Manufactured Housing Consensus Committee

Letter Ballot for MHCC - #2
Vote on the proposed changes to the
Comparison between **NFPA 501 (2000 edition)** and 24 CFR 3280 (1999 edition)

AFTER VOTING, RETURN ONE COPY OF BALLOT TO NFPA
1 BATTERYMARCH PARK, QUINCY, MA 02269, OR FAX TO (617)984-7110

Must be received by NFPA
By: February 6, 2003

Committee Action:
A = Accept

Send ballot to: Jill McGovern
jmcgovern@nfpa.org

Negative votes or abstentions must be accompanied with reasons for so voting. Please make comments on a separate sheet. If handwritten, please use black ink only. If voting Affirmative on all items, only return this page to NFPA.

With respect to the Committee Actions on the proposed changes that accompanied this ballot, please record me as voting:

☐ Affirmative on all items, or

☐ Affirmative except as indicated below

Date: _____ Signed: _____

Name: _____
Type or Print in black ink

Proposed Change Number	24 CFR 3280 Referenced Section	Comm Action	Vote: Affirm With Comment	Vote: Neg*	Vote: Abstain*
1 ROP	3280.4	A			
2 ROP	103	A			
3 ROC	105(a)(2)(iv)	A			
4 ROP/ROC	105(b)(2)	A			
5 ROP	111	A			
6 ROP/ROC	113	A			
7 ROP/ROC	206	A			
8 ROP/ROC	207 **NEW**	A			

* Reasons must accompany these votes

Proposed Change Number	24 CFR 3280 Referenced Section	Comm Action	Affirm With Comment	Neg*	Abstain*
9 ROP/ROC	208	A			
10 ROP	210(b) **NEW**	A			
11 ROP	210(e) **NEW**	A			
12 ROP	210(f) **NEW**	A			
13 ROP	301	A			
14 ROP	303(g)(1) and (2) **NEW**	A			
15 ROP	304(b)(1) **NEW**	A			
16 ROP/ROC	304(b)(1) **NEW**	A			
17 ROP	304(b)(1)	A			
18 ROP	305(c)(1)(i)	A			
19 ROP/ROC	305(c)(2)(iv)	A			
20 ROP	305(c)(2)(ii)(B) item #9 Table footnote **NEW**	A			
21 ROP	305(c)(3)	A			
22 ROP	305(c)(3)(ii)	A			
23 ROP	305(c)(3)(iv)	A			
24 ROP	305(e)(1)	A			
25 ROP	305(g)(1)	A			
26 ROP	305(g)(3) **NEW**	A			
27 ROP	306(b)	A			
28 ROP/ROC	306(d)	A			
29 ROP	308(a)(2)	A			
30 ROP	308(a)(3) **NEW**	A			

*Reasons must accompany these votes

Proposed Change Number	24 CFR 3280 Referenced Section	Comm Action	Affirm With Comment	Neg*	Abstain*
31 ROP	308(a)(4) **NEW**	A			
32 ROP	309	A			
33 ROP	401(a)	A			
34 ROP	401(b)	A			
35 ROP/ROC	402	A			
36 ROP/ROC	403	A			
37 ROP	404(c)(2)	A			
38 ROP	503	A			
39 ROP	504(c) **NEW**	A			
40 ROP/ROC	504(b)	A			
41 ROP	504(c)(1)(i)	A			
42 ROP	505(a)	A			
43 ROP	506(c)	A			
44 ROC	508(a) and (b)	A			
45 ROP	507(c)	A			
46 ROP	507 (e)	A			
47 ROP	509(c)	A			
48 ROP	510	A			
49 ROP	510(b)	A			
50 ROP	510(c)	A			
51 ROC	510	A			
52 ROP/ROC	511(a)(1)	A			

*Reasons must accompany these votes

Proposed Change Number	24 CFR 3280 Referenced Section	Comm Action	Affirm With Comment	Neg*	Abstain*
53 ROP	511(a)(2)	A			
54 ROP/ROC	602	A			
55 ROP/ROC	603(b)(4)(ii)	A			
56 ROP/ROC	604(b) Miscellaneous **NEW**	A			
57 ROP	606(a)(2)	A			
58 ROP	607(a)(3)	A			
59 ROP/ROC	607(b)(5)(ii)	A			
60 ROP	607(b)(2)(iii) **NEW** 607(a)(6) **NEW** 604(a) **NEW**	A			
61 ROP	610(b)(1)	A			
62 ROC	610(e)(1)	A			
63 ROP	611(b)(1)	A			
64 ROP/ROC	611(d)	A			
65 ROP/ROC	611(f)(1)	A			
66 ROP	702(a) Class 2 Air Ducts	A			
67 ROP	702(a) **NEW**	A			
68 ROP/ROC	702(a) **NEW**	A			
69 ROP	702(a) Energy Efficiency Ratio (EER)	A			
70 ROP/ROC	702(a) Heating Appliance	A			
71 ROP	702(a) Water Heater	A			
72 ROP	703	A			
73 ROP	703(a)	A			

*Reasons must accompany these votes

Proposed Change Number	24 CFR 3280 Referenced Section	Comm Action	Affirm With Comment	Neg*	Abstain*
74 ROP	703 (a) **NEW**	A			
75 ROP	704(a) through (c)	A			
76 ROP	705(b)(4) **NEW**	A			
77 ROP	705(d) Table (**NEW** section for Corrugated Stainless Steel Tubing)	A			
78 ROP/ROC	705(h)	A			
79 ROP	706(j)	A			
80 ROP	707(a)(2)	A			
81 ROP	707(d)	A			
82 ROP	709(h) **NEW**	A			
83 ROP	711	A			
84 ROP	713(a)(1)(i)	A			
85 ROP	713(a)(1)(ii)	A			
86 ROP/ROC	715(a)(1)	A			
87 ROP	715(a)(2) **NEW text**	A			
88 ROP	715(a)(4)	A			
89 ROP	715(a)(5)(ii)	A			
90 ROP	715(a)(6)	A			
91 ROP	715(a)(7)	A			
92 ROP/ROC	715(c)	A			
93 ROP	715(d)	A			
94 ROP	715(d)(1) **NEW**	A			
95a ROP	801(e)	A			

*Reasons must accompany these votes

Proposed Change Number	24 CFR 3280 Referenced Section	Comm Action	Affirm With Comment	Neg*	Abstain*
95b ROP	802(a)(37)	A			
95c ROP	802(a)(39)	A			
95d ROP	803(d)	A			
95e ROP	803(f)	A			
95f ROP	803(i)	A			
95g ROP	803(k)	A			
95h ROP	804(a)	A			
95i ROP	804(c)	A			
95j ROP	804(e)	A			
95k ROC	804(f)	A			
95l ROP/ROC	804(j)	A			
95m ROP	805(a)(2)	A			
95n ROP	805(a)(3)	A			
95o ROP/ROC	806(d)(9)	A			
95p ROP	806(f)	A			
95q ROP	807(a)	A			
95r ROP	808(f)(1)	A			
95s ROP	808(i)	A			
95t ROP	808(l)	A			
95u ROP	808(o)	A			
95v ROP	808(p)(2)	A			
95w ROP	811	A			

*Reasons must accompany these votes

Proposed Change Number	24 CFR 3280 Referenced Section	Comm Action	Affirm With Comment	Neg*	Abstain*
95x ROP	811(a)(6)	A			
95y ROP	815(a)	A			
96 ROP	901	A			
97a ROP/ROC	304/305/403	A			
97b ROP	203/207	A			
97c ROC	604 and **NEW** material	A			
97d ROP	504/508/604/703/704/707/715	A			
97e ROP/ROC	3280, Subpart I	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 2000 edition of NFPA 501 as compared to the current 24 CFR 3280 document.

