21a-1998 and Z21.21b-1999.	**A**			
	Gas Appliance Thermostats--ANSI Z21.23-2000.	**A**			
77 ROP	**§3280.705(c)(1)**	**A**			
77 ROP	**§3280.705(j)** **(j)** ***Gas supply connections.*** **§3280.705(k)** **(k)** ***Identification of gas supply connections***	**A**			
78 ROP	**§3280.705(l)(7)** **(7)** ***Hangers and supports.***	**A**			
79 ROP	**§3280.705(l)(8)** **(8)** ***Testing for leakage***	**A**			
80 ROP	**§3280.705(l)(8)(iii)**	**A**			
81 ROP	**§3280.708(a)(1)** **(a)** ***Clothes dryers.***	**A**			
41 ROC	**§3280.709(a)(1)**	**A**			
42 ROC	**§3280.709(h)**	**A**			
43 ROC	**§3280.715(a)(4)**	**A**			
87 ROP	**§3280.715(a)(7)**	**A**			
44 ROC	**§3280.715(c)**	**A**			
46 ROC--> 93 ROP--	**§3280.810(b)** **(b) Each manufactured home shall be subject to:** **(1) A continuity test to assure that metallic parts are effectively bonded;**	**A**			

* Reasons must accompany these votes

Proposed Change Number	24 CFR 3280 Referenced Section	Comm Action	Affirm with Comment	Negative*	Abstain*
> 47 ROC-- >	(2) Operational test of all…. (3) Electrical polarity checks to determine that connections have been made in accordance with applicable provisions of MHCSS and NFPA 70, National Electrical Code. Visual verification shall be an acceptable electrical polarity check.				
48 ROC	Subpart J – Transportation §3280.902 §3280.903(a) §3280.903(a)(1) §3280.903(a)(2) §3280.904(a) §3280.904(b)(1) §3280.904(b)(2) §3280.904(b)(3) §3280.904(b)(4) §3280.904(b)(5) §3280.904(b)(6) §3280.904(b)(6)(i) §3280.904(b)(8) §3280.904(b)(9)(i) §3280.904(b)(10)	A			
103 ROP (NEW)	Subpart H – Special Construction Consideration §3280.1001 Scope. §3280.1003 Dwelling Unit Separation. §3280.1004 Exterior Walls. §3280.1006 Water Service.	A			
21 ROC	§3280.403 §3280.4 §3280.304 Other §3280.4 §3280.304 Fasteners	A			

* Reasons must accompany these votes

The following information is the activity of the NFPA Manufactured Homes Technical Committees for the revisions done for the 2003 edition of NFPA 501 as compared to the current 24 CFR 3280 document.

From left to right: The 1st column (Ref.) corresponds with the supporting material that includes the November 2002 Report on Proposals (ROP) and Report on Comments (ROC). The 2nd column reflects the text of the 2003 edition of NFPA 501 with changes shown from the 2000 edition text. The 3rd column of the chart reflects the proposed changes to 24 CFR 3280 with changed areas highlighted. The 4th column shows the current wording of 24 CFR 3280 (1999 version). Those sections that are underlined, strikethrough, or italicized are provided to assist the user in identifying that text which may have been revised.

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
2 ROP 1 ROC	**1.2.24 State.** Includes all 50 individual states that make up the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, the U.S. Virgin Islands, ~~the Canal Zone,~~ and American Samoa.	§3280.2 **State includes all 50 individual states that make up the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, the U.S. Virgin Islands, and American Samoa.**	§3280.2 *State* includes each of the several States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, the Virgin Islands, the Canal Zone, and American Samoa.
5 ROP	**1.3 Consumer Manual Requirements.** Consumer manuals shall be in accordance with ~~24 CFR 3283, "Manufactured Home Consumer Manual Requirements."~~ 24 CFR 3282, "Manufactured Home Procedural and Enforcement Regulations," Section 3282.207.	§ 3280.3 Manufactured home procedural and enforcement regulations and consumer manual requirements. **(a)** A manufacturer must comply with the requirements of this part 3280, part 3282 of this chapter, and 42 U.S.C. 5416. **(b) Consumer manuals shall be in accordance with 24 CFR 3282, "Manufactured Home Procedural and Enforcement Regulations," Section 3282.207.**	**(new material not currently addressed in 3280)**
6 ROP **(NEW)**	**1.4 Incorporation by Reference.** **NFRC – National Fenestration Rating Council,** 8484 Georgia Avenue, Suite 320, Silver Spring, MD 20910	§3280.4 Incorporation by reference. **NFRC – National Fenestration Rating Council, 8484 Georgia Avenue, Suite 320, Silver Spring, MD 20910**	**(new material not currently addressed in 3280)**
7 ROP	**1.11.4*** The label shall be located ~~on the rear left road side~~ at the taillight end of each transportable section of the manufactured home~~,~~ approximately 1 ft (300 mm)	§3280.11 Certification label. (d) **The label shall be located at the tail-light end**	§3280.11 Certification label. (d) The label shall be located at the tail-light end

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
7 ROP (cont.)	up from the floor and 1 ft (300 mm) in from the road side, or as near that location on a permanent part of the exterior of the manufactured home ~~unit~~ section as practicable. When locating the label on the taillight end of a transportable section will prevent the label from being visible after the manufactured home section is installed at the installation site, the label shall be installed on a permanent part of the exterior of the manufactured home section, in a visible location as specified in the approved design.	**of each transportable section of the manufactured home approximately one foot up from the floor and one foot in from the road side, or as near that location on a permanent part of the exterior of the manufactured home section as practicable.** The road side is the right side of the manufactured home when one views the manufactured home from the tow bat end of the manufactured home. **When locating the label on the taillight end of a transportable section will prevent the label from being visible after the manufactured home section is installed at the installation site, the label shall be installed on a permanent part of the exterior of the manufactured home section, in a visible location as specified in the approved design.**	of each transportable section of the manufactured home approximately one foot up from the floor and one foot in from the road side, or as near that location on a permanent part of the exterior of the manufactured home unit as practicable. The road side is the right side of the manufactured home when one views the manufactured home from the tow bat end of the manufactured home.
5 ROC **(NEW)**	**4.3.1.2** In bathrooms, ceiling-mounted lighting fixtures and wall-mounted lighting fixtures shall not be controlled by the same switch.	§3280.103 (a) *Lighting.* Each habitable room shall be provided with exterior windows and/or doors having a total glazed area of not less than 8 percent of the gross floor area. (1) Kitchens, bathrooms, toilet compartments, laundry areas, and utility rooms may be provided with artificial light in place of windows. **(2) In bathrooms, ceiling-mounted lighting fixtures and wall-mounted lighting fixtures shall not be controlled by the same switch.** **(3)** Rooms and areas may be combined for the purpose of providing the required natural lighting provided that at least one half of the common wall area is open and unobstructed, and the open area is at least equal to 10 percent of the combined floor area or 25 square feet whichever is greater.	§3280.103 (a) *Lighting.* Each habitable room shall be provided with exterior windows and/or doors having a total glazed area of not less than 8 percent of the gross floor area. (1) Kitchens, bathrooms, toilet compartments, laundry areas, and utility rooms may be provided with artificial light in place of windows. (2) Rooms and areas may be combined for the purpose of providing the required natural lighting provided that at least one half of the common wall area is open and unobstructed, and the open area is at least equal to 10 percent of the combined floor area or 25 square feet whichever is greater.
4 ROC **(NEW)**	**4.3.1.3** Linear fluorescent fixtures shall utilize T-8 lamps or lamps of equal or greater efficiency.	§ 3280.103 Light and Ventilation (a) *Lighting.* Each habitable room shall be provided with exterior windows and/or doors having a total	§ 3280.103 Light and Ventilation (a) *Lighting.* Each habitable room shall be provided with exterior windows and/or doors

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
		glazed area of not less than 8 percent of the gross floor area. (1) Kitchens, bathrooms, toilet compartments, laundry areas, and utility rooms may be provided with artificial light in place of windows. (2) Rooms and areas may be combined for the purpose of providing the required natural lighting provided that at least one half of the common wall area is open and unobstructed, and the open area is at least equal to 10 percent of the combined floor area or 25 square feet whichever is greater. **(3) Linear fluorescent fixtures shall utilize T-8 lamps or lamps of equal or greater efficiency.**	having a total glazed area of not less than 8 percent of the gross floor area. (1) Kitchens, bathrooms, toilet compartments, laundry areas, and utility rooms may be provided with artificial light in place of windows. (2) Rooms and areas may be combined for the purpose of providing the required natural lighting provided that at least one half of the common wall area is open and unobstructed, and the open area is at least equal to 10 percent of the combined floor area or 25 square feet whichever is greater.
12 ROC **(NEW)** 12 ROC **(NEW)** (cont.)	**4.3.1.5** Required glazed openings shall be permitted to face into a roofed porch where the porch abuts a street, yard, or court and the longer side of the porch is at least 65 percent open and unobstructed and the ceiling height is not less than 7 ft (2.1 m).	§ 3280.113 Glass and glazed openings. (a) *Windows and sliding glass doors.* All windows and sliding glass doors shall meet the requirements of § 3280.403 the ''*Standard for Windows and Sliding Glass Doors Used in Manufactured Homes*''. (b) *Safety glazing.* Glazing in all entrance or exit doors, sliding glass doors, units (fixed or moving sections), unframed glass doors, unbacked mirrored wardrobe doors (*i.e.*, mirrors not secured to a backing capable of being the door itself), shower and bathtub enclosures and surrounds to a height of 6 feet above the bathroom floor level, storm doors or combination doors, and in panels located within 12 inches on either side of exit or entrance doors shall be of a safety glazing material. Safety glazing material is considered to be any glazing material capable of passing the requirements of *Safety Performance Specifications and Methods of Test for Safety Glazing Materials Used in Buildings*, ANSI Z97.1– 1984. **(c) Required glazed openings shall be permitted to face into a roofed porch where the porch abuts a street, yard, or court and the longer side of the**	§ 3280.113 Glass and glazed openings. (a) *Windows and sliding glass doors.* All windows and sliding glass doors shall meet the requirements of § 3280.403 the ''*Standard for Windows and Sliding Glass Doors Used in Manufactured Homes*''. (b) *Safety glazing.* Glazing in all entrance or exit doors, sliding glass doors, units (fixed or moving sections), unframed glass doors, unbacked mirrored wardrobe doors (*i.e.*, mirrors not secured to a backing capable of being the door itself), shower and bathtub enclosures and surrounds to a height of 6 feet above the bathroom floor level, storm doors or combination doors, and in panels located within 12 inches on either side of exit or entrance doors shall be of a safety glazing material. Safety glazing material is considered to be any glazing material capable of passing the requirements of *Safety Performance Specifications and Methods of Test for Safety Glazing Materials Used in Buildings*, ANSI Z97.1– 1984.

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
		porch is at least 65 percent open and unobstructed and the ceiling height is not less than 7 ft (2.1 m).	
-Editorial-	**4~~2~~.5.2.2** All exterior swinging doors shall provide a minimum 28 in. wide 74 in. high (710 mm 1880 mm) opening. All exterior sliding glass doors shall provide a minimum 28 in. wide 72 in. high (710 mm 1830 mm) opening. Door seals shall be permitted to reduce the opening, either vertically or horizontally, a maximum of 1 in. (25.4mm).	§3280.105(b)(2) (2) All exterior swinging doors shall provide a minimum 28 inch wide by 74 inch high clear opening. All exterior sliding glass doors shall provide a minimum 28 inch wide by 72 inch high clear opening. **Door seals shall be permitted to reduce the opening, either vertically or horizontally, a maximum of 1 in. (25.4mm).**	§3280.105(b)(2) (2) All exterior swinging doors shall provide a minimum 28 inch wide by 74 inch high clear opening. All exterior sliding glass doors shall provide a minimum 28 inch wide by 72 inch high clear opening.
10 ROC **(NEW)**	**4.8 Interior Passage Doors** **4.8.1*** All interior swinging doors shall have a minimum clear opening width of 27 in. (686 mm).	§3280.108 **Interior passage doors.** (a) Interior doors having passage hardware without a privacy lock, or with a privacy lock not engaged, shall open from either side by a single movement of the hardware mechanism in any direction. (b) Each manufactured home interior door, when provided with a privacy lock, shall have a privacy lock that has an emergency release on the outside to permit entry when the lock has been locked by a locking knob, lever, button, or other locking device on the inside. **(c) All interior swinging doors shall have a minimum clear opening width of 27 in. (686 mm).**	§3280.108 Interior passage. (a) Interior doors having passage hardware without a privacy lock, or with a privacy lock not engaged, shall open from either side by a single movement of the hardware mechanism in any direction. (b) Each manufactured home interior door, when provided with a privacy lock, shall have a privacy lock that has an emergency release on the outside to permit entry when the lock has been locked by a locking knob, lever, button, or other locking device on the inside.
10 ROC **(NEW)**	**4.11* Bathroom Passage Doors.** All single-section bathroom passage doors shall have a minimum clear opening width of 23 in. (584 mm), and multi-section bathroom passage doors shall have a minimum clear opening width of 27 in. (686 mm).	§3280.111 Toilet compartments. **(a)** Each toilet compartment shall be a minimum of 30 inches in width, except, when the toilet is located adjacent to the short dimension of the tub, the distance from the tub to the center line of the toilet shall not be less than 12 inches. At least 21 inches of clear space shall be provided in front of each toilet.	§3280.111 Toilet compartments. Each toilet compartment shall be a minimum of 30 inches in width, except, when the toilet is located adjacent to the short dimension of the tub, the distance from the tub to the center line of the toilet shall not be less than 12 inches. At least 21 inches of clear space shall be provided in front of

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
		(b) All single-section [bathroom passage doors] shall have a minimum clear opening width of 23 in. (584 mm), and multi-section bathroom passage doors shall have a minimum clear opening width of 27 in. (686 mm).	each toilet.
11 ROC	**4~~2~~.12 Hallways.** Hallways shall have a minimum horizontal dimension of 28 in. (710 mm) for single-section homes, and a minimum horizontal dimension of 36 in. (910mm) for multi-section homes, measured from the interior finished surface of one wall to the interior finished surface of the opposite wall. Where appliances are installed in a laundry area, the measurement shall be taken from the front of the appliance to the opposite finished interior surface. Where appliances are not installed and a laundry area is provided, the area shall have a minimum clear depth of 27 in. (690 mm) in addition to the 28 in. (710 mm) required for passage. In addition, a notice of the available clearance for washer/dryer units shall be posted in the laundry area. Minor protrusions into the minimum hallway width by doorknobs, trim, smoke detectors, or light fixtures shall be permitted.	3280.112 Hallways. **Hallways shall have a minimum horizontal dimension of 28 inches for single-section homes, and a minimum horizontal dimension of 36 in. (910mm) for multi-section homes, measured from the interior finished surface of one wall to the interior finished surface of the opposite wall.** Where appliances are installed in a laundry area, the measurement shall be taken from the front of the appliance to the opposite finished interior surface. Where appliances are not installed and a laundry area is provided, the area shall have a minimum clear depth of 27 inches in addition to the 28 inches required for passage. In addition, a notice of the available clearance for washer/dryer units shall be posted in the laundry area. Minor protrusions into the minimum hallway width by doorknobs, trim, smoke detectors, or light fixtures shall be permitted.	3280.112 Hallways. Hallways shall have a minimum horizontal dimension of 28 inches measured from the interior finished surface to the interior finished surface of the opposite wall. Where appliances are installed in a laundry area, the measurement shall be taken from the front of the appliance to the opposite finished interior surface. Where appliances are not installed and a laundry area is provided, the area shall have a minimum clear depth of 27 inches in addition to the 28 inches required for passage. In addition, a notice of the available clearance for washer/dryer units shall be posted in the laundry area. Minor protrusions into the minimum hallway width by doorknobs, trim, smoke detectors, or light fixtures shall be permitted.
25 ROP 26 ROP **(NEW)**	**4.14 Landings.** **4.14.1 General.** A minimum dimension of travel distance of a landing shall be 3 ft (914 mm). The minimum width of a landing shall not be less than the stairway or door that it serves. Landings shall be located as required by Section 4.14.	**§3280.114 (a) Landings.** **(1) General. A minimum dimension of travel distance of a landing shall be 3 ft (914 mm). The minimum width of a landing shall not be less than the stairway or door that it serves. Landings shall be located as required by Section §3280.114 (a).**	**(new material not currently addressed in 3280)**

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
	4.14.1.1 Landings for Stairways. There shall be a floor or landing at the top and bottom of each stairway. *Exception: At the top of an interior flight of basement stairs, provided a door does not swing over the stairs.* **4.14.1.2 Doors.** A landing or floor shall be located on each side of an interior doorway. The maximum threshold height above the floor or landing shall be ½ in. (13 mm) provided that thresholds more than ¼ in. (6 mm) above the adjacent floor shall be beveled with a slope not steeper than 1 in 2.	**(i) Landings for Stairways. There shall be a floor or landing at the top and bottom of each stairway, except at the top of an interior flight of basement stairs, provided a door does not swing over the stairs.** **(ii) Doors. A landing or floor shall be located on each side of an interior doorway. The maximum threshold height above the floor or landing shall be ½ in. (13 mm) provided that thresholds more than ¼ in. (6 mm) above the adjacent floor shall be beveled with a slope not steeper than 1 in 2.**	
29 ROP **(NEW)** 29 ROP **(NEW)** (cont.)	**4.15 Handrails.** **4.15.1 General.** A minimum of one handrail meeting the requirements of this section shall be installed on all stairways consisting of two or more risers. Single-riser stairs not at doors shall also have a minimum of one handrail located along the normal path of travel and complying with 4.15.3.2. Handrails shall be securely attached to structural framing members. A minimum space of 1½ in. (38-mm) shall be provided between the adjoining wall surface and the handrail. **4.15.2 Handrail Height.** Handrails shall be installed between 34 in. (864 mm) and 38 in. (965 mm) measured vertically from the leading edge of the stairway treads except that handrails installed up to 42 in. (1067 mm) high shall be permitted if serving as the upper rails of guards required by Section 4.16. **4.15.3 Continuity.** **4.15.3.1** Required handrails shall be continuous from a	**§3280.114 (b) Handrails.** **(1) General. A minimum of one handrail meeting the requirements of this section shall be installed on all stairways consisting of two or more risers. Single-riser stairs not at doors shall also have a minimum of one handrail located along the normal path of travel and complying with §3280.114(b)(3)(ii). Handrails shall be securely attached to structural framing members. A minimum space of 1½ in. (38-mm) shall be provided between the adjoining wall surface and the handrail.** **(2) Handrail Height. Handrails shall be installed between 34 in. (864 mm) and 38 in. (965 mm) measured vertically from the leading edge of the stairway treads except that handrails installed up to 42 in. (1067 mm) high shall be permitted if serving as the upper rails of guards required by §3280.114(c).** **(3) Continuity.** **(i) Required handrails shall be continuous**	**(new material not currently addressed in 3280)**