This center column of the chart reflects these changes and have been highlighted in bold. In certain cases the chart has a section that has been bolded in its entirety because of the significant amount of revisions to that particular section. Those sections that are underlined, strikethrough, or italicized are provided to assist the user in identifying that text which may have been revised.

The reference column corresponds with the supporting material that includes the May 2000 Report on Proposals (ROP) and Report on Comments (ROC).

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
1 ROP	1-4 Incorporation by Reference. The specifications, standards, and codes of the following organizations are incorporated by reference. Reference standards shall have the same force and effect as this standard. Where two or more referenced standards are equivalent in application, the manufacturer shall have the option to incorporate into the manufactured home design and construction the referenced standard of their choosing. Exception: When reference standards and this standard are inconsistent, the requirements of this standard shall prevail to the extent of the inconsistency.	3280.4 Incorporation by Reference. (a) The specifications, standards, and codes of the following organizations are incorporated by reference. Reference standards shall have the same force and effect as this standard. **Where two or more referenced standards are equivalent in application, the manufacturer shall have the option to incorporate into the manufactured home design and construction the referenced standard of their choosing.** Except when reference standards and this standard are inconsistent, the requirements of this standard shall prevail to the extent of the inconsistency.	3280.4 Incorporation by reference. (a) The specifications, standards and codes of the following organizations are incorporated by reference in 24 CFR part 3280 (this Standard) pursuant to 5 U.S.C. 552(a) and 1 CFR part 51 as though set forth in full. The incorporation by reference of these standards has been approved by the Director of the Federal Register. Reference standards have the same force and effect as this Standard (24 CFR part 3280) except that whenever reference standards and this Standard are inconsistent, the requirements of this Standard prevail to the extent of the inconsistency.
2 ROP	2-3.2 Whole-House Ventilation. Each manufactured home shall be ~~capable of continuously providing a minimum of 0.35 air changes per hour (ACH), or an equivalent hourly average rate. The requirements of 2-3.2.1 through 2-3.2.7 also shall apply~~ provided with whole house ventilation having a minimum capacity ~~2-3.2.1 Natural infiltration and exfiltration shall be considered as providing 0.25 ACH.~~ ~~2-3.2.2 The remaining ventilation capacity of 0.10~~	103 (b) Whole-House Ventilation. Each manufactured home be shall **provided with whole house ventilation having a minimum capacity** of 0.035 ft 3 /min/ft 2 (.00018 m 3 /s/m 2) of interior floor space **or its hourly average** equivalent . This ventilation capacity shall be in addition to any openable window area. **In no case shall the installed ventilation capacity of the system be less than 50 cfm nor more than 90 cfm.** The	103 (b) Whole house ventilation. Each manufactured home shall be capable of providing a minimum of 0.35 air changes per hour continuously or at an equivalent hourly average rate. The following criteria shall be adhered to. (1) Natural infiltration and exfiltration shall be considered as providing 0.25 air changes per hour. (2) The remaining ventilation capacity of 0.10 air

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
2 ROP con't	~~ACH, or its hourly average equivalent, shall be calculated using~~ of 0.035 ft 3 /min/ft 2 (.00018 m 3 /s/m 2) of interior floor space or its hourly average equivalent . This ventilation capacity shall be in addition to any openable window area. In no case shall the installed ventilation capacity of the system be less than 50 cfm nor more than 90 cfm.	following criteria shall be adhered to.	change per hour or its hourly average equivalent shall be calculated using 0.035 cubic feet per minute per square foot of interior floor space. This ventilation capacity shall be in addition to any openable window area.
	2-3.2.~~3~~ 1 The ~~remaining~~ ventilation capacity shall be permitted to be provided by a mechanical system, ~~a passive system~~, or a combination passive and mechanical system. The ventilation system or provisions for ventilation shall not create a positive pressure in U 0 value Zone 2 and Zone 3 or a negative pressure condition in U 0 value Zone 1 in excess of 0.03 inches of water (7 Pa) . ~~Mechanical systems shall be balanced. Combination passive and mechanical systems shall have adequately sized inlets or exhaust to release any unbalanced pressure. Passive systems shall have inlets and exhaust vents of sufficient size to alleviate unbalanced pressure conditions under normal conditions. Temporary imbalances due to gusting or high winds shall be permitted.~~	(1) The ventilation capacity shall be permitted to be provided by a mechanical system or a combination passive and mechanical system. The ventilation system or provisions for ventilation shall not create a positive pressure in U 0 value Zone 2 and Zone 3 or a negative pressure condition in U 0 value Zone **1 in excess of 0.03 inches of water (7 Pa).**	(3) The remaining ventilation capacity may be provided by: a mechanical system, or a passive system, or a combination passive and mechanical system. The ventilation system or provisions shall not create a positive pressure in Uo value Zones 2 and 3 or a negative pressure condition in Uo value Zone 1. Mechanical systems shall be balanced. Combination passive and mechanical systems shall have adequately sized inlets or exhaust to release any unbalanced pressure. Passive systems shall have inlets and exhaust of sufficient size to alleviate unbalance pressure conditions under normal conditions. Temporary imbalances due to gusting or high winds are permitted.
	2-3.2.4 2 The ventilation system or provisions for ventilation shall exchange air directly with the exterior of the home, except it shall not draw or expel air with the space underneath the home. The ventilation system or provisions for ventilation shall not draw or expel air into the floor, wall, or ceiling/roof systems, even if those systems are vented. The ventilation system shall be designed to ensure that outside air is distributed to all bedrooms and main living areas. The combined use of undercut doors or transom grills connecting those areas to the room where the mechanical system is	(2) The ventilation system or provisions for ventilation shall exchange air directly with the exterior of the home, except it shall not draw or expel air with the space underneath the home. The ventilation system or provisions for ventilation shall not draw or expel air into the floor, wall, or ceiling/roof systems, even if those systems are vented. The ventilation system shall be designed to ensure that outside air is distributed to all bedrooms and main living areas. The combined use of undercut doors or transom grills connecting those areas to the room where the mechanical system is	(4) The ventilation system or provision shall exchange air directly with the exterior of the home, except it shall not draw or expel air with the space underneath the home. The ventilation system or provision shall not draw or expel air into the floor, wall, or ceiling/roof systems even if those systems are vented.