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
29 ROP **(NEW)** (cont.)	point directly above the leading edge of the lowest stair tread to a point directly above the leading edge of the landing or floor surface at the top of the stairway. If the handrail is extended at the top of the stairway flight, the extension shall parallel the floor or landing surface and shall be at the same height as the handrail is above the leading edges of the treads. If the handrail is extended at the base of the stair, it shall continue to slope parallel to the stair flight for a distance of one tread depth, measured horizontally, before being terminated or returned or extended horizontally. The ends of handrails shall return into a wall, or terminate in a safety terminal or newel post. **4.15.3.2 Continuity of Required Handrails Serving Single-Riser Stairs.** Handrails serving single-riser stairs shall, at a minimum, extend from a point between 34 in. (864 mm) and 38 in. (965 mm) above the finished floor or landing and a minimum of 11 in. (279 mm), measured horizontally, beyond the face of the riser, to a point between 34 in. (864 mm) and 38 in. (965 mm) above the finished floor or landing and directly above the riser. The ends of handrails shall return into a wall and terminate in a safety terminal or newel post. Acceptable equivalent measures shall include other rails or features providing similar visual cueing for the step and graspability as required by 4.15.4. **4.15.4 Graspability.** Required handrails shall, if circular in cross section, have a minimum 1¼ in. (32 mm) and a maximum 2 in. (51 mm) diameter dimension. Handrails with a noncircular cross section shall have a perimeter dimension of at least 4 in. (102 mm) and not more than 6¼ in. (159 mm) with a maximum cross-section dimension of not more than 2¼ in. (57 mm). A handrail shape that provides	**from a point directly above the leading edge of the lowest stair tread to a point directly above the leading edge of the landing or floor surface at the top of the stairway. If the handrail is extended at the top of the stairway flight, the extension shall parallel the floor or landing surface and shall be at the same height as the handrail is above the leading edges of the treads. If the handrail is extended at the base of the stair, it shall continue to slope parallel to the stair flight for a distance of one tread depth, measured horizontally, before being terminated or returned or extended horizontally. The ends of handrails shall return into a wall, or terminate in a safety terminal or newel post.** **(ii) Continuity of Required Handrails Serving Single-Riser Stairs. Handrails serving single-riser stairs shall, at a minimum, extend from a point between 34 in. (864 mm) and 38 in. (965 mm) above the finished floor or landing and a minimum of 11 in. (279 mm), measured horizontally, beyond the face of the riser, to a point between 34 in. (864 mm) and 38 in. (965 mm) above the finished floor or landing and directly above the riser. The ends of handrails shall return into a wall and terminate in a safety terminal or newel post. Acceptable equivalent measures shall include other rails or features providing similar visual cueing for the step and graspability as required by §3280.114(b)(4).** **(4) Graspability. Required handrails shall, if circular in cross section, have a minimum 1¼ in. (32 mm) and a maximum 2 in. (51 mm) diameter dimension. Handrails with a noncircular cross section shall have a perimeter dimension of at least 4 in. (102 mm) and not more than 6¼ in. (159 mm) with a maximum cross-section dimension of not more than 2¼ in. (57 mm). A**	

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
	equivalent graspability shall be accepted. The handgrip portion of the handrail shall have a smooth surface. Edges shall have a minimum in. (3.2 mm) radius. Handrails shall be continuously graspable along their entire length except that brackets or balusters are not considered obstructions to graspability if they do not project horizontally beyond the sides of the handrail within 1½ in. (38 mm) of the bottom of the handrail.	**handrail shape that provides equivalent graspability shall be accepted. The handgrip portion of the handrail shall have a smooth surface. Edges shall have a minimum in. (3.2 mm) radius. Handrails shall be continuously graspable along their entire length except that brackets or balusters are not considered obstructions to graspability if they do not project horizontally beyond the sides of the handrail within 1½ in. (38 mm) of the bottom of the handrail.**	
8 ROP **(NEW)** 8 ROP **(NEW)** (cont.)	**4.15.5** Handrails shall be designed to resist a load of 20 lb/ft (0.29 kN/m) applied in any direction at the top and to transfer this load through the supports to the structure. All handrails shall be able to resist a single concentrated load of 200 lb (0.89 kN), applied in any direction at any point along the top, and have attachment devices and supporting structures to transfer this loading to appropriate structural elements of the building. This load shall not be required to be assumed to act concurrently with the loads specified in this section.	**§3280.114(b)(5)** **(5) Handrails shall be designed to resist a load of 20 lb/ft (0.29 kN/m) applied in any direction at the top and to transfer this load through the supports to the structure. All handrails shall be able to resist a single concentrated load of 200 lb (0.89 kN), applied in any direction at any point along the top, and have attachment devices and supporting structures to transfer this loading to appropriate structural elements of the building. This load shall not be required to be assumed to act concurrently with the loads specified in this section.**	
33 ROP **(NEW)**	**4.16 Guards.** **4.16.1** Porches, balconies, or raised floor surfaces located more than 30 in. (762 mm) above the floor or grade below shall have guards not less than 36 in. (0.9 m) in height. Open sides of stairs with a total rise of more than 30 in. (762 mm) above the floor or grade below shall have guards not less than 34 in. (803 mm)	**§3280.114(c) Guards.** **(1) Porches, balconies, or raised floor surfaces located more than 30 in. (762 mm) above the floor or grade below shall have guards not less than 36 in. (0.9 m) in height. Open sides of stairs with a total rise of more than 30 in. (762 mm) above the floor or grade below shall have guards not less**	**(new material not currently addressed in 3280)**

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
	in height measured vertically from the nosing of the treads. Balconies and porches on the second floor or higher shall have guards a minimum of 42 in. (1.1 m) in height. **4.16.2 Guard Opening Limitations.** Required guards on open sides of stairways, raised floor areas, balconies, and porches shall have intermediate rails or ornamental closures that do not allow passage of a sphere 4 in. (100 mm) in diameter. Required guards shall not be constructed with horizontal rails or other ornamental pattern that results in a ladder effect. **4.16.2.1** The triangular openings formed by the riser, tread and bottom rail of a guard at the open side of the stairway shall be permitted to be of such a size that a sphere 6 in. (152 mm) cannot pass through.	**than 34 in. (803 mm) in height measured vertically from the nosing of the treads. Balconies and porches on the second floor or higher shall have guards a minimum of 42 in. (1.1 m) in height.** **(2) Guard Opening Limitations. Required guards on open sides of stairways, raised floor areas, balconies, and porches shall have intermediate rails or ornamental closures that do not allow passage of a sphere 4 in. (100 mm) in diameter. Required guards shall not be constructed with horizontal rails or other ornamental pattern that results in a ladder effect.** **(i) The triangular openings formed by the riser, tread and bottom rail of a guard at the open side of the stairway shall be permitted to be of such a size that a sphere 6 in. (152 mm) cannot pass through.**	
8 ROP **(NEW)**	**4.16.2.2** Guard systems shall be designed to resist a load of 20 lb/ft (0.29 kN/m) applied in any direction at the top and to transfer this load through the supports to the structure. All guard systems shall be able to resist a single concentrated load of 200 lb (0.89 kN), applied in any direction at any point along the top and have attachment devices and supporting structures to transfer this loading to appropriate structural elements of the building. This load shall not be required to be assumed to act concurrently with the loads specified in this section.	**§3280.114(c)(2)(ii)** **(ii) Guard systems shall be designed to resist a load of 20 lb/ft (0.29 kN/m) applied in any direction at the top and to transfer this load through the supports to the structure. All guard systems shall be able to resist a single concentrated load of 200 lb (0.89 kN), applied in any direction at any point along the top and have attachment devices and supporting structures to transfer this loading to appropriate structural elements of the building. This load shall not be required to be assumed to act concurrently with the loads specified in this section.**	
23 ROP	**4.17 Stairway Illumination.** All interior and exterior	**§3280.114(d)**	**(new material not currently addressed in 3280)**

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
(NEW) 23 ROP **(NEW)** (cont.)	stairways shall be provided with a means to illuminate the stair, including the landings and treads. Interior stairs shall be provided with an artificial light source located in the immediate vicinity of each landing at the top and bottom of the stair. For interior stairs the artificial light sources shall be capable of illuminating treads and landings to levels not be less than 10 foot-candles (108 lx) measured at the center of treads and landings. Exterior stairs shall be provided with an artificial light source located in the immediate vicinity of the top landing of the stair. *Exception No. 1: An artificial light source is not required at the top and bottom landing, provided an artificial light source is located directly over each stair section.* *Exception No. 2: Illumination measurements are not required where the installed artificial light sources are designed for a minimum of two incandescent lamps with a total rating, per light fixture, of at least 120 watts and not less than two such light fixtures are provided for each story-height portion of a stairway.* *Exception No. 3: Illumination measurements are not required where the installed artificial light sources are designed for fluorescent or other lamp types capable of providing a minimum light output equivalent to that from 240 watts of incandescent lamps for each story-height portion of a stairway.*	**(d) Stairway Illumination. All interior and exterior stairways shall be provided with a means to illuminate the stair, including the landings and treads. Interior stairs shall be provided with an artificial light source located in the immediate vicinity of each landing at the top and bottom of the stair. For interior stairs the artificial light sources shall be capable of illuminating treads and landings to levels not be less than 10 foot-candles (108 lx) measured at the center of treads and landings. Exterior stairs shall be provided with an artificial light source located in the immediate vicinity of the top landing of the stair.** **Exception No. 1: An artificial light source is not required at the top and bottom landing, provided an artificial light source is located directly over each stair section.** **Exception No. 2: Illumination measurements are not required where the installed artificial light sources are designed for a minimum of two incandescent lamps with a total rating, per light fixture, of at least 120 watts and not less than two such light fixtures are provided for each story-height portion of a stairway.** **Exception No. 3: Illumination measurements are not required where the installed artificial light sources are designed for fluorescent or other lamp types capable of providing a minimum light output equivalent to that from 240 watts of incandescent lamps for each story-height portion of a stairway.**	

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
35 ROP	**5~~3~~.4.4** The metal hood required by 5~~3~~.4.2 shall not be required where an oven of equivalent metal protection or a microwave cooking appliance meeting the requirements of UL Standard 923, Microwave Cooking Appliances, is installed between the cabinet and the range, and all exposed cabinet surfaces are protected as described in 5~~3~~.4.1.	§3280.204(c) (c) **The metal hood required by paragraphs (a) and (b) of this section can be omitted when an oven of equivalent metal protection or a microwave cooking appliance meeting the requirements of UL Standard 923, *Microwave Cooking Appliances*, 2002 edition, is installed between the cabinet and the range and all exposed cabinet surfaces are protected as described in paragraph (a) of this section.**	§3280.204(c) (c) The metal hood required by paragraphs (a) and (b) of this section can be omitted when an oven of equivalent metal protection is installed between the cabinet and the range and all exposed cabinet surfaces are protected as described in paragraph (a) of this section.
20 ROC **(NEW)**	**5.6.4 Draftstopping.** **5.6.4.1** When there is usable space both above and below the concealed space of a floor/ceiling assembly, draftstops shall be installed so that the area of the concealed space does not exceed 1000 ft2 (93 m2). **5.6.4.2** Draftstopping shall divide the concealed space into approximately equal areas. **5.6.4.3** Where the assembly is enclosed by a floor membrane above and a ceiling membrane below, draftstopping shall be provided in the floor/ceiling assemblies: **(1)** When the ceiling is suspended under the floor framing **(2)** When the floor framing is constructed of truss type open-web or perforated members **5.6.4.4** Draftstopping materials shall not be less than	**§3280.210 Draftstopping.** **(a) When there is usable space both above and below the concealed space of a floor/ceiling assembly, draftstops shall be installed so that the area of the concealed space does not exceed 1000 ft2 (93 m2).** **(b) Draftstopping shall 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 shall be provided in the floor/ceiling assemblies:** **(1) When the ceiling is suspended under the floor framing** **(2) When the floor framing is constructed of truss type open-web or perforated members**	**(new material not currently addressed in 3280)**

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
	in. (10 mm) gypsum board, in. (10 mm) wood structural panels, in. (10 mm) type 2-M-W particleboard, or other approved materials adequately supported. **5.6.4.5** Draftstopping shall be installed parallel to the floor framing members. **5.6.4.6** The integrity of all draftstops shall be maintained.	**(d) Draftstopping materials shall not be less than in. (10 mm) gypsum board, in. (10 mm) wood structural panels, in. (10 mm) type 2-M-W particleboard, or other approved materials adequately supported.** **(e) Draftstopping shall be installed parallel to the floor framing members.** **(f) The integrity of all draftstops shall be maintained.**	
39 ROP **(NEW)**	**5.11 Attached Garages.** **5.11.1** When a manufactured home is constructed for the attachment of a site built garage, provision will be made to provide fire separation between the garage and the manufactured home. **5.11.1.1** As a minimum the garage shall be separated from the dwelling unit and its attic by not less than ½ in. (13 mm) gypsum board applied to the garage side and the separation shall be continuous from the bottom of the floor to the underside of the roof deck. The design approval and the manufacturer's installation instructions shall include provision for equivalent vertical separation between the garage and the space below the manufactured home floor system. **5.11.2** Openings between the garage directly into a room designated for sleeping purposes shall not be permitted. Other openings between the garage and the manufactured home shall be equipped with solid wood	**§3280.211 Attached garages.** **(a) When a manufactured home is constructed for the attachment of a site built garage, provision will be made to provide fire separation between the garage and the manufactured home.** **(1) As a minimum the garage shall be separated from the dwelling unit and its attic by not less than ½ in. (13 mm) gypsum board applied to the garage side and the separation shall be continuous from the bottom of the floor to the underside of the roof deck. The design approval and the manufacturer's installation instructions shall include provision for equivalent vertical separation between the garage and the space below the manufactured home floor system.** **(b) Openings between the garage directly into a room designated for sleeping purposes shall not be permitted. Other openings between the garage and the manufactured home shall be equipped**	**(new material not currently addressed in 3280)**

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
	doors not less than 1 in. (35 mm) in thickness, solid or honeycomb steel doors not less than 1 in. (35 mm) in thickness, or 20-minute fire-rated doors, and all doors shall be self-closing. **5.11.3** Ducts penetrating the walls or ceilings separating the manufactured home from the garage shall be constructed of a minimum No. 26 gauge steel or other approved material and shall have no openings in the garage.	**with solid wood doors not less than 1 in. (35 mm) in thickness, solid or honeycomb steel doors not less than 1 in. (35 mm) in thickness, or 20-minute fire-rated doors, and all doors shall be self-closing.** **(c) Ducts penetrating the walls or ceilings separating the manufactured home from the garage shall be constructed of a minimum No. 26 gauge steel or other approved material and shall have no openings in the garage.**	
21 ROC	**Table 46.4 Materials and Methods for Construction** **Steel** ~~*Specification for Aluminum Structures Construction Manual Series*, Section 1, Fifth Edition~~ ~~AA-30 — 1986~~ *Specification for Structural Steel Buildings — Allowable Stress Design and Plastic Design* (The following parts of this reference standard shall not be applicable: 1.3.3, 1.3.4, 1.3.5, 1.3.6, 1.4.6, 1.5.1.5, 1.5.5, 1.6, 1.7, 1.8, 1.9, 1.10.4 through 1.10.7, 1.10.9, 1.11, 1.13, 1.14.5, 1.17.7 through 1.17.9, 1.19.1, 1.19.3, 1.20, 1.21, 1.23.7, 1.24, 1.25.1 through 1.25.5, 1.26.4, 2.3, 2.4, 2.8 through 2.10.) AISC-ASD~~S335 — June 1~~, 1989	**§3280.304 Materials.** **Steel** ~~Specification for Aluminum Structures Construction Manual Series — Section 1, Fifth Edition — 1986, The Aluminum Association.~~ Specification for Structural Steel Buildings—Allowable Stress Design and Plastic Design—**AISC-ASD—1989.** The following parts of this reference standard are not applicable: 1.3.3, 1.3.4, 1.3.5, 1.3.6, 1.4.6, 1.5.1.5, 1.5.5, 1.6, 1.7, 1.8, 1.9, 1.10.4 through 1.10.7, 1.10.9, 1.11, 1.13, 1.14.5, 1.17.7 through 1.17.9, 1.19.1, 1.19.3, 1.20, 1.21, 1.23.7, 1.24, 1.25.1 through 1.25.5, 1.26.4, 2.3, 2.4, 2.8 through 2.10.	**§3280.304 Materials.** **Steel** Specification for Aluminum Structures Construction Manual Series— Section 1, Fifth Edition—1986, The Aluminum Association. Specification for Structural Steel Buildings—Allowable Stress Design and Plastic Design—AISC—June 1, 1989. The following parts of this reference standard are not applicable: 1.3.3, 1.3.4, 1.3.5, 1.3.6, 1.4.6, 1.5.1.5, 1.5.5, 1.6, 1.7, 1.8, 1.9, 1.10.4 through 1.10.7, 1.10.9, 1.11, 1.13, 1.14.5, 1.17.7 through 1.17.9, 1.19.1, 1.19.3, 1.20, 1.21, 1.23.7, 1.24, 1.25.1 through 1.25.5, 1.26.4, 2.3, 2.4, 2.8 through 2.10.

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
21 ROC (cont.)	~~*Specification for the Design of Cold-Formed Steel Structural Members*~~ *Cold-formed Steel Design Manual* AISI-SG-673 — 1986 edition with 1989 addendum (The following parts of this reference standard shall not be applicable: 3.1.2, 4.2.1, 4.2.4.)	**Cold-formed Steel Design Manual**— AISI-SG-673 — 1986 Edition With 1989 Addendum. The following parts of this reference standard are not applicable: 3.1.2, 4.2.1, 4.2.4.	Specification for the Design of Cold- Formed Steel Structural Members— AISI—1986 Edition With 1989 Addendum. The following parts of this reference standard are not applicable: 3.1.2, 4.2.1, 4.2.4.