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
2 ROP con't	located shall be deemed acceptable. 2-3.2.~~5~~ 3 The ventilation system or a portion thereof shall be permitted to be integral with the home's heating or cooling system. The system shall be capable of operating independently of the heating or cooling modes. A ventilation system that is integral with the heating or cooling system shall be listed as part of the heating and cooling system or listed as suitable for use therewith. 2-3.2.4 The ventilation system or portion thereof shall also be permitted to be one of the bathroom exhaust fans required by 2- 3.3.3 provided the following criteria are met: (a) Maximum sone rating of 1.0 (b) Designed for continuous operation and a minimum 10-year life. 2-3.2.~~6~~ 5 A mechanical ventilation system, or mechanical portion thereof, shall be provided with a manual control, and shall be permitted to be provided with automatic timers or humidistats. 2-3.2.~~7~~ 6 ~~Substantiation of the ventilation capacity to provide 0.10 ACH shall be provided for a mechanical system, a passive system, or a combination passive and mechanical system.~~ Occupant Education. Instructions for correctly operating and maintaining whole-house ventilation systems shall be included with the homeowner's manual. The instructions shall encourage occupants to operate these devices whenever the home is occupied, and refer to the whole-house ventilation labeled control. The whole-house ventilation label shall be permanent, shall state: "WHOLE-HOUSE VENTILATION" and shall be attached to the whole-house ventilation control.	located shall be deemed acceptable. (3) The ventilation system or a portion thereof shall be permitted to be integral with the home's heating or cooling system. The system shall be capable of operating independently of the heating or cooling modes. A ventilation system that is integral with the heating or cooling system shall be listed as part of the heating and cooling system or listed as suitable for use therewith. (4) **The ventilation system or portion thereof shall also be permitted to be one of the bathroom exhaust fans required by 2- 3.3.3 provided the following criteria are met:** **(a) Maximum zone rating of 1.0** **(b) Designed for continuous operation and a minimum 10-year life.** (5) A mechanical ventilation system, or mechanical portion thereof, shall be provided with a manual control, and shall be permitted to be provided with automatic timers or humidistats. **(6) Occupant Education. Instructions for correctly operating and maintaining whole-house ventilation systems shall be included with the homeowner's manual. The instructions shall encourage occupants to operate these devices whenever the home is occupied, and refer to the whole-house ventilation labeled control. The whole-house ventilation label shall be permanent, shall state: "WHOLE-HOUSE VENTILATION" and shall be attached to the whole-house ventilation control.**	(5) The ventilation system or a portion thereof may be integral with the homes heating or cooling system. The system shall be capable of operating independently of the heating or cooling modes. A ventilation system that is integral with the heating or cooling system shall be listed as part of the heating and cooling system or listed as suitable for use therewith. (6) A mechanical ventilation system, or mechanical portion thereof, shall be provided with a manual control and may be provided with automatic timers or humidistats. (7) Substantiation of the ventilation capacity to provide 0.10 ACH shall be provided for a mechanical system, or a passive system, or a combination passive and mechanical system.

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
3 ROC	2-5.1.2.4 One of the required exit doors *shall* be accessible from the doorway of each bedroom without traveling more than 35 ft (10.7 m). The travel distance to the exit door shall be measured on the floor or other walking surface along the center line of the natural path of travel starting at the center of the bedroom door curving around any corners or permanent obstructions with a one foot clearance therefrom, and ending at the center of the exit door.	105(a)(2)(iv) (iv) One of the required exit doors shall be accessible from the doorway of each bedroom without traveling more than 35 ft (10.7 m). **The travel distance to the exit door shall be measured on the floor or other walking surface along the center line of the natural path of travel starting at the center of the bedroom door curving around any corners or permanent obstructions with a one foot clearance therefrom, and ending at the center of the exit door.**	105(a)(2)(iv) (iv) One of the required exit doors must be accessible from the doorway of each bedroom without traveling more than 35 ft.
4 ROP ROC	2-5.2.2 All exterior swinging doors shall provide a minimum 28-in. wide x 74-in. high (71-cm x 188 cm) clear opening. All exterior sliding glass doors shall provide a minimum 28-in. x 72-in. (71-cm x 183-cm) high clear opening. Door seals shall be permitted to reduce the opening, either vertically or horizontally, a maximum of one inch.	105(b)(2) (2) All exterior swinging doors shall provide a minimum 28-in. wide x 74-in. high (71-cm x 188 cm) clear opening. All exterior sliding glass doors shall provide a minimum 28-in. x 72-in. (71-cm x 183-cm) high clear opening. **Door seals shall be permitted to reduce the opening, either vertically or horizontally, a maximum of one inch.**	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.
5 ROP	2-11 Toilet Compartments. Each toilet compartment shall have a minimum width of 30 in. (76 cm), with a minimum clear space of 21 in. (53 cm) in front of each toilet. Toilets located adjacent to a wall shall have the center line of the toilet located a minimum of 15 in. (38 cm) from the wall. Toilets located adjacent to a tub shall have the center line of the toilet located a minimum of 12 in.	111 Toilet Compartments. Each toilet compartment shall have a minimum width of 30 in. (76 cm), with a minimum clear space of 21 in. (53 cm) in front of each toilet. **Toilets located adjacent to a wall shall have the center line of the toilet located a minimum of 15 in. (38 cm) from the wall.** Toilets located adjacent to a tub shall have the center line of the toilet	111 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.

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	(30 cm) from the outside edge of the tub.	located a minimum of 12 in. (30 cm) from the outside edge of the tub.	
6 ROP ROC	2-13.2 Safety glazing. Glazing in hazardous locations shall meet the requirements of Section 2-13.2.1, and those of 2-13.2.2 or 2-13.2.3. 2-13.2.1 Safety glazing materials. Safety glazing material shall meet the test requirements of CPSC 16 CFR 1201, or ANSI Z97.1. 2-13.2.2 Hazardous location glazing. Where located and subject to human impact loads, except as outlined in Section 2-13.3, safety glazing shall be installed in the following hazardous locations: (a) Glazing in ingress and egress doors, except jalousies. (b) Glazing in fixed and sliding panels of sliding-type doors. (c) Glazing in storm-type doors. (d) Glazing in unframed side-hinged swinging doors. (e) Glazing in doors and fixed panels less than 60 in. (1524 mm) above the room floor level that enclose bathtubs, showers, hydromassage tubs, hot tubs, whirlpools, saunas, and steam rooms. (f) Glazing within 12 in. (305 mm) horizontally, and 60 in. (1524 mm) vertically adjacent to and in the same plane of a door. The 12 inch (305 mm) dimension is measured from the edge of the door in the closed position. The 60 in. (1524 mm) dimension is measured from the room floor level. (g) Glazing within 36 in. (914 mm) of an interior room walking surface that meets all of the following: 1. Individual glazed panel exceeds 9 sq ft (.836 m 2) in exposed area.	**113 Safety glazing. Glazing in hazardous locations shall meet the requirements of (a) and those of (b) or (c)** **(a) Safety glazing materials. Safety glazing material shall meet the test requirements of CPSC 16 CFR 1201, or ANSI Z97.1.** **(b) Hazardous location glazing. Where located and subject to human impact loads, except as outlined in Section 113(c), safety glazing shall be installed in the following hazardous locations:** **(1) Glazing in ingress and egress doors, except jalousies.** **(2) Glazing in fixed and sliding panels of sliding-type doors.** **(3) Glazing in storm-type doors.** **(4) Glazing in unframed side-hinged swinging doors.** **(5) Glazing in doors and fixed panels less than 60 in. (1524 mm) above the room floor level that enclose bathtubs, showers, hydromassage tubs, hot tubs, whirlpools, saunas, and steam rooms.** **(6) Glazing within 12 in. (305 mm) horizontally, and 60 in. (1524 mm) vertically adjacent to and in the same plane of a door. The 12 inch (305 mm) dimension is measured from the edge of the door in the closed position. The 60 in. (1524 mm) dimension is measured from the room floor level.** **(7) Glazing within 36 in. (914 mm) of an interior room walking surface that meets all of the following:** **(i). Individual glazed panel exceeds 9 sq ft (.836**	113 Glass and glazed openings. (a) Windows and sliding glass doors. All windows and sliding glass doors shall meet the requirements of Section 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 reference	3280 reference as shown with changes	Current wording of 3280
6 ROP ROC con't	2. The bottom edge of the exposed glazing is less than 19 in. (483 mm) above the room floor level. 3. The top edge of the exposed glazing is greater than 36 in. (914 mm) above the room floor level. (h) Glazing in guardrails and railings. 2-13.2.3 Locations not considered hazardous. The following are not required to meet the requirements of Section 2-13.2.2: (a) Openings in doors through which a 3 in. (76 mm) sphere is unable to pass. (b) Leaded and decorative glazed panels. (c) Glazing as outlined in Section 2-13.2.2(f) where an intervening wall or other permanent barrier exists between the door and the glazing. (d) Glazing as outlined in Section 2-13.2.2(g) where a protective bar or member is installed horizontally between 34 in. (864 mm) and 38 in. (965 mm) above the room floor level. The bar or member shall be a minimum 1 1/2 in. (38 mm) in height, and capable of withstanding a horizontal load of 50 pounds per linear foot (74.5 kg/m). (e) Mirrors hung or mounted on a flush door surface or solid wall surface.	**m 2) in exposed area.** **(ii). The bottom edge of the exposed glazing is less than 19 in. (483 mm) above the room floor level.** **(iii). The top edge of the exposed glazing is greater than 36 in. (914 mm) above the room floor level.** **(8) Glazing in guardrails and railings.** **(c) Locations not considered hazardous. The following are not required to meet the requirements of Section 113(b):** **(i) Openings in doors through which a 3 in. (76 mm) sphere is unable to pass.** **(ii) Leaded and decorative glazed panels.** **(iii) Glazing as outlined in Section 113(b)(6) where an intervening wall or other permanent barrier exists between the door and the glazing.** **(iv) Glazing as outlined in Section 113(b)(7) where a protective bar or member is installed horizontally between 34 in. (864 mm) and 38 in. (965 mm) above the room floor level. The bar or member shall be a minimum 1 1/2 in. (38 mm) in height, and capable of withstanding a horizontal load of 50 pounds per linear foot (74.5 kg/m).** **(v) Mirrors hung or mounted on a flush door surface or solid wall surface.**	
7 ROP ROC	3-6 Fireblocking. 3-6.1 General. Fireblocking shall comply with Section 3-6. The integrity of all fireblocking materials shall be maintained. 3-6.2 Fireblocking Materials. Fire blocking shall consist of the following materials. 3-6.2.1 Minimum 1 in. (25.4 mm) nominal	**206 Fireblocking.** **(a) General. Fireblocking shall comply with Section 206. The integrity of all fireblocking materials shall be maintained.** **(b) Fireblocking Materials. Fire blocking shall consist of the following materials.** **(1) Minimum 1 in. (25.4 mm) nominal lumber,**	206 Firestopping. (a) Firestopping of at least 1-inch nominal lumber, 5/16-inch thick gypsum board, or the equivalent, shall be provided to cut off concealed draft openings between walls and partitions, including furred spaces, and the roof or floors, so as to retard vertical movement of fire. In particular, such

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
7 ROP ROC con't	lumber, 5/16 in. (8 mm) thick gypsum board, or the equivalent. 3-6.2.2 Mineral wool or unfaced glass fiber batts or blankets shall be allowed as fireblocking where the material fills the entire cross section of the concealed space to minimum ~~thickness or depth~~ height of 16 in. (406 mm) measured vertically. The mineral wool or unfaced glass fiber batts or blankets shall be installed so as to be retained securely in place. 3-6.2.3 Loose-fill insulation shall be allowed as fireblocking where it has been specifically tested in the form and manner intended for use to demonstrate its ability to remain in place and to retard the spread of fire and hot gasses. 3-6.2.4 Other Listed or Approved Materials. 3-6.3 Fireblocking Locations. 3-6.3.1 Fireblocking shall be installed in concealed spaces of stud walls, partitions, and furred spaces at the floor and ceiling levels. Concealed spaces shall not communicate between floor levels. Concealed spaces shall not communicate between a ceiling level and a concealed roof area, or an attic space. 3-6.3.2 Fireblocking shall be installed at the interconnection of a concealed vertical space and a concealed horizontal space that occurs (1) between a concealed wall cavity and the ceiling joists above, (2) at soffits, drop ceilings, cover ceilings and similar locations. 3-6.3.3 Fireblocking shall be installed ~~in~~ around the openings for pipes, vents and other penetrations in walls, floors and ceilings of furnace and water heater spaces. Fireblocking shall completely fill the opening around the penetration or shall	**5/16 in. (8 mm) thick gypsum board, or the equivalent.** **(2) Mineral wool or unfaced glass fiber batts or blankets shall be allowed as fireblocking where the material fills the entire cross section of the concealed space to minimum height of 16 in. (406 mm) measured vertically. The mineral wool or unfaced glass fiber batts or blankets shall be installed so as to be retained securely in place.** **(3) Loose-fill insulation shall be allowed as fireblocking where it has been specifically tested in the form and manner intended for use to demonstrate its ability to remain in place and to retard the spread of fire and hot gasses.** **(4) Other Listed or Approved Materials.** **(c)Fireblocking Locations.** **(1) Fireblocking shall be installed in concealed spaces of stud walls, partitions, and furred spaces at the floor and ceiling levels. Concealed spaces shall not communicate between floor levels. Concealed spaces shall not communicate between a ceiling level and a concealed roof area, or an attic space.** **(2) Fireblocking shall be installed at the interconnection of a concealed vertical space and a concealed horizontal space that occurs (i) between a concealed wall cavity and the ceiling joists above, (ii) at soffits, drop ceilings, cover ceilings and similar locations.** **(3) Fireblocking shall be installed around the openings for pipes, vents and other penetrations in walls, floors and ceilings of furnace and water heater spaces. Fireblocking shall completely fill the opening around the penetration or shall**	concealed spaces must be constructed so that floor-to-ceiling concealed spaces on one floor do not communicate with any concealed space on another floor, any concealed spaces in the floor, or any concealed space in the roof cavity. A barrier must be installed to prevent communication between adjacent concealed spaces. (1) Where the barrier is vertical, it must be made of exterior or interior covering(s) equivalent to that used on the nearest exposed wall surface; and (2) In all other cases, the barrier must be made of 1-inch nominal lumber, 5/16-inch thick gypsum board, or the equivalent. (b) A space does not lose its character as a concealed draft opening if it is filled with insulation or other material or if it is blocked by a barrier other than as required by paragraph (a) of this section. (c) All openings for pipes and vents and other penetrations in walls, floors, and ceilings of furnace and water heater spaces shall be tight-fitted or firestopped. Pipes, vents, and other penetrations are tight-fitted when they cannot be moved freely in the opening.