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)		24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
	~~*Cold-Formed Stainless Steel Structural Design Members* (The following part of this reference standard shall not be applicable: 3.1.2.)~~	~~ASCE-8 — 1991~~	~~Stainless Steel Cold-Formed Structural Design Manual—AISI–1974. The following part of this reference standard is not applicable: 3.1.2.~~	Stainless Steel Cold-Formed Structural Design Manual—AISI–1974. The following part of this reference standard is not applicable: 3.1.2.
	~~*Standard Specifications for Load Tables and Weight Tables for Steel Joists and Joist Girders.* (Only Sections 1-6 and the table for "H series only" shall be applicable.)~~	~~SJI — 40th ed.~~	~~Standard Specifications Load Tables and Weight Tables for Steel Joists and Joist Girders, only Sections 1–6 and the table for ''H series only'' are applicable —Steel Joist Institute 1992.~~	Standard Specifications Load Tables and Weight Tables for Steel Joists and Joist Girders, only Sections 1–6 and the table for ''H series only'' are applicable —Steel Joist Institute 1992.
	~~*Manual for Structural Applications of Steel Cables for Buildings*~~	~~ASCE-19 — 1996~~	~~Manual for Structural Applications of Steel Cables for Buildings—AISI 1973.~~	Manual for Structural Applications of Steel Cables for Buildings—AISI 1973.
	Standard Specification for Strapping, Flat Steel and Seals	ASTM D 3953-97~~1~~	Standard Specification for Strapping, Flat Steel and Seals—ASTM D3953–**97.**	Standard Specification for Strapping, Flat Steel and Seals—ASTM D3953–91.
	Wood and Wood Products		**Wood and Wood Products**	**Wood and Wood Products**
	Basic Hardboard	ANSI/AHA A 135.4-1995	Basic Hardboard—ANSI/AHA A135.4– **1995.**	Basic Hardboard—ANSI/AHA A135.4– 1982.
	Prefinished Hardboard Paneling	ANSI/AHA A 135.5-1995	Prefinished Hardboard Paneling— ANSI/AHA A135.5–**1995.**	Prefinished Hardboard Paneling— ANSI/AHA A135.5–1988.
	Hardboard Siding	ANSI/AHA A 135.6-1998	Hardboard Siding—ANSI/AHA A135.6– **1998.**	Hardboard Siding—ANSI/AHA A135.6– 1990.
	Hardwood and Decorative Plywood	ANSI/HPVA HP-1-2000~~1994~~	**Hardwood and Decorative Plywood—ANSI/HPVA HP–1–2000.**	Interim Voluntary Standard for Hardwood and Decorative Plywood— HPVA Interim Standard HP–1–1993.

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)		24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
	Structural Design Guide for Hardwood Plywood ~~Wall Panels~~	HPVA ~~Design Guide~~ HP-SG-96	**Structural Design Guide for Hardwood Plywood —HPVA HP–SG–96.**	Structural Design Guide for Hardwood Plywood Wall Panels—HPMA Design Guide HP–SG–86.
	~~*For wood products — Structural Glued Laminated Timber*~~	~~AITC A 190.1-1992~~	~~For wood products—Structural Glued Laminated Timber—ANSI/AITC A190.1– 1992.~~	For wood products—Structural Glued Laminated Timber—ANSI/AITC A190.1– 1992.
	~~*Voluntary Product Standard,*~~ *Construction and Industrial Plywood*	USDOC~~APA~~ PS-1-95	**Construction and Industrial Plywood—USDOC/PS– 1–95.**	Voluntary Product Standard, Construction and Industrial Plywood—PS– 1–83.
	Plywood Design Specification	APA-Y 510T~~S~~-1999~~1997~~	Plywood Design Specification—APA– Y 510**T**–**1999.**	Plywood Design Specification—APA– Y 510Q–1993.
	Design and Fabrication of Glued Plywood-Lumber Beams, Supp. 2	APA-S 812RQ-1998~~1996~~	Design and Fabrication of Glued Plywood- Lumber Beams, Suppl. 2—APA–S 812**R**–**1998.**	Design and Fabrication of Glued Plywood-Lumber Beams, Suppl. 2—APA–S 812P–1992.
	~~*Design and Fabrication of Plywood Curved Panels,* Supp. 1~~	~~APA-S 811N-1995~~	~~Design and Fabrication of Plywood Curved Panels, Suppl. 1—APA–S 811M– 1990.~~	Design and Fabrication of Plywood Curved Panels, Suppl. 1—APA–S 811M– 1990.
	Performance Standards and Policies for Structural Use Panels	APA-PRP-E-108Q-94~~95~~	Performance Standards and Policies for Structural Use Panels—APA–PRP– E–108**Q-94.**	Performance Standards and Policies for Structural Use Panels—APA–PRP– E–108P, E445N–1989.
	Allowable Stress Design (ASD) Manual for Engineered Wood Construction including National Design Specifications for Wood Construction ~~1991 edition, with supplement,~~ and Design Values for Wood Construction	AFPA T101-97	**Allowable Stress Design (ASD) Manual for Engineered Wood Construction including** National Design Specifications for Wood Construction, **and** Design Values for Wood Construction, AFPA—**AFPA T101-97.**	National Design Specifications for Wood Construction, 1991 Edition, With Supplement, Design Values for Wood Construction, AFPA.
	~~*Span Tables for Joists and Rafters*~~ *American Softwood Lumber Standard*	~~AFPA~~USDOC PS-20-99~~70, 1993~~	**American Softwood Lumber Standard—USDOC/PS–20–99.**	Span Tables for Joists and Rafters— PS–20–70, 1993, AFPA.

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)		24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
	~~Design Values~~ Span Tables for Joists and Rafters~~, American Softwood Lumber Standard Sizes~~	AFPA T034~~-~~93	**Span Tables for Joists and Rafters— AFPA T03-93**	Design Values for Joists and Rafters, American Softwood Lumber Standard Sizes, 1992, AFPA.
	Mat-~~F~~formed Wood Particleboard	ANSI A 208.1-1999	**Mat-formed** Wood Particleboard— ANSI A 208.1-**1999**	Wood Particleboard—ANSI A208.1– 1989.
	~~*Standard Test Methods for Puncture and Stiffness of Paperboard, and Corrugated and Solid Fiberboard*~~	~~ASTM D 781-68(73)~~	~~Standard Test Methods for Puncture and Stiffness of Paperboard, and Corrugated and Solid Fiberboard— ASTM D781–68 (73).~~	Standard Test Methods for Puncture and Stiffness of Paperboard, and Corrugated and Solid Fiberboard— ASTM D781–68 (73).
	Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials	ASTM D 4442-92(1997)	Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials— ASTM D4442-**92(1997).**	Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials—ASTM D4442.

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)		24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
	Standard Test Methods for Use and Calibration of Hand-Held Moisture Meters	ASTM D 4444-92(1998)	Standard Test Methods for Use and Calibration of Hand-Held Moisture Meters—ASTM D4444–92**(1998).**	Standard Test Methods for Use and Calibration of Hand-Held Moisture Meters—ASTM D4444–92.
	Other		**Other**	**Other**
	Standard Specification for Gypsum Wallboard	ASTM C 36-01~~B95~~	Standard Specification for Gypsum Wallboard—ASTM C36–**01.**	Standard Specification for Gypsum Wallboard—ASTM C36–93.
	Residential Asphalt Roofing Manual	ARMA 1997	**Residential Asphalt Roofing Manual, ARMA, 1997.**	ARMA 1997
	Fasteners		**Fasteners**	**Fasteners**
	~~*Application and Fastening Schedule: Power-Driven, Mechanically Driven and Manually Driven Fasteners-HUD-FHA Use of Materials Bulletin*~~	~~UM 25d-73~~	~~Application and Fastening Schedule: Power-Driven, Mechanically Driven and Manually Driven Fasteners—HUD–FHA Use of Materials Bulletin—UM–25d–73.~~	Application and Fastening Schedule: Power-Driven, Mechanically Driven and Manually Driven Fasteners—HUD– FHA Use of Materials Bulletin—UM–25d–73.
	Power-Driven Staples and Nails for Use in All Types of Building Construction	NER-272 – 97	**Power-Driven Staples and Nails for Use in All Types of Building Construction, NER-272 – 97**	**(new material not currently addressed in 3280)**
	Unclassified		**Unclassified**	**Unclassified**
	Performance Standard for Wood-Based ~~Structural Use~~ Structural-use Panels	~~APA~~USDOC PS-2-92~~96~~	Performance Standard for Wood-Based **Structural-use** Panels, **USDOC** PS-2-92.	Performance Standard for Wood-Based Structural Use Panels—PS–2–92, APA (also known as NIST Standard PS–2–92).
40 ROP	**46.5.1 General.** Each manufactured home shall be		§ 3280.305 Structural design requirements.	§ 3280.305 Structural design requirements.

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
	designed and constructed as a completely integrated structure capable of sustaining the design load requirements of this standard, and shall be capable of transmitting these loads to stabilizing devices without exceeding the allowable stresses or deflections. Roof framing shall be securely fastened to wall framing, walls to floor structure, and floor structure to chassis to secure and maintain continuity between the floor and chassis, so as to resist wind overturning, uplift, and sliding~~,~~ as imposed by design loads in this area. In multistory construction, each story shall be securely fastened to the story above and/or below to provide continuity and resist design loads in this part. Uncompressed finished flooring greater than 1/8 in. (3 mm) in thickness shall not extend beneath load-bearing walls that are fastened to the floor structure.	(a) *General*. Each manufactured home shall be designed and constructed as a completely integrated structure capable of sustaining the design load requirements of this standard, and shall be capable of transmitting these loads to stabilizing devices without exceeding the allowable stresses or deflections. Roof framing shall be securely fastened to wall framing, walls to floor structure, and floor structure to chassis to secure and maintain continuity between the floor and chassis, so as to resist wind overturning, uplift, and sliding as imposed by design loads in this part. **In multistory construction, each story shall be securely fastened to the story above and/or below to provide continuity and resist design loads in this part.** Uncompressed finished flooring greater than 1/8 inch in thickness shall not extend beneath load-bearing walls that are fastened to the floor structure.	(a) *General*. Each manufactured home shall be designed and constructed as a completely integrated structure capable of sustaining the design load requirements of this standard, and shall be capable of transmitting these loads to stabilizing devices without exceeding the allowable stresses or deflections. Roof framing shall be securely fastened to wall framing, walls to floor structure, and floor structure to chassis to secure and maintain continuity between the floor and chassis, so as to resist wind overturning, uplift, and sliding as imposed by design loads in this part. Uncompressed finished flooring greater than 1/8 inch in thickness shall not extend beneath load-bearing walls that are fastened to the floor structure.
40 ROP	**~~4~~6.5.5 Fastening of Structural Systems.** **~~4~~6.5.5.1** Roof framing shall be securely fastened to wall framing, walls to floor structure, and floor structure to chassis to secure and maintain continuity between the floor and chassis in order to resist wind overturning, uplift, and sliding as specified in this section. ~~and to provide continuous load paths for these forces to the foundation or anchorage system.~~ In multistory construction, each story shall be securely fastened to the story above and/or below to provide continuity and resist design loads in this section. The number and type of fasteners used shall be capable of transferring all forces between elements being joined.	§3280.305(e) (e) *Fastening of structural systems.* (1) Roof framing shall be securely fastened to wall framing, walls to floor structure, and floor structure to chassis to secure and maintain continuity between the floor and chassis, so as to resist wind overturning, uplift, and sliding as specified in this part. **In multistory construction, each story shall be securely fastened to the story above and/or below to provide continuity and resist design loads in this section.**	§3280.305(e) (e) *Fastening of structural systems.* (1) Roof framing shall be securely fastened to wall framing, walls to floor structure, and floor structure to chassis to secure and maintain continuity between the floor and chassis, so as to resist wind overturning, uplift, and sliding as specified in this part.

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
42 ROP **(NEW)**	**6.5.7.6.2** The bottom board material shall be tight fitted against all penetrations.	§3280.305(g)(5) (5) Bottom board material (with or without patches) shall meet or exceed the level of 48 inch-pounds of puncture resistance as tested by the Beach Puncture Test in accordance with Standard Test Methods for Puncture and Stiffness of Paperboard, and Corrugated and Solid Fiberboard, ASTM D–781–1968 (73). The material shall be suitable for patches and the patch life shall be equivalent to the material life. Patch installation instruction shall be included in the manufactured home manufacturer's instructions. **(i) The bottom board material shall be tight fitted against all penetrations.**	§3280.305(g)(5) (5) Bottom board material (with or without patches) shall meet or exceed the level of 48 inch-pounds of puncture resistance as tested by the Beach Puncture Test in accordance with Standard Test Methods for Puncture and Stiffness of Paperboard, and Corrugated and Solid Fiberboard, ASTM D–781–1968 (73). The material shall be suitable for patches and the patch life shall be equivalent to the material life. Patch installation instruction shall be included in the manufactured home manufacturer's instructions.
23 ROC **(NEW)** 23 ROC	**6.5.8.5** Portions of roof assemblies, including, but not limited to, dormers, gables, crickets, hinged roof sections, connections between sections, sheathing, roof coverings, underlayments, flashings, and eaves and overhangs shall be permitted to be assembled and installed on site provided that the requirements in 6.5.8.5.1 through 6.5.8.5.5 are met. **6.5.8.5.1** Approved installation instructions shall be provided that include requirements for the following items: **(1)** Materials, installation, and structural connections complying with Section 6.5 **(2)** Installation and fastening of sheathing and roof coverings **(3)** Installation of appliance vent systems per Section 10.9 **(4)** Installation of plumbing vents as required by Section 10.9 **(5)** Installation of attic ventilation per 8.4.4 **6.5.8.5.2** The installation instructions specified in 6.5.8.5.1 shall include drawings, details, and instructions as necessary to assure that the on-site work	**§3280.305(h)** **(5) Portions of roof assemblies, including, but not limited to, dormers, gables, crickets, hinged roof sections, connections between sections, sheathing, roof coverings, underlayments, flashings, and eaves and overhangs shall be permitted to be assembled and installed on site provided that the requirements in §3280.305(h)(5)(i) through §3280.305(h)(5)(v) are met.** **(i) Approved installation instructions shall be provided that include requirements for the following items:** **(A) Materials, installation, and structural connections complying with §3280.305** **(B) Installation and fastening of sheathing and roof coverings** **(C) Installation of appliance vent systems per §3280.710** **(D) Installation of plumbing vents as required by §3280.710** **(E) Installation of attic ventilation per §3280.504(c)**	**(new material not currently addressed in 3280)**

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
(NEW) (cont.)	complies with the approved design. **6.5.8.5.3** The installation instructions specified in 6.5.8.5.1 shall provide for on-site inspection of the work in stages that shall assure inspection before any work is concealed. **6.5.8.5.4** Listed trusses shall be provided as required by the approved design and installation instructions. **6.5.8.5.5** Temporary weather protection shall be provided per 6.7.5.	**(ii) The installation instructions specified in §3280.305(h)(5)(i) shall include drawings, details, and instructions as necessary to assure that the on-site work complies with the approved design.** **(iii) The installation instructions specified in §3280.305(h)(5)(i) shall provide for on-site inspection of the work in stages that shall assure inspection before any work is concealed.** **(iv) Listed trusses shall be provided as required by the approved design and installation instructions.** **(v) Temporary weather protection shall be provided per §3280.307(e).**	
25 ROC **(NEW)**	**6.7.5** Multi-section and single-family attached dwelling units shall not be required to comply with the factory installation of weather-resistant exterior finishes for those areas left open for field connection of the sections provided the following conditions are satisfied: **(1)** Temporary weather protection for exposed, unprotected construction is provided in accordance with methods to be included in the approved design. **(2)** Methods for on-site completion and finishing of these elements are included in the approved design. **(3)** Complete installation instructions for finishing these elements are provided.	**§3280.307(e)** **(e) Multi-section and single-family attached dwelling units shall not be required to comply with the factory installation of weather-resistant exterior finishes for those areas left open for field connection of the sections provided the following conditions are satisfied:** **(1) Temporary weather protection for exposed, unprotected construction is provided in accordance with methods to be included in the approved design.** **(2) Methods for on-site completion and finishing of these elements are included in the approved design.** **(3) Complete installation instructions for finishing these elements are provided.**	**(new material not currently addressed in 3280)**
49 ROP	**~~6~~8.2.2 ~~Thermal Envelope Area.~~** The thermal envelope shall be determined from ~~T~~the sum of the surface areas of outside walls, ceiling, and floor, including all	§ 3280.502(a)(2) (2) **The thermal envelope area shall be determined from** the sum of the surface areas of	§ 3280.502(a)(2) (2) *Thermal envelope area* means the sum of the surface areas of outside walls, ceiling and floor,

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
	openings. **8.2.2.1** The wall area ~~is~~ of a single-family dwelling unit shall be measured by multiplying outside wall lengths by the inside wall height from floor to ceiling. **8.2.2.2** The wall area of multi-story dwelling units shall be measured by multiplying outside wall lengths by the inside wall height from the floor of the lowest story to the ceiling of the highest story within each dwelling unit. **8.2.2.3** The floor and ceiling areas ~~are~~ shall be considered as horizontal surfaces~~,~~ using exterior width and length.	outside walls, ceiling and floor, including all openings. **(i) The wall area of a single-family dwelling unit shall be measured by multiplying outside wall lengths by the inside wall height from floor to ceiling.** **(ii) The wall area of multi-story dwelling units shall be measured by multiplying outside wall lengths by the inside wall height from the floor of the lowest story to the ceiling of the highest story within each dwelling unit.** **(iii)The floor and ceiling areas shall be considered as horizontal surfaces using exterior width and length.**	including all openings. The wall area is measured by multiplying outside wall lengths by the inside wall height from floor to ceiling. The floor and ceiling areas are considered as horizontal surfaces using exterior width and length.
51 ROP (NEW)	**8.4.1.3** In multi-story dwelling units, the ceiling vapor retarder shall be permitted to be omitted when the story directly above is part of the same dwelling unit.	§ 3280.504 Condensation control andinstallation of vapor retarders. (a) *Ceiling vapor retarders.* (1) In Uo Value Zones 2 and 3, ceilings shall have a vapor retarder with a permanence of not greater than 1 perm (as measured by ASTM E–96–93 *Standard Test Methods for Water Vapor Transmission of Materials*) installed on the living space side of the roof cavity. (2) For manufactured homes designed for Uo Value Zone 1, the vapor retarder may be omitted. **(3) In multi-story dwelling units, the ceiling vapor retarder shall be permitted to be omitted when the story directly above is part of the same dwelling unit.**	**(new material not currently addressed in 3280)**
54 ROP	**~~6~~8.4.2 Exterior Walls.** **8.4.2.1 Vapor Retarders.** Exterior walls shall be provided with a system or method to manage moisture and vapor accumulation with one of the following. For	§3280.504(b) (b) *Exterior walls.* **(1) Vapor Retarders. Exterior walls shall be provided with a system or method to manage moisture and vapor accumulation with one of the following. For purposes of this**	§3280.504(b) (b) *Exterior walls.* (1) Exterior walls shall have a vapor barrier not greater than 1 perm (dry cup method) installed on the living space side of the wall, or

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
	purposes of this requirement, the mating wall of each single-family attached dwelling unit shall be considered to be an exterior wall. ~~6~~8.4.2.1.1 Exterior walls shall have a vapor retarder no greater than 1 perm (dry cup method) installed on the living space side of the wall. **8.4.2.1.2** Unventilated wall cavities shall have an external covering and/or sheathing that forms the pressure envelope. The covering and/or sheathing shall have a combined permeance of not less than 5.0 perms. In the absence of test data, combined permeance shall be permitted to be computed using the following formula: *P*Total=(1/[(1/*P*1)+(1/*P*2)]) where: P 1 and P 2 = the permeance values of the exterior covering and sheathing in perms **8.4.2.1.2.1** Formed exterior siding applied in sections with joints not caulked or sealed shall not be considered to restrict water vapor transmission. **8.4.2.1.3** Wall cavities shall be constructed so that ventilation is provided to dissipate any condensation occurring in these cavities.	**requirement, the mating wall of each single-family attached dwelling unit shall be considered to be an exterior wall.** **(i)** Exterior walls shall have a vapor barrier not greater than 1 perm (dry cup method) installed on the living space side of the wall, or **(ii)** Unventilated wall cavities shall have an external covering and/or sheathing which forms the pressure envelope. The covering and/or sheathing shall have a combined permeance of not less than 5.0 perms. In the absence of test data, combined permeance may be computed using the formula: *P*Total=(1/[(1/*P*1)+(1/*P*2)]) where *P*1 and *P*2 are the permeance values of the exterior covering and sheathing in perms. **(A)** Formed exterior siding applied in sections with joints not caulked or sealed shall not be considered to restrict water vapor transmission, or **(iii)** Wall cavities shall be constructed so that ventilation is provided to dissipate any condensation occurring in these cavities.	(2) Unventilated wall cavities shall have an external covering and/or sheathing which forms the pressure envelope. The covering and/or sheathing shall have a combined permeance of not less than 5.0 perms. In the absence of test data, combined permeance may be computed using the formula: *P*Total=(1/[(1/*P*1)+(1/*P*2)]) where *P*1 and *P*2 are the permeance values of the exterior covering and sheathing in perms. Formed exterior siding applied in sections with joints not caulked or sealed shall not be considered to restrict water vapor transmission, or (3) Wall cavities shall be constructed so that ventilation is provided to dissipate any condensation occurring in these cavities.
57 ROP **(NEW)**	**~~6~~8.4.4 Attic or Roof Ventilation.** **~~6~~8.4.4.1** A clear air passage space having a minimum height of 1 in. (25 mm) shall be provided between the top of the insulation and the roof sheathing or roof covering. Baffles or other means shall be provided where needed to ensure the 1 in. (25 mm) height of the	§3280.504(c) (c) *Attic or roof ventilation.* (1) Attic and roof cavities shall be vented in accordance with one of the following: (i) A minimum free ventilation area of not less than 1/300 of the attic or roof cavity floor area. At least	§3280.504(c) (c) *Attic or roof ventilation.* (1) Attic and roof cavities shall be vented in accordance with one of the following: (i) A minimum free ventilation area of not less than 1/300 of the attic or roof cavity floor area. At

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
57 ROP **(NEW)** (cont.)	clear air passage space is maintained. Attic and roof cavities shall be vented in accordance with one of the following: **(1)~~(a)~~** A minimum free-ventilation area of not less than 1/300 of the attic or roof cavity floor area. At least 50 percent of the required free-ventilation area shall be provided by ventilators located in the upper portion of the space to be ventilated. At least 40 percent shall be provided by eave, soffit, or low gable vents. The location and spacing of the vent openings and ventilators shall provide cross ventilation to the entire attic or roof cavity space. **(2)~~(b)~~** A mechanical attic or roof ventilation system shall be permitted to be installed instead of providing the free-ventilation area when the mechanical system provides a minimum air change rate of 0.02 cfm (0.54 L/min) per square foot of attic floor area. Intake and exhaust vents shall be located so as to provide air movement throughout the space. *Exception: Homes manufactured to be sited in "humid climates" or "fringe climates" as shown in Figure 8.4.2.1.5 shall be permitted not to have attic or roof ventilation. Air leakage paths from the living space to the roof cavity created by electrical outlets, electrical junctions, electrical cable penetrations, plumbing penetrations, flue pipe penetrations, and exhaust vent penetrations shall be sealed.*	50 percent of the required free ventilation area shall be provided by ventilators located in the upper portion of the space to be ventilated. At least 40 percent shall be provided by eave, soffit or low gable vents. The location and spacing of the vent openings and ventilators shall provide cross-ventilation to the entire attic or roof cavity space. A clear air passage space having a minimum height of 1 inch shall be provided between the top of the insulation and the roof sheathing or roof covering. Baffles or other means shall be provided where needed to insure the 1 inch height of the clear air passage space is maintained. (ii) A mechanical attic or roof ventilation system may be installed instead of providing the free ventilation area when the mechanical system provides a minimum air change rate of 0.02 cubic feet per minute (cfm) per sq. ft. of attic floor area. Intake and exhaust vents shall be located so as to provide air movement throughout space. **Exception: Homes manufactured to be sited in "humid climates" or "fringe climates" as shown in Figure 8.4.2.1.5 shall be permitted not to have attic or roof ventilation. Air leakage paths from the living space to the roof cavity created by electrical outlets, electrical junctions, electrical cable penetrations, plumbing penetrations, flue pipe penetrations, and exhaust vent penetrations shall be sealed.**	least 50 percent of the required free ventilation area shall be provided by ventilators located in the upper portion of the space to be ventilated. At least 40 percent shall be provided by eave, soffit or low gable vents. The location and spacing of the vent openings and ventilators shall provide cross-ventilation to the entire attic or roof cavity space. A clear air passage space having a minimum height of 1 inch shall be provided between the top of the insulation and the roof sheathing or roof covering. Baffles or other means shall be provided where needed to insure the 1 inch height of the clear air passage space is maintained. (ii) A mechanical attic or roof ventilation system may be installed instead of providing the free ventilation area when the mechanical system provides a minimum air change rate of 0.02 cubic feet per minute (cfm) per sq. ft. of attic floor area. Intake and exhaust vents shall be located so as to provide air movement throughout space.
60 ROP **(NEW)**	**~~6~~8.6.1 Coefficient of Heat Transmission.** **~~6~~8.6.1.1** The overall coefficient of heat transmission (U0) of the manufactured home for the respective zones and an indoor design temperature of 70°F (21°C), including internal and external ducts, and excluding infiltration, ventilation, and condensation control, shall not exceed the Btu/hr·ft2·°F (W/m2·K) of	§3280.506(a) a) Coefficient of heat transmission. The overall coefficient of heat transmission (Uo) of the manufactured home for the respective zones and an indoor design temperature of 70 F, including internal and external ducts, and excluding infiltration, ventilation and condensation control, shall not exceed the Btu/(hr.) (sq. ft.) (F) of	§3280.506(a) a) Coefficient of heat transmission. The overall coefficient of heat transmission (Uo) of the manufactured home for the respective zones and an indoor design temperature of 70 F, including internal and external ducts, and excluding infiltration, ventilation and condensation control, shall not exceed the Btu/(hr.) (sq. ft.) (F)

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
	the manufactured home envelope area as tabulated in Table 6.6.1.1. ~~6~~8.6.1.2 To ensure uniform heat transmission in manufactured homes, cavities in exterior walls, floors, and ceilings shall be provided with thermal insulation. 8.6.1.2.1 For insulation purposes, the mating wall of each single family attached dwelling unit shall be considered an exterior wall. 8.6.1.2.2 Floor/ceiling assemblies between stories of the dwelling unit shall not be required to be insulated.	the manufactured home envelope area as tabulated below: (table) (b) To assure uniform heat transmission in manufactured homes, cavities in exterior walls, floors, and ceilings shall be provided with thermal insulation. **(i) For insulation purposes, the mating wall of each single family attached dwelling unit shall be considered an exterior wall.** **(ii) Floor/ceiling assemblies between stories of the dwelling unit shall not be required to be insulated.**	of the manufactured home envelope area as tabulated below: (table) (b) To assure uniform heat transmission in manufactured homes, cavities in exterior walls, floors, and ceilings shall be provided with thermal insulation.
34 ROC	~~6~~8.7.1* **Transmission Heat Gains.** Homes complying with Section 8.7 shall meet the minimum heat loss transmission coefficients specified in 8.6.1.	§ 3280.507 Comfort heat gain. Information necessary to calculate the home cooling load shall be provided as specified in this part. (a) *Transmission heat gains*. Homes complying with this section shall meet the minimum heat loss transmission coefficients specified in §3280.506(a).	§ 3280.507 Comfort heat gain. Information necessary to calculate the home cooling load shall be provided as specified in this part. (a) *Transmission heat gains*. Homes complying with this section shall meet the minimum heat loss transmission coefficients specified in §3280.506(a).
33 ROC	~~6~~8.8.5* U-values for any glazing (e.g., windows, skylights, and the glazed portions of any door) shall be based on tests using AAMA 1503.1, Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors, and Glazed Wall Sections, or the NFRC 100, Procedure for Determining Fenestration Product Thermal Properties. In the absence of tests, manufacturers shall use the residential window U-values contained in Chapter 29, Table 5, of	§3280.508(e) (e) U-values for any glazing (windows, skylights, and the glazed portions of any door) shall be based on tests using American Architectural Manufacturers Association (AAMA) 1503.1–1988, Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections. In the absence of tests, manufacturers shall use the residential window U values contained in	§3280.508(e) (e) U-values for any glazing (windows, skylights, and the glazed portions of any door) shall be based on tests using American Architectural Manufacturers Association (AAMA) 1503.1–1988, Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections. In the absence of tests, manufacturers shall use the residential window U values

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
	the 1997 ASHRAE Handbook of Fundamentals. In the event that the classification of the window type is indeterminate, the manufacturer shall use the classification that gives the higher U-value. Where a composite of materials from two different product types is used, the product shall be assigned the higher U-value. For the purpose of calculating U0-values, storm windows shall be treated as an additional pane.	table 13 in chapter 27, the 1989 ASHRAE Handbook of Fundamentals. In the event that the classification of the window type is indeterminate, the manufacturer shall use the classification which gives the higher U value. For the purpose of calculating Uo values, storm windows shall be treated as an additional pane.	contained in table 13 in chapter 27, the 1989 ASHRAE Handbook of Fundamentals. In the event that the classification of the window type is indeterminate, the manufacturer shall use the classification which gives the higher U value. For the purpose of calculating Uo values, storm windows shall be treated as an additional pane.
66 ROP	~~7~~9**.8.2 Piping Supports.** Piping shall be secured at sufficiently close intervals to keep the pipe in alignment and carry the weight of the pipe and contents. Unless otherwise stated in the referenced standards in Table ~~7~~9.4.1, or unless specified by the pipe manufacturer, plastic drainage piping shall be supported at intervals not to exceed 4 ft (1220 mm), and horizontal plastic water piping shall be supported at intervals not to exceed 3 ft (915 mm). Vertical drainage and water piping shall be supported at each story height.	§3280.608(b) (b) *Piping supports.* Piping shall be secured at sufficiently close intervals to keep the pipe in alignment and carry the weight of the pipe and contents. Unless otherwise stated in the standards for specific materials shown in the table in §3280.604(a), or unless specified by the pipe manufacturer, **plastic drainage piping shall be supported at intervals not to exceed 4 feet and horizontal plastic water piping shall be supported at intervals not to exceed 3 feet. Vertical drainage and water piping shall be supported at each story height.**	§3280.608(b) (b) *Piping supports.* Piping shall be secured at sufficiently close intervals to keep the pipe in alignment and carry the weight of the pipe and contents. Unless otherwise stated in the standards for specific materials shown in the table in §3280.604(a), or unless specified by the pipe manufacturer, plastic drainage piping shall be supported at intervals not to exceed 4 feet and plastic water piping shall be supported at intervals not to exceed 3 feet.
39 ROC	**7.9.3.1.2** Relief valves shall be provided with full-sized drains, with cross-sectional areas equivalent to that of the relief valve outlet. ~~, that shall be directed downward and discharge beneath the manufactured home.~~ The outlet of a pressure relief valve, temperature relief valve, or combination thereof, shall not be directly connected to the drainage system. The discharge for the relief valve shall be piped full size separately to the outside of the dwelling unit or to an approved location inside the dwelling unit. Drain lines shall be of a material listed for relief valve discharge tubing use or hot water distribution and shall drain	§3280.609(c)(iii) (iii) Relief valves shall be provided with full-sized drains, with cross sectional areas equivalent to that of the relief valve outlet. **The outlet of a pressure relief valve, temperature relief valve, or combination thereof, shall not be directly connected to the drainage system. The discharge for the relief valve shall be piped full size separately to the outside of the dwelling unit or to an approved location inside the dwelling unit.** Drain lines shall be of a material listed for hot water distribution and shall drain fully by gravity, shall not	§3280.609(c)(iii) (iii) Relief valves shall be provided with full-sized drains, with cross sectional areas equivalent to that of the relief valve outlet, which shall be directed downward and discharge beneath the manufactured home. Drain lines shall be of a material listed for hot water distribution and shall drain fully by gravity, shall not be trapped, and shall not have their outlets threaded, and the end of the drain shall be visible for inspection.

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
	fully by gravity, ~~. Drain lines~~ shall not be trapped, and shall not ~~or~~ have their outlets threaded. The end of the drain shall be visible for inspection.	be trapped, and shall not have their outlets threaded, and the end of the drain shall be visible for inspection.	
70 ROP	~~7~~9**.10.3.5 Preassembly of Drain Lines.** Section(s) of the drain system that are designed to be located underneath the manufactured home or between stories of a manufactured home shall not be required to be factory-installed when the manufacturer designs the system for site assembly and provides all materials and components, including piping, fittings, cement, supports, and instructions necessary for proper site installation.	§3280.610(c)(5) (5) *Preassembly of drain lines*. **Section(s) of the drain system, designed to be located underneath the manufactured home or between stories of the manufactured home**, are not required to be factory installed when the manufacturer designs the system for site assembly and also provides all materials and components, including piping, fittings, cement, supports, and instructions necessary for proper site installation.	§3280.610(c)(5) (5) *Preassembly of drain lines*. Section(s) of the drain system, designed to be located underneath the home, are not required to be factory installed when the manufacturer designs the system for site assembly and also provides all materials and components, including piping, fittings, cement, supports, and instructions necessary for proper site installation.
71 ROP 71 ROP (cont.)	~~7~~9**.11.3.1(2)** A 1 ½-in. (40-mm) minimum diameter continuous vent or equivalent that is indirectly connected to the water closet drain piping within the distance allowed in Table ~~7~~9.11.3.5 for 3-in. (75-mm) trap arms through a 2-in. (50-mm) wet-vented drain that carries the waste of not more than one fixture. Sections of the wet vented drain that is 3 in. (75 mm) diameter shall be permitted to carry the waste of an unlimited number of fixtures.	§3280.611(c) (c) *Size of vent piping*—(1) *Main vent*. The drain piping for each toilet shall be vented by a 11.2 inch minimum diameter vent or rectangular vent of venting cross section equivalent to or greater than the venting cross section of a 11.2 inch diameter vent, connected to the toilet drain by one of the following methods: (i) A 11.2 inch diameter (min.) individual vent pipe or equivalent directly connected to the toilet drain within the distance allowed in §3280.611(c)(5), for 3-inch trap arms undiminished in size through the roof, (ii) A 1 ½-inch diameter (min.) continuous vent or equivalent, indirectly connected to the toilet drain piping within the distance allowed in §3280.611(c)(5) for 3 inch trap arms through a 2-inch wet vented drain that carries the waste of not more than one fixture, **(A) Sections of the wet vented drain that is 3 in. (75 mm) diameter shall be permitted to carry**	§3280.611(c) (c) *Size of vent piping*—(1) *Main vent*. The drain piping for each toilet shall be vented by a 11.2 inch minimum diameter vent or rectangular vent of venting cross section equivalent to or greater than the venting cross section of a 11.2 inch diameter vent, connected to the toilet drain by one of the following methods: (i) A 11.2 inch diameter (min.) individual vent pipe or equivalent directly connected to the toilet drain within the distance allowed in §3280.611(c)(5), for 3-inch trap arms undiminished in size through the roof, (ii) A 1 ½-inch diameter (min.) continuous vent or equivalent, indirectly connected to the toilet drain piping within the distance allowed in §3280.611(c)(5) for 3 inch trap arms through a 2-inch wet vented drain that carries the waste of not more than one fixture, or, (iii) Two or more vented drains when at least one is wet-vented, or 2-inch diameter (minimum), and

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
		the waste of an unlimited number of fixtures. (iii) Two or more vented drains when at least one is wet-vented, or 2-inch diameter (minimum), and each drain is separately connected to the toilet drain. At least one of the drains shall connect within the distance allowed in § 3280.611(c)(5) for 3-inch trap arms.	each drain is separately connected to the toilet drain. At least one of the drains shall connect within the distance allowed in § 3280.611(c)(5) for 3-inch trap arms.
72 ROP	~~7~~9**.12.1 Water System.** All water piping in the water distribution system shall be subjected to a pressure test. The test shall be made by subjecting the system to air or water at ~~100 psi (690 kPa)~~80 psi + 5 psi (552kPa + 35kPa) for 15 minutes without loss of pressure. The water used for the test shall be obtained from a potable source of supply.	§ 3280.612 Tests and inspection. (a) *Water system.* All water piping in the water distribution system shall be subjected to a pressure test. **The test shall be made by subjecting the system to air or water at 80 psi + 5 psi (552kPa + 35kPa) for 15 minutes without loss of pressure. The water used for the test shall be obtained from a potable source of supply.**	§ 3280.612 Tests and inspection. (a) *Water system.* All water piping in the water distribution system shall be subjected to a pressure test. The test shall be made by subjecting the system to air or water at 100 psi for 15 minutes without loss of pressure.
76 ROP	**Table ~~8~~10.3 Minimum Standards** **Appliances** / **Referenced Standards** *Gas Clothes Dryers, Vol. 1, Type 1 Clothes Dryers* — ANSI Z 21.5.1-~~1995~~ 1999 with Addenda Z21.5.1a 1999 *Gas-Fired Central Furnaces* — ANSI Z 21.47-~~1995,~~ 1998 with Addenda Z 21.47a-1999~~1995 and Z 21.47b-1997~~	Gas Clothes Dryers Vol. 1, Type 1 Clothes Dryers--ANSI Z21.5.1-**1999 with Addenda Z21.5.1a 1999** Gas-Fired Central Furnaces [Except Direct Vent System Central Furnaces]--ANSI Z21.47-**1998**, With Addendum Z21.47a-**1999.**	§3280.703 Minimum Standards. Gas Clothes Dryers Vol. 1, Type 1 Clothes Dryers--ANSI Z21.5.1-1992. Gas-Fired Central Furnaces [Except Direct Vent System Central Furnaces]--ANSI Z21.47-1990, With Addendum Z21.47a-1990 and Z21.47b-1992.