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
7 ROP ROC con't	completely fill the cavity or concealed space into which the penetration is made. Pipes, vents, and other penetrations that cannot be moved freely within their opening shall be considered fireblocked. Materials used to fireblock heat producing vent penetrations shall be noncombustible or limited combustible types. A-3-6.1 A concealed space does not lose its character as a concealed draft opening if it is blocked by materials, or filled with insulation or other material that does not comply with Section 3-6.2.	**completely fill the cavity or concealed space into which the penetration is made. Pipes, vents, and other penetrations that cannot be moved freely within their opening shall be considered fireblocked. Materials used to fireblock heat producing vent penetrations shall be noncombustible or limited combustible types.**	Appendix material not highlighted for 3280
8 ROP ROC	3-7 Requirements for Thermal Insulating Materials. 3-7.1 Insulating materials other than Foam Plastic. 3-7.1.1 General. Exposed and concealed thermal insulation materials, other than foam plastic, shall have a flame spread index of 25 or less, and a smoke developed index of 450 or less when tested in accordance with NFPA 255, Standard Method of Test of Surface Burning Characteristics of Building Materials. Tested materials shall include any facings. Materials and methods complying with the Sections 3-7.1.1.1, 3-7.1.1.2, and 3-7.1.2 shall be accepted. 3-7.1.1.1 The flame spread and smoke developed limitations shall not apply to coverings and facings of insulation batts or blankets installed in concealed spaces where the facings are in substantial contact with the unexposed surface of wall, floor, or ceiling finish. 3-7.1.1.2 Cellulose loose-fill insulation, which is not spray applied or self supporting and which complies with 3-7.1.2, shall not be required to have	**207 Requirements for Thermal Insulating Materials.** **(a) Insulating materials other than Foam Plastic.** **(1) General. Exposed and concealed thermal insulation materials, other than foam plastic, shall have a flame spread index of 25 or less, and a smoke developed index of 450 or less when tested in accordance with NFPA 255, Standard Method of Test of Surface Burning Characteristics of Building Materials. Tested materials shall include any facings. Materials and methods complying with the (i), (ii), and (b) shall be accepted.** **(i) The flame spread and smoke developed limitations shall not apply to coverings and facings of insulation batts or blankets installed in concealed spaces where the facings are in substantial contact with the unexposed surface of wall, floor, or ceiling finish.** **(ii) Cellulose loose-fill insulation, which is not spray applied or self supporting and which**	New material not currently addressed in 3280. Add a new section 207 and renumber exiting

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
8 ROP ROC Con't	a flame spread index of 25 or less. 3-7.1.2 Loose-fill insulation. 3-7.1.2.1 Loose-fill insulation, other than cellulose loose-fill insulation, which cannot be mounted in the NFPA 255 test apparatus without a screen or other artificial support, shall have a flame spread rating of 25 or less and a smoke development factor of 450 or less when tested in accordance with CAN/ULC-S102.2- M88. Cellulose loose fill shall comply with Section 3-7.1.2.2. 3-7.1.2.2 Cellulose loose-fill insulation shall comply with, and each package shall be labeled, in accordance with CPSC 16 CFR, Parts 1209 and 1404. 3-7.1.3 Attic locations. Exposed insulation installed in attics on the floor or ceiling forming the lower boundary of the attic shall have a critical radiant flux of not less than 0.12 watt/cm 2 when tested in accordance with NFPA 253, Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.	**complies with Section 3280.207(b), shall not be required to have a flame spread index of 25 or less.** **(2) Loose-fill insulation.** **(i) Loose-fill insulation, other than cellulose loose-fill insulation, which cannot be mounted in the NFPA 255 test apparatus without a screen or other artificial support, shall have a flame spread rating of 25 or less and a smoke development factor of 450 or less when tested in accordance with CAN/ULC-S102.2- M88. Cellulose loose fill shall comply with Section 3280.207(a)(2)(ii) .** **(ii) Cellulose loose-fill insulation shall comply with, and each package shall be labeled, in accordance with CPSC 16 CFR, Parts 1209 and 1404.** **(3) Attic locations. Exposed insulation installed in attics on the floor or ceiling forming the lower boundary of the attic shall have a critical radiant flux of not less than 0.12 watt/cm 2 when tested in accordance with NFPA 253, Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.**	
9 ROP ROC	3-8 Fire Warning Equipment. 3-8.1 General. Approved, single-station smoke alarms or smoke detectors shall be installed in a manufactured home as specified in Section 3-8. Smoke detection systems installed in conformance with NFPA 72, National Fire Alarm Code, shall be acceptable. 3-8.2 Installation. Smoke alarms and smoke detectors shall be	**208 Fire Warning Equipment.** **(a) General. Approved, single-station smoke alarms or smoke detectors shall be installed in a manufactured home as specified in Section 3-8. Smoke detection systems installed in conformance with NFPA 72, National Fire Alarm Code, shall be acceptable.** **(b) Installation. Smoke alarms and smoke detectors shall be**	3280.208 Fire detection equipment. (a) General. At least one smoke detector (which may be a single station alarm device) shall be installed in the home in the location(s) specified in paragraph (b) of this section. (b) Smoke detector locations. (1) A smoke

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
9 ROP ROC con't	installed in accordance with the manufacturer's listing and instructions, and shall comply with the following parameters: 3-8.2.1 Flat Ceilings. Smoke alarms or smoke detectors mounted on a flat ceiling shall be located no closer than 4 in. (102 mm) from the adjoining wall surface. 3-8.2.2* Sloped Ceilings (Peaked Ceilings). Smoke alarms or smoke detectors mounted on a peaked ceiling shall be located within 36 in. (914 mm) horizontally of the peak, but not closer than 4 in. (102 mm) vertically to the peak. 3-8.2.3* Sloped Ceilings (Shed Ceilings). Smoke alarms or smoke detectors mounted on a sloped ceiling having a rise greater than 1 ft in 8 ft (1 m in 8 m) horizontally shall be located within 36 in. (914 mm) of the high side of the ceiling, but not closer than 4 in. (102 mm) from the adjoining wall surface. 3-8.2.4 Wall Mounting. Smoke alarms or smoke detectors mounted on walls shall be located not closer than 4 in. (102 mm) from the adjoining ceiling surface, not farther than 12 in. (305 mm) from the adjoining ceiling surface, and not farther from the adjoining ceiling than specified in the manufacturer's installation instructions. 3-8.2.5 Electrical Connection. Smoke alarms ~~and smoke detectors that receive~~ designed to receive their primary power from ~~a commercial light and~~ an alternating current power source shall be mounted on an electrical outlet box and connected by a permanent wiring method in accordance with ~~NFPA 70, National Electrical Code~~ this standard. There shall be no switches in the circuit between smoke alarms or smoke detectors and the	**installed in accordance with the manufacturer's listing and instructions, and shall comply with the following parameters:** **(1) Flat Ceilings. Smoke alarms or smoke detectors mounted on a flat ceiling shall be located no closer than 4 in. (102 mm) from the adjoining wall surface.** **(2)* Sloped Ceilings (Peaked Ceilings). Smoke alarms or smoke detectors mounted on a peaked ceiling shall be located within 36 in. (914 mm) horizontally of the peak, but not closer than 4 in. (102 mm) vertically to the peak.** **(3)* Sloped Ceilings (Shed Celings). Smoke alarms or smoke detectors mounted on a sloped ceiling having a rise greater than 1 ft in 8 ft (1 m in 8 m) horizontally shall be located within 36 in. (914 mm) of the high side of the ceiling, but not closer than 4 in. (102 mm) from the adjoining wall surface.** **(4) Wall Mounting. Smoke alarms or smoke detectors mounted on walls shall be located not closer than 4 in. (102 mm) from the adjoining ceiling surface, not farther than 12 in. (305 mm) from the adjoining ceiling surface, and not farther from the adjoining ceiling than specified in the manufacturer's installation instructions.** **(5) Electrical Connection. Smoke alarms designed to receive their primary power from an alternating current power source shall be mounted on an electrical outlet box and connected by a permanent wiring method in accordance with this standard. There shall be no switches in the circuit between smoke alarms or smoke detectors and the overcurrent protective device of that circuit. Smoke alarms**	detector shall be installed on any wall in the hallway or space communicating with each bedroom area between the living area and the first bedroom door unless a door(s) separates the living area from that bedroom area, in which case the detector(s) shall be installed on the living area side as close to the door(s) as practicable. Homes having bedroom areas separated by any one or combination of common-use areas such as kitchen, dining room, living room, or family room but not a bathroom or utility room), shall have at least one detector protecting each bedroom area. (2) When located in hallways, the detector shall be between the return air intake and the living area. (3) When a home is equipped or designed for future installation of a roof-mounted evaporative cooler or other equipment discharging conditioned air through a ceiling grille into the living space environment, the detector closest to the air discharge shall be located no closer than three horizontal feet from any discharge grille. (4) A smoke detector shall not be placed in a location which impairs its effectiveness. (c) Labeling. Smoke detectors shall be labeled as conforming with the requirements of Underwriters' Laboratories Standard No. 217—Fourth Edition 1993 for Single and Multiple Station Smoke Detectors. (d) Installation. Each smoke detector shall be installed in accordance with its listing. The top of