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)		24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
76 ROP (cont.)	*Household Cooking-Gas Appliances*	ANSI Z 21.1, 1996 ~~with Addenda Z 21.1a-1997 and Z 21.1b-1998~~	Household Cooking Gas Appliances ANSI Z21.1-**1996.**	Household Cooking Gas Appliances ANSI Z21.1-1990 With Addenda Z21.1a-1991 and Z211b-1993.
	Gas Water Heaters, Vol. 1, Storage Water Heaters with Input Ratings of 75,000 Btu per Hour or Less	ANSI Z 21.10.1-1998 with Addenda Z21.10.1-2000	Gas Water Heaters Vol. 1, Storage Water Heaters With Input Ratings of 75,000 BTU per hour or Less--ANSI Z21.10.1-**1998**, With Addendum **Z21.10.1-2000**	Gas Water Heaters Vol. 1, Storage Water Heaters With Input Ratings of 75,000 BTU per hour or Less--ANSI Z21.10.1-1990, With Addendum Z21.10.1a-1991 and Z21.10.1b-1992.
	Ferrous Pipe and Fittings		**Ferrous Pipe and Fittings**	**Ferrous Pipe and Fittings**
	Gas Piping Systems Using Corrugated Stainless Steel Tubing	LC 1-1997 with Addenda LC-1a-1999	**Gas Piping Systems Using Corrugated Stainless Steel Tubing - LC 1-1997 with Addenda LC-1a-1999.**	**(new material not currently addressed in 3280)**
	Nonferrous Pipe, Tubing, and Fittings		**Nonferrous Pipe, Tubing, and Fittings**	**Nonferrous Pipe, Tubing, and Fittings**
	Metal Connectors for Gas Appliances	ANSI Z 21.24-1997 with Addenda Z21.24a-2000	Metal Connectors for Gas Appliances--ANSI Z21.24-**1997**, With Addenda Z21.24a **2000.**	Metal Connectors for Gas Appliances--ANSI Z21.24-1987, With Addenda Z21.24a 1990 and Z21.24b-1992.
	Miscellaneous		**Miscellaneous**	**Miscellaneous**
76 ROP (cont.)	*Relief Valves and Automatic Gas Shutoff Devices for Hot Water Supply Systems*	ANSI Z 21.22-~~1986,~~1999 with Addendum Z ~~21.22a-1990~~	Relief Valves and Automatic Gas Shutoff Devices for Hot Water Supply Systems--ANSI Z21.22-**1999**, With **Addendum Z.**	Relief Valves and Automatic Gas Shutoff Devices for Hot Water Supply Systems--ANSI Z21.22-1986, With Addenda Z21.22a-1990.
	Automatic Gas Ignition Systems and Components	ANSI Z 21.20-2000~~1997~~, with Addendum Z 21.20a~~-1998~~	Automatic Gas Ignition Systems and Components--ANSI Z21.20-**2000**, With Addendum **Z21.20a.**	Automatic Gas Ignition Systems and Components--ANSI Z21.20-1989, With Addendum Z21.20a-1991 and Z21.20b-1992.

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
76 ROP (cont.)	*Automatic Valves for Gas Appliances* ANSI Z 21.21-1995, with Addendum Z 21.21a-1998, and Z21.21b-1999 *Gas Appliance Thermostats* ANSI Z 21.23-2000~~1993, with Addenda Z 21.23a-1994 and Z 21.23b-1997~~	Automatic Valves for Gas Appliances--ANSI Z21.21-**1995**, With Addendum Z21.21a-**1998** and Z21.21b-**1999.** Gas Appliance Thermostats --ANSI Z21.23-**2000**.	Automatic Valves for Gas Appliances--ANSI Z21.21-1987, With Addendum Z21.21a-1989 and Z21.21b-1992. Gas Appliance Thermostats --ANSI Z21.23-1989, With Addenda Z21.23a-1991.
77 ROP	**~~8~~10.4.3.1** All points of crossover beneath the transportable section shall be readily accessible from the exterior of the home. In multi-story dwelling units, the connections between stories shall be accessible through a panel on the exterior or interior of the dwelling unit.	§3280.705(c)(1) (1) All points of crossover **beneath the transportable section** shall be readily accessible from the exterior of the home. **In multi-story dwelling units, the connections between stories shall be accessible through a panel on the exterior or interior of the dwelling unit.**	§3280.705(c)(1) (1) All points of crossover shall be readily accessible from the exterior of the home.
77 ROP	**~~8~~10.4.10 Gas Supply Connections.** When gas appliances are installed, at least one gas supply connection shall be provided on each home dwelling unit. ~~The connection shall not be located beneath an exit door. Where more than one connection is provided, the piping system shall be sized to provide adequate capacity from each supply connection.~~ **~~8~~10.4.11 Identification of Gas Supply Connections.**	§3280.705(j) (j) *Gas supply connections.* When gas appliances are installed, at least one gas supply connection shall be provided on each home **dwelling unit.** §3280.705(k)	§3280.705(j) (j) *Gas supply connections.* When gas appliances are installed, at least one gas supply connection shall be provided on each home. The connection shall not be located beneath an exit door. Where more than one connection is provided, the piping system shall be sized to provide adequate capacity from each supply connection. §3280.705(k)

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
77 ROP (cont.)	Each manufactured home dwelling unit shall have permanently affixed to the exterior skin, at or near each gas supply connection or the end of the pipe, a tag with a minimum size of 3 in. x 1 ¾ in. (75 mm 44 mm) made of etched, metal-stamped, or embossed brass; stainless steel; anodized or alclad aluminum not less than 0.020-in. (0.5-mm) thick, or other approved material [e.g., 0.005-in. (0.1-mm) plastic laminate], with the information shown in Figure 8.4.11. The connector capacity indicated on this tag shall be equal to or greater than the total Btu/hr rating of all intended gas appliances.	(k) *Identification of gas supply connections.* Each manufactured home **dwelling unit** shall have permanently affixed to the exterior skin at or near each gas supply connection or the end of the pipe, a tag of 3 inches by 1 ¾ inches minimum size, made of etched, metal-stamped or embossed brass, stainless steel, anodized or alclad aluminum not less than 0.020 inch thick, or other approved material (e.g., 0.005 inch plastic laminates), which reads as follows. The connector capacity indicated on this tag shall be equal to or greater than the total Btuh rating of all intended gas appliances. The connector capacity indicated on this tag shall be equal to or greater than the total Btuh rating of all intended gas appliances.	(k) *Identification of gas supply connections.* Each manufactured home shall have permanently affixed to the exterior skin at or near each gas supply connection or the end of the pipe, a tag of 3 inches by 1 ¾ inches minimum size, made of etched, metal-stamped or embossed brass, stainless steel, anodized or alclad aluminum not less than 0.020 inch thick, or other approved material (e.g., 0.005 inch plastic laminates), which reads as follows. The connector capacity indicated on this tag shall be equal to or greater than the total Btuh rating of all intended gas appliances. The connector capacity indicated on this tag shall be equal to or greater than the total Btuh rating of all intended gas appliances.
78 ROP	~~8~~10.4.12.7 **Hangers and Supports.** All horizontal gas piping shall be adequately supported by galvanized or equivalently protected metal straps or hangers at intervals of not more than 4 ft (1220 mm)~~.~~, except where adequate support and protection is provided by structural members. Vertical gas piping in multi-story dwelling units shall be supported at intervals of not more than 6 ft (1.8 m). Solid iron pipe ~~gas supply~~ connection(s) shall be rigidly anchored to a structural member within 6 in. (152 mm) of the supply connection(s).	§3280.705(l)(7) (7) *Hangers and supports.* All **horizontal** gas piping shall be adequately supported by galvanized or equivalently protected metal straps or hangers at intervals of not more than 4 feet, except where adequate support and protection is provided by structural members. **Vertical gas piping in multi-story dwelling units shall be supported at intervals of not more than 6 ft (1.8 m).** Solid iron-pipe connection(s) shall be rigidly anchored to a structural member within 6 inches of the supply connection(s).	§3280.705(l)(7) (7) *Hangers and supports.* All gas piping shall be adequately supported by galvanized or equivalently protected metal straps or hangers at intervals of not more than 4 feet, except where adequate support and protection is provided by structural members. Solidiron- pipe gas supply connection(s) shall be rigidly anchored to a structural member within 6 inches of the supply connection(s).
79 ROP	~~8~~10.4.12.8.1 Before appliances are connected, piping systems shall stand a pressure of ~~at least 6 in. mercury or~~ 3 psi ± 0.2 psi gauge (21 kPa ± 1.5 kPa gauge) for a period of not less than 10 minutes without showing any drop in pressure. Pressure shall be measured with a mercury manometer or slope gauge calibrated so as to be read in increments of not greater than one-tenth pound, or be measured with an equivalent device. The	§3280.705(l)(8) (8) *Testing for leakage.* (i) **Before appliances are connected, piping systems shall stand a pressure of three ± 0.2 PSI gage for a period of not less than ten minutes without showing any drop in pressure.** Pressure shall be measured with a mercury manometer or slope gage calibrated so as to be read in increments of not greater than one-tenth pound, or	§3280.705(l)(8) (8) *Testing for leakage.* (i) Before appliances are connected, piping systems shall stand a pressure of at least six inches mercury or three PSI gage for a period of not less than ten minutes without showing any drop in pressure. Pressure shall be measured with a mercury manometer or slope gage calibrated so as to be read in increments of not

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
	source of normal operating pressure shall be isolated before the pressure tests are performed. Before a test is begun, the temperature of the ambient air and of the piping shall be approximately the same, and constant air temperature shall be maintained throughout the test.	an equivalent device. The source of normal operating pressure shall be isolated before the pressure tests are made. Before a test is begun, the temperature of the ambient air and of the piping shall be approximately the same, and constant air temperature be maintained throughout the test.	greater than one-tenth pound, or an equivalent device. The source of normal operating pressure shall be isolated before the pressure tests are made. Before a test is begun, the temperature of the ambient air and of the piping shall be approximately the same, and constant air temperature be maintained throughout the test.
80 ROP	**10.4.12.8.3** Where gas piping between transportable sections must be made by means of hard pipe installed on site, the installation instructions shall contain provisions for on site testing for leakage.	**§3280.705(l)(8)(iii)** **Where gas piping between transportable sections must be made by means of hard pipe installed on site, the installation instructions shall contain provisions for on site testing for leakage.**	**(new material not currently addressed in 3280)**
81 ROP	**~~8~~10.7.1.1** All gas and electric clothes dryers shall be exhausted to the outside by a moisture/lint exhaust duct and termination fitting. When the ~~clothes dryer is supplied by the manufacturer~~manufacturer supplies the clothes dryer, the exhaust duct and termination fittings shall be completely installed by the manufacturer. If the exhaust duct system is subject to damage during transportation, or a field connection between transportable sections is required, ~~it~~factory installation shall not be required ~~to be completely installed at the factory if~~when the following apply: (1) The exhaust duct system is connected to the clothes dryer. (2) A moisture/lint exhaust duct system is roughed in, and installation instructions are provided in accordance with ~~8~~10.7.2(3)~~(c)~~ or ~~8~~10.7.3.	§3280.708(a)(1) (a) *Clothes dryers.* (1) All gas and electric clothes dryers shall be exhausted to the outside by a moisture-lint exhaust duct and termination fitting. **When the manufacturer supplies the clothes dryer, the exhaust duct and termination fittings shall be completely installed by the manufacturer. However, if the exhaust duct system is subject to damage during transportation, or a field connection between transportable sections is required, factory installation shall not be required when the following apply:** (i) The exhaust duct system is connected to the clothes dryer, and (ii) A moisture lint exhaust duct system is roughed in and installation instructions are provided in accordance with paragraph (b)(3) or (c) of this section.	§3280.708(a)(1) (a) *Clothes dryers.* (1) All gas and electric clothes dryers shall be exhausted to the outside by a moisture-lint exhaust duct and termination fitting. When the clothes dryer is supplied by the manufacturer, the exhaust duct and termination fittings shall be completely installed by the manufacturer. However, if the exhaust duct system is subject to damage during transportation, it need not be completely installed at the factory when: (i) The exhaust duct system is connected to the clothes dryer, and (ii) A moisture lint exhaust duct system is roughed in and installation instructions are provided in accordance with paragraph (b)(3) or (c) of this section.
41 ROC	**10.8.1.1** A direct vent space heating appliance shall be permitted to be shipped loose for on-site installation in a basement provided the following: (1) The heating appliance is listed for the	**§3280.709(a)(1)** **(1) A direct vent space heating appliance shall be permitted to be shipped loose for on-site installation in a basement provided the following:**	**(new material not currently addressed in 3280)**

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
41 ROC (cont.)	installation. (2) Approved installation instructions are provided that include requirements for completion of all gas and electrical connections and provide for inspection and/or testing of all connections. (3) Approved instructions are provided to assure connection of the vent and combustion air systems in accordance with 10.9.2, and to provide for inspection of the systems for compliance. (4) Approved installation and inspection procedures are provided for the connection of the site-installed heating appliance to the factory-installed circulation air system and return air systems. **10.8.1.2** The procedures shall include revisions to assure compliance of the installed systems with Section 10.14.	**(i) The heating appliance is listed for the installation.** **(ii) Approved installation instructions are provided that include requirements for completion of all gas and electrical connections and provide for inspection and/or testing of all connections.** **(iii) Approved instructions are provided to assure connection of the vent and combustion air systems in accordance with 10.9.2, and to provide for inspection of the systems for compliance.** **(iv) Approved installation and inspection procedures are provided for the connection of the site-installed heating appliance to the factory-installed circulation air system and return air systems.** **(2) The procedures shall include revisions to assure compliance of the installed systems with Section 10.14.**	
42 ROC	**10.8.9 Site Installed Water Heater.** A water heater shall be permitted to be shipped loose for on-site installation provided that 10.8.9.1 through 10.8.9.6 are met. **10.8.9.1** The water heater shall be listed for the installation. **10.8.9.2** Approved installation instructions shall be provided which include requirements for completion of all gas, water, and electrical connections, and provide for inspection and/or test of all connections. **10.8.9.3** Approved instructions shall be provided to	**§3280.709(h)** **(h) Site Installed Water Heater. A water heater shall be permitted to be shipped loose for on-site installation provided that §3280.709(h)(1) through §3280.709(h)(6) are met.** **(1) The water heater shall be listed for the installation.** **(2) Approved installation instructions shall be provided which include requirements for completion of all gas, water, and electrical connections, and provide for inspection and/or test of all connections.** **(3) Approved instructions shall be provided to**	**(new material not currently addressed in 3280)**

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
42 ROC (cont.)	assure connection of the vent and combustion air systems in accordance with 10.9.2, and for the inspection of the completed installation. **10.8.9.4** Approved instructions shall be provided for installation and inspection of the relief valve for compliance with 9.9.3. **10.8.9.5** When a water heater with an ignition source is to be installed in a garage, the installation instructions shall require that the water heater be elevated such that the source of ignition is not less than 18 in. (457 mm) above the garage floor except if it is listed as being resistant to the ignition of flammable vapors.	**assure connection of the vent and combustion air systems in accordance with §3280.710(b), and for the inspection of the completed installation.** **(4) Approved instructions shall be provided for installation and inspection of the relief valve for compliance with §3280.609(c).** **(5) When a water heater with an ignition source is to be installed in a garage, the installation instructions shall require that the water heater be elevated such that the source of ignition is not less than 18 in. (457 mm) above the garage floor except if it is listed as being resistant to the ignition of flammable vapors.**	
43 ROC	**10.14.5.1** As an alternative, supply ducts shall be considered substantially airtight when duct pressurization testing demonstrates duct leakage of less than 60 cfm (1.7 m3/min) per floor at a differential pressure of in. water (25 Pa).	§3280.715(a)(4) (4) *Airtightness of supply duct systems.* A supply duct system shall be considered substantially airtight when the static pressure in the duct system, with all registers sealed and with the furnace air circulator at high speed, is at least 80 percent of the static pressure measured in the furnace casing, with its outlets sealed and the furnace air circulator operating at high speed. For the purpose of this paragraph and § 3280.715(b) pressures shall be measured with a water manometer or equivalent device calibrated to read in increments not greater than 1.10 inch water column. **(i) As an alternative, supply ducts shall be considered substantially airtight when duct**	§3280.715(a)(4) (4) *Airtightness of supply duct systems.* A supply duct system shall be considered substantially airtight when the static pressure in the duct system, with all registers sealed and with the furnace air circulator at high speed, is at least 80 percent of the static pressure measured in the furnace casing, with its outlets sealed and the furnace air circulator operating at high speed. For the purpose of this paragraph and § 3280.715(b) pressures shall be measured with a water manometer or equivalent device calibrated to read in increments not greater than 1.10 inch water column.

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
		pressurization testing demonstrates duct leakage of less than 60 cfm (1.7 m3/min) per floor at a differential pressure of in. water (25 Pa).	
87 ROP	**~~8~~10.14.8** Supply and return ducts, fittings, and crossover duct plenums exposed directly to outside air, such as those under chassis crossover ducts or ducts connecting external heating, cooling, or combination heating/cooling appliances, shall be insulated with material having a minimum thermal resistance of R-8 in Thermal Zones 1, 2, and 3. ~~and 2. In Thermal Zone 3, such materials shall have a minimum thermal resistance of R-8, unless installed in a basement.~~ All such insulating materials shall have a continuous vapor barrier having a perm rating of not more than 1 perm. Where ducts are exposed underneath the manufactured home, they shall comply with ~~8~~10.14.6.2 and shall be listed for exterior use.	§3280.715(a)(7) (7) **Supply and return ducts exposed directly to outside air, such as under chassis crossover ducts or ducts connecting external heating, cooling or combination heating/cooling appliances shall be insulated with material having a minimum thermal resistance of R=8.0 in Thermal Zones 1, 2, and 3, with a continuous vapor barrier having a perm rating of not more than 1 perm.** Where exposed underneath the manufactured home, all such ducts shall comply with § 3280.715(a)(5)(ii).	§3280.715(a)(7) (7) Supply and return ducts exposed directly to outside air, such as under chassis crossover ducts or ducts connecting external heating, cooling or combination heating/cooling appliances shall be insulated with material having a minimum thermal resistance of R=4.0, with a continuous vapor barrier having a perm rating of not more than 1 perm. Where exposed underneath the manufactured home, all such ducts shall comply with § 3280.715(a)(5)(ii).
44 ROC	**~~8~~10.14.10 Joints and Seams.** Joints and seams of sheet metal and factory-made flexible ducts, including trunks, branches, risers, crossover ducts, and crossover duct plenums shall be mechanically secured and made substantially airtight. Slip joints in sheet metal ducts shall have a lap of at least 1 in. (25 mm) and shall be mechanically fastened. Tapes or caulking compounds shall be permitted to be used for sealing mechanically secure joints. Tapes used on the inside of metal duct joints shall be approved and listed for that application. Sealants and	§3280.715(c) (c) *Joints and seams.* **Joints and seams of sheet metal and factory-made flexible ducts, including trunks, branches, risers, crossover ducts, and crossover duct plenums shall be mechanically secured and made substantially airtight. Slip joints in sheet metal ducts shall have a lap of at least 1 inch and shall be mechanically fastened.** Tapes or caulking compounds may be used for sealing mechanically secure joints. **Tapes used on the inside of metal duct joints shall be approved**	§3280.715(c) (c) *Joints and seams.* Joints and seams of ducts shall be securely fastened and made substantially airtight. Slip joints shall have a lap of at least 1 inch and shall be individually fastened. Tape or caulking compound may be used for sealing mechanically secure joints. Where used, tape or caulking compound shall not be subject to deterioration under long exposures to temperatures up to 200° F. and to conditions of high humidity, excessive moisture, or mildew.

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
44 ROC (cont.)	tapes shall be applied only to surfaces that are dry, dust-, dirt-, oil-, and grease-free. **10.14.10.1** 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, Closure Systems for Use with Rigid Air Ducts and Air Connectors. ~~, 1994, with revision 12/98. Tapes and mastic closure systems for use with factory-made flexible air ducts and air connectors shall be listed in accordance with UL 181B, Closure Systems for Use with Flexible Air Ducts and Air Connectors, 1995, with revision 12/98.~~	**and listed for that application.** Where used, tape or caulking compound shall not be subject to deterioration under long exposures to temperatures up to 200° F. and to conditions of high humidity, excessive moisture, or mildew. **Sealants and tapes shall be applied only to surfaces that are dry, dust-, dirt-, oil-, and grease-free.** **(1) 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, Closure Systems for Use with Rigid Air Ducts and Air Connectors.**	
46 ROC-->\ 93 ROP-->\ 47 ROC-->	~~9~~**11.10.2** Each manufactured home shall be subjected to the following tests: (1) An electrical continuity test to ensure that metallic parts are effectively ~~properly~~ bonded. (2) An operational test of all devices, and utilization equipment ~~to demonstrate that all equipment,~~ except water heaters, electric ranges, ~~and~~ electrical furnaces, dishwashers, clothes washers/dryers, and portable appliances to demonstrate they are connected and in working order. (3) Electrical polarity checks to determine that connections have been ~~properly~~ made~~.~~ in accordance with applicable provisions of MHCSS and NFPA 70, *National Electric Code*. Visual verification shall be an acceptable electrical polarity check.	§3280.810(b) (b) Each manufactured home shall be subject to: (1) **A continuity test to assure that metallic parts are effectively bonded;** (2) **Operational test of all devices and equipment, except water heaters, electric ranges, electric furnaces, dishwashers, clothes washers/dryers, and portable appliances, to demonstrate they are connected and in working order; and** (3) **Electrical polarity checks to determine that connections have been made in accordance with applicable provisions of MHCSS and NFPA 70, National Electric Code. Visual verification shall be an acceptable electrical polarity check.**	§3280.810(b) (b) Each manufactured home shall be subject to: (1) A continuity test to assure that metallic parts are properly bonded; (2) Operational test to demonstrate that all equipment, except water heaters, electric furnaces, dishwashers, clothes washers/dryers, and portable appliances, is connected and in working order; and (3) Polarity checks to determine that connections have been properly made. Visual verification shall be an acceptable check.

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
48 ROC	**Chapter 12~~0~~ Transportation** **12~~0~~.2.2 Drawbar and Coupling Mechanism.** The rigid assembly (usually an A frame) where the coupling mechanism is mounted that connects the manufactured home's substructure ~~frame~~ to the towing vehicle. **12~~0~~.2.3 Frame.** The fabricated, rigid substructure that provides ~~considerable~~ support to the affixed manufactured home structure, both during transport and on-site, and provides a platform for securement of the running gear assembly and the drawbar and coupling mechanism. ~~**10.2.4 Highway.** Includes all roads and streets to be legally used in transporting the manufactured home.~~ ~~**10.2.5 Lights.** Those safety lights and their associated wiring required by applicable U.S. Department of Transportation regulations.~~ **12~~0~~.2.6 Running Gear Assembly.** The assembly ~~subsystem~~ consisting of suspension springs, axles, bearings, wheels, hubs, tires, and brakes, with their related connecting hardware. **12.3 General Requirements.** The manufactured home and its transportation system (as defined in Section 12.2) shall withstand the effects of highway movement	Subpart J - Transportation §3280.902 (b) *Drawbar and coupling mechanism* means the rigid assembly, (usually an A frame) upon which is mounted a coupling mechanism, **which connects the manufactured home's substructure to the towing vehicle.** (c) ***Frame* means the fabricated rigid substructure which provides support to the affixed manufactured home structure both during transport and on-site**; and also provides a platform for securement of the running gear assembly, the drawbar and coupling mechanism. (d) **Running gear assembly means the assembly** consisting of suspension springs, axles, bearings, wheels, hubs, tires, and brakes, with their related hardware. §3280.903(a) (a) **The manufactured home and its transportation system (as defined in §3280.902(f)) shall withstand the effects of highway movement**	Subpart J - Transportation §3280.902 (b) *Drawbar and coupling mechanism* means the rigid assembly, (usually an A frame) upon which is mounted a coupling mechanism, which connects the manufactured home's frame to the towing vehicle. (c) *Frame* means the fabricated rigid substructure which provides considerable support to the affixed manufactured home structure both during transport and on-site; and also provides a platform for securement of the running gear assembly, the drawbar and coupling mechanism. (g) Highway, includes all roads and streets to be legally used in transporting the manufactured home. (d) Running gear assembly means the subsystem consisting of suspension springs, axles, bearings, wheels, hubs, tires, and brakes, with their related hardware. (e) Lights means those safety lights and associated wiring required by applicable U.S. Department of Transportation regulations. §3280.903(a) (a) The cumulative effect of highway transportation shock and vibration upon a manufactured home structure may result in

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
48 ROC (cont.)	such that the home is capable of being transported safely and installed as a habitable structure. Structural, plumbing, mechanical, and electrical systems shall be designed to function after set-up. The home shall remain weather protected during the transportation sequence to prevent internal damage. Suitability of the transportation system and home structure to withstand the effects of transportation shall be permitted to be determined by testing, or engineering analysis, or a combination of the two as required in 12.3.1 and 12.3.2.	**such that the home is capable of being transported safely and installed as a habitable structure. Structural, plumbing, mechanical, and electrical systems shall be designed to function after set-up. The home shall remain weather protected during the transportation sequence to prevent internal damage. Suitability of the transportation system and home structure to withstand the effects of transportation shall be permitted to be determined by testing, or engineering analysis, or a combination of the two as required in §3280.903(a)(1) and §3280.903(a)(2).**	incremental degradation of its designed performance in terms of providing a safe, healthy and durable dwelling. Therefore, the manufactured home shall be designed, in terms of its structural, plumbing, mechanical and electrical systems, to fully withstand such transportation forces during its intended life. (See Secs. 3280.303(c) and 3280.305(a)).
	~~10.3.1~~ ~~The manufactured home shall be designed, in terms of its structural, plumbing, mechanical, and electrical systems, to fully withstand the cumulative effect of highway transportation shock and vibration during its intended life. (See 4.3.3 and 4.5.1.)~~		
48 ROC (cont.)	~~**10.3.2** Particular attention shall be given to maintaining watertight integrity and conserving energy by ensuring that structural components in the roof and walls (and their interfaces with vents, windows, doors, etc.) are capable of resisting highway shock and vibration forces during primary and subsequent secondary transportation moves.~~		(b) Particular attention shall be given to maintaining watertight integrity and conserving energy by assuring that structural components in the roof and walls (and their interfaces with vents, windows, doors, etc.) are capable of resisting highway shock and vibration forces during primary and subsequent secondary transportation moves.
	12.3.1 Road Tests. Tests shall be witnessed by an independent registered professional engineer or architect, or by a recognized testing organization. Such testing procedures shall be become part of the manufacturer's approved design.	**§3280.903(a)(1)** **Road Tests. Tests shall be witnessed by an independent registered professional engineer or architect, or by a recognized testing organization. Such testing procedures shall be become part of the manufacturer's approved design.**	**(new material not currently addressed in 3280)**

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
48 ROC (cont.)	~~**10.3.3*** Either of the following shall be accepted in place of an engineering analysis:~~ ~~(1) Documented technical data of suitable highway tests that were conducted to simulate transportation loads and conditions~~ ~~(2) Acceptable documented evidence of actual transportation experience that meets the intent of this chapter~~ **12.3.2* Engineering Analysis.** Engineering analysis methods, based on the rational application of principles of mechanics and on data that shall be permitted to be taken from successfully transported homes, shall be permitted to be developed to support adequacy of the transportation system.	**§3280.903(a)(2)** **Engineering Analysis. Engineering analysis methods, based on the rational application of principles of mechanics and on data that shall be permitted to be taken from successfully transported homes, shall be permitted to be developed to support adequacy of the transportation system.**	(c) In place of an engineering analysis, either of the following may be accepted: (1) Documented technical data of suitable highway tests which were conducted to simulate transportation loads and conditions; or (2) Acceptable documented evidence of actual transportation experience which meets the intent of this subpart. **(new material not currently addressed in 3280)**
48 ROC	**12~~0~~.4 ~~Specific~~ General Requirements.** **12~~0~~.4.1* System Requirements.** The ~~entire~~ transportation system ~~(frame, drawbar and coupling mechanism, running gear assembly, and lights)~~ shall be designed and constructed as an integrated~~, balanced, and durable~~ unit that is safe and suitable for its specified use ~~during the intended life of the manufactured home~~. In operation, the transportation system~~, supporting the manufactured home structure and its contents,~~ shall effectively respond to the control of the ~~braking while traveling at applicable~~ towing vehicle tracking and braking, while traveling at applicable highway speeds and in normal highway traffic conditions.	§3280.904(a) (a) General. **The transportation system shall be designed and constructed as an integrated unit which is safe and suitable for its specified use. In operation, the transportation system shall effectively respond to the control of the towing vehicle tracking and braking, while traveling at applicable highway speeds and in normal highway traffic conditions.**	§3280.904(a) (a) General. The entire system (frame, drawbar and coupling mechanism, running gear assembly, and lights) shall be designed and constructed as an integrated, balanced and durable unit which is safe and suitable for its specified use during the intended life of the manufactured home. In operation, the transportation system (supporting the manufactured home structure and its contents) shall effectively respond to the control of the braking, while traveling at applicable towing vehicle in terms of tracking and highway speeds and in normal highway traffic conditions. Note: While the majority of manufactured homes utilize a fabricated steel frame assembly, upon which the manufactured home structure is constructed, it is not the intent of this standard to limit innovation. Therefore, other concepts, such as integrating the frame function into the manufactured home structure, are acceptable provided that such design meets the intent and requirements of this part).

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
48 ROC	**1~~0~~2.4.2 System Component Requirements.** **1~~0~~2.4.2.1 Drawbar.** The drawbar shall be constructed of sufficient strength, rigidity, and durability to safely withstand those dynamic forces experienced during highway transportation. It shall be securely fastened to the manufactured home ~~frame either by a continuous weld or by bolting~~ substructure.	§3280.904(b)(1) (b) Specific requirements--(1) Drawbar. The drawbar shall be constructed of sufficient strength, rigidity and durability to safely withstand those dynamic forces experienced during highway transportation. **It shall be securely fastened to the manufactured home substructure.**	§3280.904(b)(1) (b) Specific requirements--(1) Drawbar. The drawbar shall be constructed of sufficient strength, rigidity and durability to safely withstand those dynamic forces experienced during highway transportation. It shall be securely fastened to the manufactured home frame by either a continuous weld or by bolting.
48 ROC	**1~~0~~2.4.2.2 Coupling Mechanism.** The coupling mechanism, usually of the socket type, shall be securely fastened to the drawbar in such a manner as to ensure safe and effective transfer of the maximum loads, including dynamic loads, between the manufactured home structure and the hitch-assembly of the towing vehicle. The coupling shall be equipped with a manually operated mechanism so adapted as to prevent disengagement of the unit while in operation. The coupling shall be designed so that it can be disconnected, regardless of the angle of the manufactured home to the towing vehicle. ~~With the manufactured home parked on level ground, the center of the socket of the coupler shall not be less than 20 in. (508 mm) or more than 26 in. (660 mm) from ground level.~~	§3280.904(b)(2) (2) Coupling mechanism. The coupling mechanism (which is usually of the socket type) shall be securely fastened to the drawbar in such a manner as to assure safe and effective transfer of the maximum loads, including dynamic loads, between the manufactured home structure and the hitch-assembly of the towing vehicle. The coupling shall be equipped with a manually operated mechanism so adapted as to prevent disengagement of the unit while in operation. The coupling shall be so designed that it can be disconnected regardless of the angle of the manufactured home to the towing vehicle.	§3280.904(b)(2) (2) Coupling mechanism. The coupling mechanism (which is usually of the socket type) shall be securely fastened to the drawbar in such a manner as to assure safe and effective transfer of the maximum loads, including dynamic loads, between the manufactured home structure and the hitch-assembly of the towing vehicle. The coupling shall be equipped with a manually operated mechanism so adapted as to prevent disengagement of the unit while in operation. The coupling shall be so designed that it can be disconnected regardless of the angle of the manufactured home to the towing vehicle. With the manufactured home parked on level ground, the center of the socket of the coupler shall not be less than 20 inches nor more than 26 inches from ground level.
48 ROC		§3280.904(b)(3)	§3280.904(b)(3)

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
	12~~0~~.4.2.3 Chassis. The chassis, in conjunction with the manufactured home structure, shall be ~~designed and~~ constructed to effectively sustain the designed loads ~~consisting of the dead load plus a minimum of 3 lb/ft2 (143 Pa) floor load (e.g., freestanding range, refrigerator, and loose furniture), and the superimposed dynamic load resulting from highway movement, but shall not be required to exceed twice the dead load~~. The integrated ~~design~~ structure shall be capable of ensuring the ~~rigidity and structural~~ integrity of the complete manufactured home ~~structure~~ and ensuring against excessive deformation of structural or finish members. ~~during the intended life of the home.~~	(3) Chassis. The chassis, in conjunction with the manufactured home structure, **shall be constructed to effectively sustain the designed loads. The integrated structure shall be capable of insuring the integrity of the complete manufactured home and to insure against excessive deformation of structural or finish members.**	(3) Chassis. The chassis, in conjunction with the manufactured home structure, shall be designed and constructed to effectively sustain the designed loads consisting of the dead load plus a minimum of 3 pounds per square foot floor load, (example: free-standing range, refrigerator, and loose furniture) and the superimposed dynamic load resulting from highway movement but shall not be required to exceed twice the dead load. The integrated design shall be capable of insuring rigidity and structural integrity of the complete manufactured home structure and to insure against deformation of structural or finish members during the intended life of the home.
48 ROC	**1~~0~~.4.2.4 Running Gear Assembly.**	§3280.904(b)(4)	§3280.904(b)(4)
	12~~0~~.4.2.4.1 Design Criteria ~~As part of the chassis, the running gear assembly shall be designed to perform as a balanced system in order to effectively sustain the designed loads set forth in 10.4.2.3 and to provide for durable, dependable, safe mobility of the manufactured home.~~ The design load used to size running gear components shall be the gross dead weight minus the static tongue weight supported by the drawbar. ~~It~~ Running gear shall be designed to accept shock and vibration from the highway and the towing vehicle and to effectively dampen these forces so as to protect the manufactured home structure from damage and fatigue. The components of the running gear assembly shall be designed to facilitate routine maintenance, inspection, and replacement.	(4) Running gear assembly. (i) **Design Criteria. The design load used to size running gear components shall be the gross dead weight minus the static tongue weight supported by the drawbar. Running gear** shall be designed to accept shock and vibration, both from the highway and the towing vehicle and effectively dampen these forces so as to protect the anufactured home structure from damage and fatigue. Its components shall be designed to facilitate routine maintenance, inspection and replacement.	(4) Running gear assembly. (i) The running gear assembly, as part of the chassis, shall be designed to perform, as a balanced system, in order to effectively sustain the designed loads set forth in Sec. 3280.904(b)(3) and to provide for durable dependable safe mobility of the manufactured home. It shall be designed to accept shock and vibration, both from the highway and the towing vehicle and effectively dampen these forces so as to protect the manufactured home structure from damage and fatigue. Its components shall be designed to facilitate routine maintenance, inspection and replacement.
48 ROC (cont.)	**12~~0~~.4.2.4.2 Location** Location of the running gear assembly shall be determined by documented engineering analysis, taking into account the gross weight (including all contents), total length of the manufactured home, the necessary coupling hitch weight, span distance, and turning radius. The coupling	(ii) **Location.** Location of the running gear assembly shall be determined by documented engineering analysis, taking into account the gross weight (including all contents), total length of the manufactured home, the necessary coupling hitch	(ii) Location of the running gear assembly shall be determined by documented engineering analysis, taking into account the gross weight (including all contents), total length of the manufactured home, the necessary coupling hitch