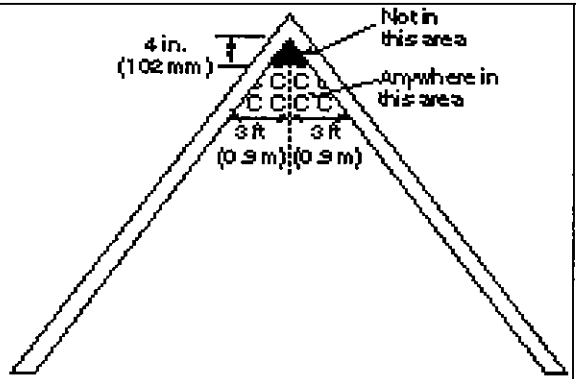
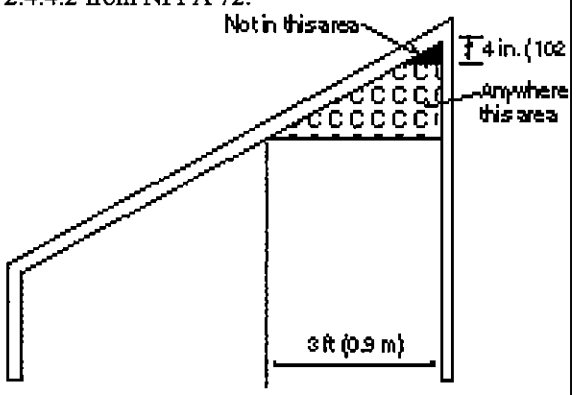
Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
9 ROP ROC con't	overcurrent protective device of that circuit. Smoke alarms or smoke detectors shall not receive their power from a circuit that is protected by a ground-fault circuit-interrupter. 3-8.3 Location. 3-8.3.1 General Location. Single station smoke alarms or smoke detectors shall be installed in the following locations: (a)* In all sleeping rooms; (b) Outside of each separate sleeping area, ~~in the immediate vicinity of the sleeping room.~~ In home designs that do not permit compliance with the requirements of 3-8.3.2 the smoke alarm or smoke detector can be placed in a common area adjacent to the sleeping area. (c) On each additional story of the manufactured home ~~including basements~~. 3-8.3.2 Specific Location Requirements. (a) Smoke alarms and smoke detectors shall be located in areas where ambient conditions are within the limits specified by the manufacturer. (b)* Smoke alarms or smoke detectors installed within 20 ft (6.1 m) horizontal path of a cooking appliance shall be equipped with an alarm silencing means or be of the photoelectric type. (c) Smoke alarms or smoke detectors shall not be installed within 36 in. (914 mm) from a door to a bathroom or kitchen, or the supply grill of a forced air heating or cooling system. (d)* A manufactured home designed for the future installation of a roof-mounted evaporative cooler or other equipment discharging conditioned air through a ceiling grill into the living area shall not have smoke alarms or smoke detectors installed within 36 in. (914 mm) horizontal path of the future	**or smoke detectors shall not receive their power from a circuit that is protected by a ground-fault circuit-interrupter.** **(c) Location.** **(1) General Location. Single station smoke alarms or smoke detectors shall be installed in the following locations:** **(i)* In all sleeping rooms;** **(ii) Outside of each separate sleeping area, In home designs that do not permit compliance with the requirements of Section 3280.208(c)(2) the smoke alarm or smoke detector can be placed in a common area adjacent to the sleeping area.** **(iii) On each additional story of the manufactured home.** **(2) Specific Location Requirements.** **(i) Smoke alarms and smoke detectors shall be located in areas where ambient conditions are within the limits specified by the manufacturer.** **(ii)* Smoke alarms or smoke detectors installed within 20 ft (6.1 m) horizontal path of a cooking appliance shall be equipped with an alarm silencing means or be of the photoelectric type.** **(iii) Smoke alarms or smoke detectors shall not be installed within 36 in. (914 mm) from a door to a bathroom or kitchen, or the supply grill of a forced air heating or cooling system.** **(iv)* A manufactured home designed for the future installation of a roof-mounted evaporative cooler or other equipment discharging conditioned air through a ceiling grill into the living area shall not have smoke alarms or smoke detectors installed within 36 in.**	the detector shall be located on a wall 4 inches to 12 inches, or at a distance permitted by the listing, below the ceiling. However, when a detector is mounted on an interior wall below a sloping ceiling, it shall be located 4 inches to 12 inches below the intersection of the connecting exterior wall and the sloping ceiling (cathedral ceiling). The required detector(s) shall be attached to an electrical outlet box and the detector connected by a permanent wiring method into a general electrical circuit. There shall be no switches in the circuit to the detector between the over-current protection device protecting the branch circuit and the detector. Smoke detector(s) shall not be placed on the same branch circuit or any circuit protected by a ground fault circuit interrupter.