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
	weight shall be not less than 12 percent or more than 25 percent of the gross weight.	weight, span distance, and turning radius. The coupling weight shall be not less than 12 percent nor more than 25 percent of the gross weight.	weight, span distance, and turning radius. The coupling weight shall be not less than 12 percent nor more than 25 percent of the gross weight.
48 ROC	**12~~0~~.4.2.5 Spring Assemblies.** Spring assemblies (springs, hangers, shackles, bushings, and mounting bolts) shall be capable of ~~withstanding all the~~ supporting the running gear design loads~~, as outlined in 10.4.2.3,~~ without exceeding maximum allowable stresses for design spring assembly life as recommended by the spring assembly manufacturer. The capacity of the spring system shall ensure that under maximum operating load conditions sufficient clearance shall be maintained between the tire and manufactured home's ~~frame or~~ substructure to permit unimpeded wheel movement and the changing of tires.	§3280.904(b)(5) (5) Spring assemblies. Spring assemblies (springs, hangers, shackles, bushings and mounting bolts) **shall be capable of supporting the running gear design loads**, without exceeding maximum allowable stresses for design spring assembly life as recommended by the spring assembly manufacturer. The capacity of the spring system shall assure, that under maximum operating load conditions, sufficient clearance shall be maintained between the tire **and manufactured home's substructure to permit unimpeded wheel movement and for changing tires**.	§3280.904(b)(5) (5) Spring assemblies. Spring assemblies (springs, hangers, shackles, bushings and mounting bolts) shall be capable of withstanding all the design loads as outlined in Sec. 3280.**904**(b)(3) without exceeding maximum allowable stresses for design spring assembly life as recommended by the spring assembly manufacturer. The capacity of the spring system shall assure, that under maximum operating load conditions, sufficient clearance shall be maintained between the tire and manufactured home frame or structure to permit unimpeded wheel movement and for changing tires.
48 ROC	**12~~0~~.4.2.6 Axles.** Axles and their connecting hardware shall be capable of ~~withstanding all of the~~ supporting the running gear design loads ~~outlined in 10.4.2.3~~ without exceeding maximum allowable ~~stresses for~~ design axle ~~life~~ loads as recommended by the axle manufacturer. The number and load capacity necessary to provide a safe tow shall not be less than those ~~of axles~~ required to support the design load. ~~provide a safe tow and good ride characteristics shall be determined and documented by engineering analysis. Those alternatives listed in 10.3.3 shall be permitted to be accepted in place of such an analysis.~~	§3280.904(b)(6) (6) Axles. Axles, and their connecting hardware, **shall be capable of supporting the running gear design loads, without exceeding maximum allowable design axle load as recommended by the axle manufacturer. The number and load capacity necessary to provide a safe tow shall not be less than those required to support the design load.**	§3280.904(b)(6) (6) Axles. Axles, and their connecting hardware, shall be capable of withstanding all of the design loads outlined in Sec. 3280.**904**(b)(3) without exceeding maximum allowable stresses for design axle life as recommended by the axle manufacturer. The number of axles required to provide a safe tow and good ride characteristics shall be determined and documented by engineering analysis. Those alternatives listed in Sec. 3280.903(c) may be accepted in place of such an analysis.
48 ROC (cont.)	**12.4.2.6.1 Recycled Axles.** Before reuse, all axles, including all component parts, shall be reconditioned as required pursuant to a program accepted by a nationally recognized testing agency. The recycling	**§3280.904(b)(6)(i)** **Recycled Axles. Before reuse, all axles, including all component parts, shall be reconditioned as required pursuant to a program accepted by a nationally recognized testing agency. The**	**(new material not currently addressed in 3280)**

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
	program shall be approved and the axles shall be labeled by a nationally recognized testing agency. Recycled axles and their components shall utilize compatible components and be of the same size and rating as the original equipment.	**recycling program shall be approved and the axles shall be labeled by a nationally recognized testing agency. Recycled axles and their components shall utilize compatible components and be of the same size and rating as the original equipment.**	
48 ROC	**12~~0~~.4.2.8 Tires, Wheels, and Rims.** Tires, wheels, and rims shall ~~meet the requirements of 10.4.2.3. Tires shall be selected for anticipated usage.~~ be selected, sized and fitted to axles so that static dead load supported by the running gear does not exceed the load capacity of the tires. Tires shall not be loaded beyond the load rating marked on the sidewall of the tire or, in the absence of such a marking, the load rating specified in any of the publications of any of the organizations listed in FMVSS No. 119 [49 CFR 571.119, §5.1(b)]. Wheels and rims shall be sized in accordance with the tire manufacturer's recommendations as suitable for use with the tires selected.	§3280.904(b)(8) (8) Tires, wheels and rims. Tires, wheels and rims shall **be selected, sized and fitted to axles so that static dead load supported by the running gear does not exceed the load capacity of the tires. Tires shall not be loaded beyond the load rating marked on the sidewall of the tire or, in the absence of such a marking, the load rating specified in any of the publications of any of the organizations listed in FMVSS No. 119 [49 CFR 571.119, §5.1(b)]. Wheels and rims shall be sized in accordance with the tire manufacturer's recommendations as suitable for use with the tires selected.**	§3280.904(b)(8) (8) Tires, wheels and rims. Tires, wheels and rims shall meet the requirements of Sec. 3280.904(b)(3). Tires shall be selected for anticipated usage.
48 ROC (cont.)	**12.4.2.8.1 Valve Stems.** Valve stems shall be sized according to the Tire and Rim Association, Incorporated Yearbook, 2001.	**(i) Valve Stems. Valve stems shall be sized according to the Tire and Rim Association, Incorporated Yearbook, 2001.**	**(new material not currently addressed in 3280)**
	12.4.2.8.2 Inflation Pressure. The load and cold inflation pressure imposed on the rim or wheel shall not exceed the rim and wheel manufacturer's instructions even if the tire has been approved for a higher load or inflation. Tire cold inflation pressure limitations and the inflation pressure measurement correction for heat shall be as specified in 49 CFR 393.75(h).	**(ii) Inflation Pressure. The load and cold inflation pressure imposed on the rim or wheel shall not exceed the rim and wheel manufacturer's instructions even if the tire has been approved for a higher load or inflation. Tire cold inflation pressure limitations and the inflation pressure measurement correction for heat shall be as specified in 49 CFR 393.75(h).**	
	12.4.2.8.3 Used Tires. Used tires shall be permitted to be sized in accordance with 12.4.2.8 whenever the tread depth is at least 1/16in. (1.6 mm) as determined by a tread wear indicator. The determination as to	**(iii) Used Tires. Used tires shall be permitted to be sized in accordance with 12.4.2.8 whenever the tread depth is at least 1/16 in. (1.6 mm) as determined by a tread wear indicator. The**	

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
	by a tread wear indicator. The determination as to whether a particular used tire is acceptable shall also include a visual inspection for thermal and structural defects (e.g., dry rotting, excessive tire sidewall splitting, etc.).	**determination as to whether a particular used tire is acceptable shall also include a visual inspection for thermal and structural defects (e.g., dry rotting, excessive tire sidewall splitting, etc.).**	
48 ROC (cont.)	**12~~0~~.4.2.9 Brake Assemblies.**	§3280.904(b)(9)(i)	§3280.904(b)(9)(i)
	12~~0~~.4.2.9.1 Braking Axles. The number, type, size, and design of brake assemblies required to assist the towing vehicle in providing effective control and stopping of the manufactured home shall be determined and documented by engineering analysis. Those alternatives listed in ~~10.3.3~~ 12.4.2.9.2 shall be permitted in place of such an analysis. Unless substantiated in the design to the satisfaction of the approval agency by either engineering analysis in accordance with 12.3.2 or tests in accordance with 12.4.2.9.2, there shall be a minimum of two axles equipped with brake assemblies on each manufactured home transportable section.	(9) Brake assemblies. (i) **Braking Axles.** The number, type, size and design of brake assemblies required to assist the towing vehicle in providing effective control and stopping of the manufactured home shall be determined and documented by engineering analysis. Those alternatives listed in Sec. 3280.903(c) may be accepted in place of such an analysis. **Unless substantiated in the design to the satisfaction of the approval agency by either engineering analysis in accordance with §3280.903(a)(1) or tests in accordance with §3280.904(b)(9)(ii), there shall be a minimum of two axles equipped with brake assemblies on each manufactured home transportable section.**	(9) Brake assemblies. (i) The number, type, size and design of brake assemblies required to assist the towing vehicle in providing effective control and stopping of the manufactured home shall be determined and documented by engineering analysis. Those alternatives listed in Sec. 3280.903(c) may be accepted in place of such an analysis.
	12~~0~~.4.2.9.2 Stopping Distance. Brakes on the towing vehicle and the manufactured home (a drive-away/tow-away operation) shall be capable of ensuring that the maximum stopping distance from an initial ~~velocity~~ speed of 20 mph (32 km/h) does not exceed 35 ft (10.7 m) ~~40 ft (12.2 m)~~ (U.S. Department of Transportation Regulations).	(ii) **Stopping Distance.** Brakes on the towing vehicle and the manufactured home **(a drive-away/tow-away)** shall be capable of assuring that the maximum stopping distance from an initial **speed** of 20 miles per hour **does not exceed 35 feet** (U.S. Department of Transportation Regulations).	(ii) Brakes on the towing vehicle and the manufactured home shall be capable of assuring that the maximum stopping distance from an initial velocity of 20 miles per hour does not exceed 40 feet (U.S. Department of Transportation Regulations).
48 ROC (cont.)	**12.4.2.9.3 Electrical Brake Wiring.** Brake wiring shall be installed to provide sufficient operating voltage for each brake. The voltage available at the brakes shall not be less than the value specified in the brake manufacturer's instructions. Aluminum wire, when used, shall be provided with suitable termination that is protected against corrosion.	**(iii) Electrical Brake Wiring. Brake wiring shall be installed to provide sufficient operating voltage for each brake. The voltage available at the brakes shall not be less than the value specified in the brake manufacturer's instructions. Aluminum wire, when used, shall be provided with suitable termination that is protected against corrosion.**	

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
48 ROC	**12~~0~~.4.2.10 Lamps ~~Lights~~ and Associated Wiring.** ~~Highway safety electrical lights and associated wiring shall conform to applicable federal requirements in terms of location and performance. The manufacturer shall have the option of meeting this requirement by utilizing a temporary light/wiring harness provided by the manufactured home transportation carrier.~~ Stop lamps, turn signal/lamps, and associated wiring shall meet the appropriate sections of the Federal Motor Vehicle Safety Standard (FMVSS) No. 108, which specify the performance and location of these lamps and their wiring. The manufacturer shall have the option of meeting these requirements by utilizing a temporary light/wiring harness, which has components that meet the FMVSS No. 108. The temporary harness shall be permitted to be provided by the manufactured home transportation carrier.	§3280.904(b)(10) (10) **Lamps and associated wiring. Stop lamps, turn signal/lamps, and associated wiring shall meet the appropriate sections of the Federal Motor Vehicle Safety Standard (FMVSS) No. 108, which specify the performance and location of these lamps and their wiring. The manufacturer shall have the option of meeting these requirements by utilizing a temporary light/wiring harness, which has components that meet the FMVSS No. 108. The temporary harness shall be permitted to be provided by the manufactured home transportation carrier.**	§3280.904(b)(10) (10) Lights and associated wiring. Highway safety electrical lights and associated wiring shall conform to applicable Federal requirements in terms of location and performance. The manufacturer shall have the option of meeting this requirement by utilizing a temporary light/wiring harness provided by the manufactured home transportation carrier.
103 ROP **(NEW)**	**Chapter 13 Special Construction Consideration** **13.1 Scope.** This chapter shall set forth the requirements for single-family attached dwellings and other related construction associated with manufactured homes not addressed within this document. **13.2 Definitions.** The following definitions shall be applicable to Chapter 13 only.	**Subpart H – Special Construction Consideration** **§3280.1001 Scope.** **This chapter shall set forth the requirements for single-family attached dwellings and other related construction associated with manufactured homes not addressed within this document.** **§3280.1002 Definitions.** **The following definitions shall be applicable to**	**(new material not currently addressed in 3280)**

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
103 ROP **(NEW)** (cont.)	**13.2.1 Common Wall.** A wall of a single-family attached dwelling unit which is structurally independent of a wall of another single-family attached dwelling unit with a fire separation distance of less than 3 ft (0.91 m). **13.2.2 Single-Family Attached Dwelling.** A single-family dwelling unit constructed in a group of two or more attached units in which each unit is structurally independent from foundation to roof and with open space on at least two sides. Adjacent units are structurally independent but with the appearance of a physical connection (i.e., zero lot line). **13.3 Dwelling Unit Separation.** **13.3.1** Single-family attached dwelling units shall be separated from each other by a common wall of not less than 1-hour fire-resistive rating when tested in accordance with ASTM E 119, *Standard Test Method for Fire Tests of Building Construction and Materials*. Fire resistance rated common wall assemblies shall extend to the underside of the roof sheathing. **13.3.2 Fire Separation Penetrations.** **13.3.2.1** Fire rated common walls shall not contain through penetrations or openings. **13.3.2.2** Membrane penetrations for electrical boxes shall be permitted provided the following. (1) Steel electrical boxes not exceeding 16 in.2 (0.01 m2) may be installed provided that the total area of such boxes does not exceed 100 in.2 (0.06 m2). Steel electrical boxes in adjacent common walls shall be separated by a horizontal distance of not less than	**Subpart H only.** **(a) Common Wall. A wall of a single-family attached dwelling unit which is structurally independent of a wall of another single-family attached dwelling unit with a fire separation distance of less than 3 ft (0.91 m).** **(b) Single-Family Attached Dwelling. A single-family dwelling unit constructed in a group of two or more attached units in which each unit is structurally independent from foundation to roof and with open space on at least two sides. Adjacent units are structurally independent but with the appearance of a physical connection (i.e., zero lot line).** **§3280.1003 Dwelling Unit Separation.** **(a) Single-family attached dwelling units shall be separated from each other by a common wall of not less than 1-hour fire-resistive rating when tested in accordance with ASTM E 119, *Standard Test Method for Fire Tests of Building Construction and Materials*. Fire resistance rated common wall assemblies shall extend to the underside of the roof sheathing.** **(b) Fire Separation Penetrations.** **(1) Fire rated common walls shall not contain through penetrations or openings.** **(2) Membrane penetrations for electrical boxes shall be permitted provided the following:** **(i) Steel electrical boxes not exceeding 16 in.2 (0.01 m2) may be installed provided that the total area of such boxes does not exceed 100 in.2 (0.06 m2). Steel electrical boxes in adjacent common walls shall be separated by a horizontal distance**	

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
103 ROP **(NEW)** (cont.)	24 in. (610 mm). (2) Listed 2-hour fire-resistant nonmetallic electrical boxes are installed in accordance with the listings. (3) No other membrane penetrations are allowed. **13.3.3** The common walls for single-family attached dwelling units shall be continuous from the foundation to the underside of the roof sheathing, deck, or slab and shall extend the full length of the common walls. **13.3.4 Parapets.** **13.3.4.1** Parapets constructed in accordance with 13.3.4.2 shall be provided for single-family attached dwelling units as an extension of common walls in accordance with the following. **13.3.4.1.1** Where roof surfaces adjacent to the common walls are at the same elevation, the parapet shall extend not less than 30 in. (762 mm) above the roof surfaces. **13.3.4.1.2** Where roof surfaces adjacent to the wall or walls are at a different elevations and the higher roof is not more than 30 in. (762 mm) above the lower roof surface, the parapet shall extend not less than 30 in. (762 mm) above the lower roof surface. **13.3.4.1.2.1** Parapets shall be provided except as noted by the following: (1) Roofs covered with a Class C roof covering under one of the following conditions: (a) when the roof is covered with a minimum Class C roof covering, and the roof decking or sheathing is of noncombustible materials or approved fire-retardant-treated wood for a distance of 4 ft (1.2 m) on each side of the common walls; (b) one layer of -in. (16-mm)	**of not less than 24 in. (610 mm).** **(ii) Listed 2-hour fire-resistant nonmetallic electrical boxes are installed in accordance with the listings.** **(iii) No other membrane penetrations are allowed.** **(c) The common walls for single-family attached dwelling units shall be continuous from the foundation to the underside of the roof sheathing, deck, or slab and shall extend the full length of the common walls.** **(d) Parapets.** **(1) Parapets constructed in accordance with §3280.1003(d)(2) shall be provided for single-family attached dwelling units as an extension of common walls in accordance with the following.** **(i) Where roof surfaces adjacent to the common walls are at the same elevation, the parapet shall extend not less than 30 in. (762 mm) above the roof surfaces.** **(ii) Where roof surfaces adjacent to the wall or walls are at a different elevations and the higher roof is not more than 30 in. (762 mm) above the lower roof surface, the parapet shall extend not less than 30 in. (762 mm) above the lower roof surface.** **(A) Parapets shall be provided except as noted by the following: (1) Roofs covered with a Class C roof covering under one of the following conditions: (a) when the roof is covered with a minimum Class C roof covering, and the roof decking or sheathing is of noncombustible materials or approved fire-retardant-treated wood for a distance of 4 ft (1.2 m) on each side of**	

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
103 ROP **(NEW)** (cont.)	Type X gypsum board is installed directly beneath the roof decking or sheathing for a distance of 4 ft (1.2 m) on each side of the common walls. **13.3.4.1.2.2** A parapet shall not be required where roof surfaces adjacent to the common walls are at different elevations and the higher roof is more than 30 in. (762 mm) above the lower roof. The common wall construction from the lower roof to the underside of the higher roof deck shall not have less than a 1-hour fire-resistive rating. The wall shall be rated for exposure from both sides. **13.3.4.2 Parapet Construction.** Parapets shall have the same fire resistance rating as that required for the supporting wall or walls. On any side adjacent to a roof surface, the parapet shall have noncombustible faces for the uppermost 18 in. (457 mm), to include counter flashing and coping materials. Where the roof slopes toward a parapet at slopes greater than two units vertical in 12 units horizontal (16.7 percent slope), the parapet shall extend to the same height as any portion of the roof within a distance of 3 ft (0.91 m), but in no case shall the height be less than 30 in. (762 mm). **13.4 Exterior Walls.** **13.4.1*** The requirements of 8.4.2 for condensation control and 8.4.3 for vapor retarder installation shall apply to the common wall on each single-family attached dwelling unit. **13.4.2*** The requirements of Section 8.6 for heat loss/gain insulation shall apply to the common wall on each single-family attached dwelling unit.	**the common walls; (b) one layer of -in. (16-mm) Type X gypsum board is installed directly beneath the roof decking or sheathing for a distance of 4 ft (1.2 m) on each side of the common walls.** **(B) A parapet shall not be required where roof surfaces adjacent to the common walls are at different elevations and the higher roof is more than 30 in. (762 mm) above the lower roof. The common wall construction from the lower roof to the underside of the higher roof deck shall not have less than a 1-hour fire-resistive rating. The wall shall be rated for exposure from both sides.** **(2) Parapet Construction. Parapets shall have the same fire resistance rating as that required for the supporting wall or walls. On any side adjacent to a roof surface, the parapet shall have noncombustible faces for the uppermost 18 in. (457 mm), to include counter flashing and coping materials. Where the roof slopes toward a parapet at slopes greater than two units vertical in 12 units horizontal (16.7 percent slope), the parapet shall extend to the same height as any portion of the roof within a distance of 3 ft (0.91 m), but in no case shall the height be less than 30 in. (762 mm).** **§3280.1004 Exterior Walls.** **(a) The requirements of 8.4.2 for condensation control and 8.4.3 for vapor retarder installation shall apply to the common wall on each single-family attached dwelling unit.** **(b) The requirements of Section 8.6 for heat loss/gain insulation shall apply to the common wall on each single-family attached dwelling unit.**	

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
	13.5 Electrical Service. **13.5.1** A dwelling unit shall be supplied by only one service. **13.5.2** Service conductors supplying one dwelling unit shall not pass through the interior of another dwelling unit. **13.6 Water Service.** **13.6.1** Each dwelling unit shall have an individual water supply that will service only that unit. **13.6.2** Each dwelling unit shall have a hot water supply system that will service only that unit.	**§3280.1005 Electrical Service.** **(a) A dwelling unit shall be supplied by only one service.** **(b) Service conductors supplying one dwelling unit shall not pass through the interior of another dwelling unit.** **§3280.1006 Water Service.** **13.6.1 Each dwelling unit shall have an individual water supply that will service only that unit.** **13.6.2 Each dwelling unit shall have a hot water supply system that will service only that unit.**	
21 ROC	**Chapter 14~~1~~ Referenced Publications** **14~~1~~.1.2 Other Publications.** ~~**11.1.2.1 AA Publications.** Aluminum Association, 900 19th Street NW, Suite 300, Washington, DC 20006.~~ ~~AA-30, Specification for Aluminum Structures Construction Manual Series, Section 1, fifth edition, 1986.~~ ~~Specifications and Guidelines for Aluminum Structures, Aluminum Design Manual, 1994.~~ **14~~1~~.1.2.1~~2~~ AAMA Publications.**	§3280.403	§3280.4 AA--Aluminum Association, 900 19th Street NW., suite 300, Washington, DC 20006. §3280.304 Specification for Aluminum Structures Construction Manual Series--Section 1, Fifth Edition--1986, The Aluminum Association. Specification for Structural Steel Buildings--Allowable Stress Design and Plastic Design--AISC--June 1, 1989. §3280.403

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
	AAMA 1701.2, Primary Window and Sliding Glass Door: Voluntary Standard for Utilization in Manufactured Housing, ~~1995~~ 2000 edition. AAMA 1702.2, Swinging Exterior Passage Doors: Voluntary Standard for Utilization in Manufactured Housing, ~~1995~~ 1985 edition. AAMA 1704, Voluntary Standard: Egress Window Systems for Utilization in Manufactured Housing, ~~1985~~ 2001 edition.	AAMA Standard 1701.2-**2000**, Primary Window and Sliding Glass Door Voluntary Standard for Utilization in Manufactured Housing AAMA 1702.2-1985, Swinging Exterior Passage Doors Voluntary Standard for Utilization in Manufactured--Housing. AAMA Standard 1704-**2001**, Voluntary Standard Egress Window Systems for Utilization in Manufactured—Housing	AAMA Standard 1701.2-1985, Primary Window and Sliding Glass Door Voluntary Standard for Utilization in Manufactured Housing AAMA 1702.2-1985, Swinging Exterior Passage Doors Voluntary Standard for Utilization in Manufactured--Housing. AAMA Standard 1704-1985, Voluntary Standard Egress Window Systems for Utilization in Manufactured—Housing
	1~~4~~1.1.2.2~~3~~ AFPA Publications. ~~National Design Specifications for Wood Construction, 1997.~~		§3280.304
	AFPA T05, Wood Structural Design Data, 1986~~9~~, Revised 1992. ~~AFPA PS-20-70, Span Tables for Joists and Rafters, 1993.~~ AFPA T03, ~~Design Values~~ Span Tables for Joists and Rafters, ~~American Softwood Lumber Standard Sizes,~~ 1993.	**AFPA T05,** Wood Structural Design Data, 1986 Edition With 1992 Revisions, AFPA. **AFPA T03, Span Tables** for Joists and Rafters, **1993**, AFPA.	Wood Structural Design Data, 1986 Edition With 1992 Revisions, AFPA. Span Tables for Joists and Rafters--PS-20-70, 1993, AFPA. Design Values for Joists and Rafters, American Softwood Lumber Standard Sizes, 1992, AFPA.
21 ROC (cont.)	AFPA T101-97, Allowable Stress Design (ASD) Manual ~~National Design Specifications~~ for Engineered Wood Construction including the National Design Specifications for Wood Construction, ~~with supplement,~~ and Design Values for Wood Construction, 1997~~1~~ edition.	**AFPA T101-97, Allowable Stress Design (ASD) Manual for Engineered Wood Construction including the National Design Specifications for Wood Construction, and Design Values for Wood Construction, 1997 edition.**	National Design Specifications for Wood Construction, 1991 Edition, With Supplement, Design Values for Wood Construction, AFPA.
	1~~4~~1.1.2.3~~4~~ AHA Publications. ANSI/AHA A 135.4, Basic Hardboard, 1995. ANSI/AHA A 135.5, Prefinished Hardboard Paneling, 1995. ANSI/AHA A 135.6, Hardboard Siding, 1998.	Basic Hardboard--ANSI/AHA A135.4-**1995.** Prefinished Hardboard Paneling--ANSI/AHA A135.5-**1995.** Hardboard Siding--ANSI/AHA A135.6-**1998.**	Basic Hardboard--ANSI/AHA A135.4-1982. Prefinished Hardboard Paneling--ANSI/AHA A135.5-1988. Hardboard Siding--ANSI/AHA A135.6-1990.
	1~~4~~1.1.2.4~~5~~ AISC Publication. AISC-ASD ~~S335~~, Specification for Structural Steel Buildings, Allowable Stress Design and Plastic Design, 1989.	Specification for Structural Steel Buildings--Allowable Stress Design and Plastic Design—AISC-**ASD**, 1989.	Specification for Structural Steel Buildings--Allowable Stress Design and Plastic Design--AISC--June 1, 1989.
	1~~4~~1.1.2.5~~6~~ AISI Publications.		

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
21 ROC (cont.)	AISI-SG 673, ~~Specification for the Design of Cold-Formed Steel Structural Members~~ Cold-formed Steel Design Manual, 1986 edition with 1989 addendum.	**Cold-Formed Steel Design Manual—AISI-SG 673**--1986 Edition With 1989 Addendum.	Specification for the Design of Cold-Formed Steel Structural Members--AISI--1986 Edition With 1989 Addendum.
	~~**11.1.2.7 AITC Publication.**~~ ~~American Institute of Timber Construction, 7012 S. Revere Pkwy., Suite 140, Englewood, CO 80112.~~		§3280.4 AITC--American Institute of Timber Construction, 11818 SE Mill Plain Blvd., suite 415, Vancouver, Washington 98684
	~~AITC A 190.1, Wood Products — Structural Glued Laminated Timber, 1992.~~		§3280.304 For wood products--Structural Glued Laminated Timber--ANSI/AITC A190.1-1992.
	1~~4~~1.1.2.6~~8~~ **ANSI Publications.** ~~ANSI A 135.4, Basic Hardboard, 1995.~~ ~~ANSI A 135.5, Prefinished Hardboard Paneling, 1995.~~ ~~ANSI A 135.6, Hardboard Siding, 1990.~~	(no change needed)	(current standards are under sec. 304 as ANSI/AHA standards)
	1~~4~~1.1.2.7~~9~~ **APA Publications.** APA-PRP~~-E-~~108~~Q~~, Performance Standards and Policies for Structural Use Panels, 1997~~1995~~.	Performance Standards and Policies for Structural Use Panels--**APA-PRP 108Q, 1997**.	Performance Standards and Policies for Structural Use Panels--APA-PRP-E-108P, E445N-1989.
	~~APA PS-1-95, Voluntary Product Standard, Construction and Industrial Plywood, V99, 1995.~~		Voluntary Product Standard, Construction and Industrial Plywood--PS-1-83.
	~~APA PS-2-96, Performance Standard for Wood-Based Structural Use Panels, 1996.~~		Performance Standard for Wood-Based Structural Use Panels--PS-2-92, APA
	APA-S 812R~~Q~~, Design and Fabrication of Glued Plywood-Lumber Beams, Supp. 2, 1998~~1996~~.	Design and Fabrication of Glued Plywood-Lumber Beams, Suppl. 2--**APA-S 812R-1998.**	Design and Fabrication of Glued Plywood-Lumber Beams, Suppl. 2--APA-S 812P-1992.
	~~APA-S 811N, Design and Fabrication of Plywood Curved Panels, Supp. 1, 1995.~~		Design and Fabrication of Plywood Curved Panels, Suppl. 1--APA-S 811M-1990.
	APA-Y 510T~~S~~, Plywood Design Specification, 1999~~1997~~.	Plywood Design Specification--**APA-Y 510T-1999**.	Plywood Design Specification--APA-Y 510Q-1993.
	1~~4~~1.1.2.8~~10~~ **ARI Publication.** ARI 210/240, Unitary Air-Conditioning and Air-Source Heat Pump Equipment, 1994~~1989~~.	Unitary Air-Conditioning and Air-Source Heat Pump Equipment--**ANSI/ARI 210/240-94.** §3280.4	§3280.703 Unitary Air-Conditioning and Air-Source Heat Pump Equipment--ANSI/ARI 210/240-89.

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
21 ROC (cont.)	**14.1.2.9 ARMA Publication.** Asphalt Roofing Manufacturers Association, 1156 15th Street, NW, Suite 900, Washington, DC 20005. Residential Asphalt Roofing Manual, 1997. **14~~1~~.1.2.10~~1~~ ASCE Publications.** ~~ASCE 8, Design of Cold-Formed Stainless Steel Structural Members, 1991.~~ ~~ASCE 19, Structural Applications of Steel Cables for Buildings, 1996.~~ **14~~1~~.1.2.14~~5~~ ASTM Publications.** ASTM C 36, Standard Specification for Gypsum Wallboard, 2001~~B-95~~. ~~ASTM D 781, Standard Test Methods for Puncture and Stiffness of Paperboard, and Corrugated and Solid Fiberboard, 1973.~~ ASTM D 3953, Standard Specification for Strapping, Flat Steel, and Seals, 1997~~1991~~. ASTM D 4442, Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials, 1997~~1992~~. ASTM D 4444, Standard Test Methods for Use and Calibration of Hand-Held Moisture Meters, 1998~~1992~~. ASTM E 773, Standards Test Method for Accelerated Weathering of Sealed Insulating Glass Units, 2001. ~~Standard Test Methods for Seal Durability of Sealed Insulating Glass Units, 1988.~~ ASTM E 774, Standard Specification for the Classification of the Durability of Sealed Insulating Glass Units, 1997. ~~Standard Specification for Sealed Insulating Glass Units, 1992.~~ **14~~1~~.1.2.18~~9~~ HPVA Publication.** ANSI/HPVA HP-1-2000, ~~Interim~~ American National Standard for Hardwood and Decorative	**ARMA Publication. Asphalt Roofing Manufacturers Association, 1156 15th Street, NW, Suite 900, Washington, DC 20005.** §3280.304 Other **Residential Asphalt Roofing Manual, 1997.** Standard Specification for Gypsum Wallboard--ASTM C36-**01.** Standard Specification for Strapping, Flat Steel and Seals--ASTM D3953-**97.** Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials--ASTM D4442-**97.** Standard Test Methods for Use and Calibration of Hand-Held Moisture Meters--ASTM D4444-**98.** ASTM E-773-**01,** Standards Test Method for **Accelerated Weathering of** Sealed Insulating Glass Units ASTM E-774-**97**, Standard Specification for **the Classification and Durability of** Sealed Insulating Glass Units **American National Standard for Hardwood and Decorative Plywood—ANSI/HPVA HP-1-2000.**	**(new material not currently addressed in 3280)** Stainless Steel Cold-Formed Structural Design Manual--AISI-1974. Manual for Structural Applications of Steel Cables for Buildings--AISI-1973. Standard Specification for Gypsum Wallboard--ASTM C36-93. Standard Test Methods for Puncture and Stiffness of Paperboard, and Corrugated and Solid Fiberboard--ASTM D781-68 (73). Standard Specification for Strapping, Flat Steel and Seals--ASTM D3953-91. Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials--ASTM D4442. Standard Test Methods for Use and Calibration of Hand-Held Moisture Meters--ASTM D4444-92. §3280.403 ASTM E-773-88 Standard Test Methods for Seal Durability of Sealed Insulating Glass Units ASTM E-774-92, Standard Specification for Sealed Insulating Glass Units §3280.304 Interim Voluntary Standard for Hardwood and Decorative Plywood--HPVA Interim Standard HP-

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
21 ROC (cont.)	Plywood, 2000 ~~HP-1, Interim Voluntary Standard for Hardwood and Decorative Plywood, 1994.~~ HPVA HP-SG-96, Structural Design Guide for Hardwood Plywood, 1996.	**HPVA HP-SG-96, Structural Design Guide for Hardwood Plywood, 1996.**	1-1993.
	~~**11.1.2.20 HUD-FHA Publication.** Department of Housing and Urban Development, 451 Seventh Street SW, Washington, DC 20410.~~		§3280.4 HUD-FHA--Department of Housing and Urban Development, 451 Seventh Street, SW., Washington, DC 20410
	~~UM 25d, Application and Fastening Schedule: Power-Driven, Mechanically Driven and Manually Driven Fasteners — HUD-FHA Use of Materials Bulletin, 1973.~~		§3280.304 Application and Fastening Schedule: Power-Driven, Mechanically Driven and Manually Driven Fasteners--HUD-FHA Use of Materials Bulletin--UM-25d-73.
	14.1.2.23 National Evaluation Services Publication. 5203 Leesburg Pike, Suite 600, Falls Church, VA 22041.	§3280.4 **National Evaluation Services Publication. 5203 Leesburg Pike, Suite 600, Falls Church, VA 22041.**	
	NER-272, Power-Driven Staples and Nails for Use in All Types of Building Construction, 1997.	§3280.304 Fasteners **NER-272, Power-Driven Staples and Nails for Use in All Types of Building Construction, 1997.**	
	~~**11.1.2.31 SJI Publication.** Steel Joist Institute, 1205 48th Avenue North, Suite A, Myrtle Beach, SC 29577.~~		§3280.4 SJI--Steel Joist Institute, 1205 48th Avenue North, suite A, Myrtle Beach, SC 29577
	~~SJI, Standard Specifications Load Tables and Weight Tables for Steel Joists and Joist Girders, 40th edition.~~		§3280.304 Standard Specifications Load Tables and Weight Tables for Steel Joists and Joist Girders, only Sections 1-6 and the table for ``H series only'' are applicable--Steel Joist Institute 1992.
	14~~1~~.1.2.32 TPI Publication. TPI-95, ~~Design~~ Specifications for Metal Plate Connected Wood Trusses, 1990.	**Specifications for Metal Plate Connected Wood Trusses--TPI-95, 1990.**	Design Specifications for Metal Plate Connected Wood Trusses--TPI-85.
	14~~1~~.1.2.34 U.S. Government Publications. USDOC PS-1-95, Construction and Industrial	**USDOC PS-1-95, Construction and Industrial**	Voluntary Product Standard, Construction and

Ref.	NFPA 501, 2003 Edition References (with changes from 2000 ed.)	24 CFR 3280 references shown with changes taken from NFPA 501-03	Current Wording of 24 CFR 3280
	Plywood, 1995. USDOC PS-2-92, Performance Standard for Wood-Based Structural Use Panels, 1992. USDOC PS-20-99, American Softwood Lumber Standard, 1999.	**Plywood, 1995.** **USDOC PS-2-92, Performance Standard for Wood-Based Structural Use Panels, 1992.** **USDOC PS-20-99, American Softwood Lumber Standard, 1999.**	Industrial Plywood--PS-1-83. Performance Standard for Wood-Based Structural Use Panels --PS-2-92, Span Tables for Joists and Rafters— PS–20–70, 1993, AFPA.

The following information is the activity of the NFPA Manufactured Homes Technical Committees for the revisions done for the 2003 edition of NFPA 501 as compared to the current 24 CFR 3280 document.

From left to right: The 1st column (Ref.) corresponds with the supporting material that includes the November 2002 Report on Proposals (ROP) and Report on Comments (ROC). The 2nd column reflects the text of the 2003 edition of NFPA 501 with changes shown from the 2000 edition text. The 3rd column of the chart reflects the proposed changes to 24 CFR 3280 with changed areas highlighted. The 4th column shows the current wording of 24 CFR 3280 (1999 version). Those sections that are underlined, strikethrough, or italicized are provided to assist the user in identifying that text which may have been revised.