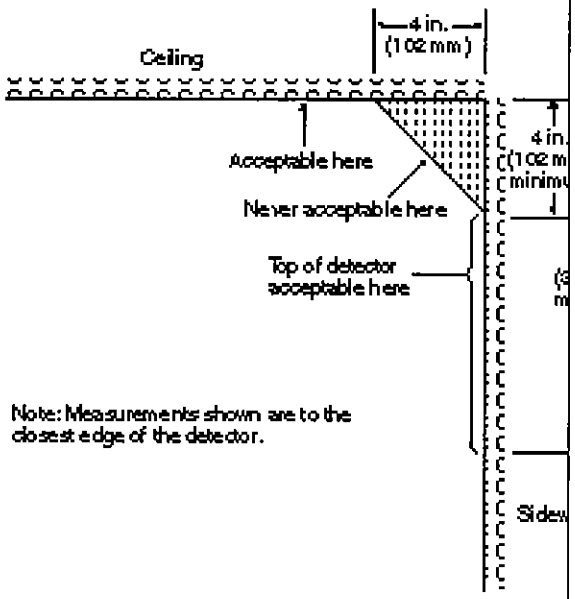
Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
9 ROP ROC con't	discharge opening. (e) Where there are stairs leading to other occupied levels, a smoke alarm or smoke detector shall be located near the top of each stairway so that smoke rising in the stairway cannot be prevented from reaching the smoke alarm or smoke detector by an intervening door or obstruction. For stairways leading up from a basement, smoke alarms or smoke detectors shall be located on the basement ceiling near the entry to the stairs. (f) A manufactured home designed for installation over a basement shall be provided with a junction box for the installation and interconnection of the smoke alarms or smoke detectors as required by Section 3-8. 3-8.4 Visible Notification Appliances. If provided visible notification appliances installed for the hearing impaired shall comply with the following requirements. Visible notification appliances are not required to operate from a secondary power source. (a) Visible notification devices shall be installed that produce at least 110 cd at the pillow in sleeping rooms, and 15 dc in all other spaces. (b) Visible notification appliances located on the ceiling over the bed and within 16 ft (4.88 m) of a sleeping occupant having a light output rating of at least 177 cd shall be acceptable. (c) Visible notification appliances in a sleeping room mounted more than 24 in. (610 m) below the ceiling and within 16 ft (4.88 m) of the pillow having a minimum rating of 110 cd shall be acceptable. 3-8.5 Interconnection. Smoke alarms shall be interconnected such that the operation of any one	**(914 mm) horizontal path of the future discharge opening.** **(v) Where there are stairs leading to other occupied levels, a smoke alarm or smoke detector shall be located near the top of each stairway so that smoke rising in the stairway cannot be prevented from reaching the smoke alarm or smoke detector by an intervening door or obstruction. For stairways leading up from a basement, smoke alarms or smoke detectors shall be located on the basement ceiling near the entry to the stairs.** **(vi) A manufactured home designed for installation over a basement shall be provided with a junction box for the installation and interconnection of the smoke alarms or smoke detectors as required by Section 3280.208.** **(d) Visible Notification Appliances. If provided visible notification appliances installed for the hearing impaired shall comply with the following requirements. Visible notification appliances are not required to operate from a secondary power source.** **(1) Visible notification devices shall be installed that produce at least 110 cd at the pillow in sleeping rooms, and 15 dc in all other spaces.** **(2) Visible notification appliances located on the ceiling over the bed and within 16 ft (4.88 m) of a sleeping occupant having a light output rating of at least 177 cd shall be acceptable.** **(3) Visible notification appliances in a sleeping room mounted more than 24 in. (610 m) below the ceiling and within 16 ft (4.88 m) of the pillow having a minimum rating of 110 cd shall be acceptable.**	

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
9 ROP ROC con't	smoke alarm shall cause the alarm to sound in all smoke alarms within the manufactured home. 3-8.6 Power Supplies. 3-8.6.1 Smoke alarms shall receive their primary power from one of the following: (a) An alternating current power source, along with a secondary battery source capable of operating the device for at least 7 days in the normal condition followed by 4 minutes of alarm, or (b) A non replaceable primary battery capable of operating the device for at least 10 years followed by 4 minutes of alarm, followed by a trouble alarm for 7 days. 3-8.6.2 Smoke detectors shall be connected to central controls for power, signal processing, and activation of notification appliances. 3-8.7 Maintenance, Testing, and Information. 3-8.7.1 Following installation, smoke alarms shall be functionally tested in accordance with the alarm manufacturer's instructions. 3-8.7.2 Fire warning equipment shall be provided with a convenient means for testing its operation by the homeowner. 3-8.7.3 Home manufacturers shall provide specific smoke alarm or smoke detectors manufacturer instructions to: (a) The manufactured home installer, homeowner, or other responsible parties for the inspection and testing of smoke alarms during manufactured home installation. (b) The homeowner describing the operation, maintenance, method, and frequency of testing of the smoke alarms or smoke detectors.	**(e) Interconnection. Smoke alarms shall be interconnected such that the operation of any one smoke alarm shall cause the alarm to sound in all smoke alarms within the manufactured home.** **(f) Power Supplies.** **(1) Smoke alarms shall receive their primary power from one of the following:** **(i) An alternating current power source, along with a secondary battery source capable of operating the device for at least 7 days in the normal condition followed by 4 minutes of alarm, or** **(ii) A non replaceable primary battery capable of operating the device for at least 10 years followed by 4 minutes of alarm, followed by a trouble alarm for 7 days.** **(2) Smoke detectors shall be connected to central controls for power, signal processing, and activation of notification appliances.** **(f) Maintenance, Testing, and Information.** **(1) Following installation, smoke alarms shall be functionally tested in accordance with the alarm manufacturer's instructions.** **(2) Fire warning equipment shall be provided with a convenient means for testing its operation by the homeowner.** **(3) Home manufacturers shall provide specific smoke alarm or smoke detectors manufacturer instructions to:** **(i) The manufactured home installer, homeowner, or other responsible parties for the inspection and testing of smoke alarms during manufactured home installation.**	

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
9 ROP ROC con't	(c) The homeowner that unless otherwise recommended by the manufacturer, smoke alarms shall be replaced when they fail to respond to tests. Smoke detectors shall not remain in service longer than 10 years from the date of installation. (d) The homeowner describing the installation requirements of smoke alarms or smoke detectors as required by 3-8.3.2(f). 3-8.8 Labeling and Listing. Smoke alarms or smoke detectors shall be listed and approved to standards that verify the required performance. Smoke alarms conforming to ANSI/UL 217, Standard for Safety, Single and Multiple Station Smoke Alarms; smoke detectors conforming to ANSI/UL 268, Standard for Safety, Smoke Detectors for Fire Protective Signaling Systems; and visible signaling appliances conforming to ANSI/UL 1971, Signaling Devices for Hearing Impaired, shall be considered acceptable.	**(ii) The homeowner describing the operation, maintenance, method, and frequency of testing of the smoke alarms or smoke detectors.** **(iii) The homeowner that unless otherwise recommended by the manufacturer, smoke alarms shall be replaced when they fail to respond to tests. Smoke detectors shall not remain in service longer than 10 years from the date of installation.** **(iv) The homeowner describing the installation requirements of smoke alarms or smoke detectors as required by 3-8.3.2(f).** **(g) Labeling and Listing. Smoke alarms or smoke detectors shall be listed and approved to standards that verify the required performance. Smoke alarms conforming to ANSI/UL 217, Standard for Safety, Single and Multiple Station Smoke Alarms; smoke detectors conforming to ANSI/UL 268, Standard for Safety, Smoke Detectors for Fire Protective Signaling Systems; and visible signaling appliances conforming to ANSI/UL 1971, Signaling Devices for Hearing Impaired, shall be considered acceptable.**	
	A-3-8.3.1 A sleeping area is considered those rooms which are used for sleeping and other auxiliary rooms adjacent to the sleeping room such as sitting areas or other suite arrangements. A-3-8.3.2(b) The measurement of the horizontal path is determined by measuring the normal available path of travel the products of combustion can follow in a particular layout. It is not the intent to take this measurement as a radius of 20 ft from the detector not considering any building walls of configuration. A-3-8.3.2 (d) The measurement of the horizontal		Appendix material not included in the 3280 document

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
9 ROP ROC con't	path is determined by measuring the normal available path of travel the products of combustion can follow in a particular layout. It is not the intent to take this measurement as a radius of 3 feet from the detector not considering any building walls of configuration. Add the following definitions to Section 3-2: Notification Appliance. A fire alarm system component such as a bell, horn, speaker, light, or text display that produces audible, tactile, or visible outputs, or any combination thereof. Single Station Alarm. A detector comprising an assembly incorporating a sensor, control components, and an alarm notification appliance in one unit operated from a power source either located in the unit or obtained at the point of installation. Smoke Detector. A device that detects visible or invisible particles of combustion. Visible Notification Appliance. A notification appliance that alerts by the sense of light. A-3-8.2.2 Smoke alarms or smoke detectors spacing layout for sloped ceiling (peaked type). Add Figure A-2-2.4.4.1 from NFPA 72, National Fire Alarm Code.		

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
9 ROP ROC con't	 Figure A-3-8.2.2(a) Sloped ceilings (peaked type). For sloped ceiling (shed type) add Figure A-2-2.4.4.2 from NFPA 72.  Figure A-3-8.2.2(b) Sloped ceilings (shed type). Add: A-3-8.2.3 See information on placement of smoke alarms or smoke detectors in sloped ceilings		

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	in A-3-8.2.2. Add: A-3-8.2.4 An example of proper mounting for smoke alarms or smoke detectors. Add Figure A-2-2.1 from NFPA 72.  Figure A-3-8.2.4 Example of proper mounting for smoke alarms and smoke detectors.		
10 ROP	3-10.2 When an automatic fire sprinkler system is installed in a manufactured home it shall be designed, installed and tested in accordance with	210(b) (b) **When an automatic fire sprinkler system is installed in a manufactured home it shall be**	New material not currently addressed in 3280 (210) Remaining text of section can be found in the changes done in 1999

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	NFPA-13D, Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes.	**designed, installed and tested in accordance with NFPA-13D, Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes.**	
11 ROP	3-10.5 Upon final connection at the home site of the fire sprinkler system to the water supply per the manufacturer's instructions, the adequacy of the water supply shall be verified, and the system shall be tested per NFPA 13D. The site installer shall insert their name, address, and date on the certificate per 3-10.3.	210(e) **(e) Upon final connection at the home site of the fire sprinkler system to the water supply per the manufacturer's instructions, the adequacy of the water supply shall be verified, and the system shall be tested per NFPA 13D. The site installer shall insert their name, address, and date on the certificate per Section 3280.210(c).**	New material not currently addressed in 3280 (210) Remaining text of section can be found in the changes done in 1999
12 ROP	3-10.6 Home manufacturers shall provide the homeowner with the following information describing the fire sprinkler system: (a) equipment and specifications, (b) design information, (c) operation, (d) method and frequency of system testing, and (e) proper fire sprinkler maintenance.	210(f) **(f) Home manufacturers shall provide the homeowner with the following information describing the fire sprinkler system:** **(a) equipment and specifications,** **(b) design information,** **(c) operation,** **(d) method and frequency of system testing, and** **(e) proper fire sprinkler maintenance.**	New material not currently addressed in 3280 (210) Remaining text of section can be found in the changes done in 1999
13 ROP	4-1 Scope. This chapter shall cover the minimum requirements for materials, products, equipment, and workmanship needed to ensure that the manufactured home will provide the following: (a) Structural strength and rigidity (b) Protection against corrosion, decay, insects, rodents, and other similar destructive forces (c) Protection against hazards of windstorm (d) Resistance to the elements	301. Scope. This chapter shall cover the minimum requirements for materials, products, equipment, and workmanship needed to ensure that the manufactured home will provide the following: (a) Structural strength and rigidity (b) Protection against corrosion, decay, insects, **rodents**, and other similar destructive forces (c) Protection against hazards of windstorm (d) Resistance to the elements	3280.301 Scope. This subpart covers the minimum requirements for materials, products, equipment and workmanship needed to assure that the manufactured home will provide: (a) Structural strength and rigidity, (b) Protection against corrosion, decay, insects and other similar destructive forces, (c) Protection against hazards of windstorm, (d)

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	(e) Durability and economy of maintenance.	(e) Durability and economy of maintenance.	resistance to the elements, and (e) Durability and economy of maintenance.
14 ROP	Delete 4-3.6.1 and 4-3.6.2	Delete 303(g)(1) and (2)	303(g)(1) and (2) (1) Testing procedures so developed shall be submitted to the Department for approval. (2) Upon notification of approval, the alternative test procedure is considered acceptable.
15 ROP	Table 4-4 " Medium Density Fiberboard (MDF) ..... ANSI A208.2-1994 "	304 (b)(1) **Medium Density Fiberboard (MDF) .....** **ANSI A208.2-1994**	New material not currently addressed in 3280 (304 (b)(1))
16 ROP ROC	Table 4-4 Mat-Formed Wood Particleboard.....ANSI A208.1 1999.	304(b)(1) **Mat-Formed Wood Particleboard.....ANSI A208.1 1999.**	New material not currently addressed in 3280 (304 (b)(1))
17 ROP	Table 4-4 "...Hardboard siding ANSI/AHA A135.6 ~~1990~~ 1998. "	304(b)(1) Hardboard siding ..... ANSI/AHA A135.6 **1998.**	(304 (b)(1) Hardboard siding ANSI/AHA A135.6 1990
18 ROP	4-5.3.1.1 Add the following sentence to the existing 4-5.3.1.1 so that it reads as follows: The net uplift roof loading shall not be reduced by the dead load of the roof structure for the purposes of engineering design or structural load testing.	305(c)(1)(i) (i) Standard wind loads (Zone I). When a manufactured home is not designed to resist the wind loads for high wind areas (Zone II or Zone III) specified in paragraph (c)(1)(ii) of this section, the manufactured home and each of its wind resisting parts and portions shall be designed for horizontal wind loads of not less than 15 psf and net uplift load of not less than 9 psf. **The net uplift roof loading shall not be reduced by the dead load of the roof structure for the purposes of engineering design or structural load testing.**	305(c)(1)(i) (i) Standard wind loads (Zone I). When a manufactured home is not designed to resist the wind loads for high wind areas (Zone II or Zone III) specified in paragraph (c)(1)(ii) of this section, the manufactured home and each of its wind resisting parts and portions shall be designed for horizontal wind loads of not less than 15 psf and net uplift load of not less than 9 psf.
19 ROP	4-5.3.2.4 Local Requirements. For areas where recognized wind mapping data indicates wind	305(c)(2)(iv) (iv) Local Requirements. For areas where	305(c)(2)(iv) (iv) Consideration of local requirements. For

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
ROC	speeds in excess of those identified in this standard, the federal regulatory agency shall consider processing through rule making for the purpose of adopting more stringent requirements of the state and local area ~~conditions~~.	recognized wind mapping data indicates wind speeds in excess of those identified in this standard, the **federal** regulatory agency shall **consider** processing through rule making for the purpose of adopting more stringent requirements of the state and local **area.**	areas where local building code requirements exceed the design wind speed requirements of these standards, the Department will consider the adoption through rulemaking of the more stringent requirements of the State or local building authority. (note other changes done in 1999)
20 ROP	Add a new footnote 9 to Table 4-5.3.1.2 (b) that reads as follows: 9. One piece metal roofing tested, without structural sheathing, using the design wind pressures specified for component and cladding (exterior roof coverings) in the table, are allowed to be used without structural sheathing. Add the footnote #9 reference in the table to the heading"exterior roof coverings, sheathing, and fastenings." Also revise the table so that the entry for exterior roof coverings is a subpart of components and cladding.	**9. One piece metal roofing tested, without structural sheathing, using the design wind pressures specified for component and cladding (exterior roof coverings) in the table, are allowed to be used without structural sheathing.**	305(c)(2)(ii)(B) item #9 Table footnotes New material not currently addressed in 3280
21 ROP	4-5.3.3 Snow and Roof Loads. 4-5.3.3.1 Flat, curved, and pitched roofs shall be designed to resist the live loads shown in Table 4-5.3.3.1 and Figure 4-5.3.3.1, based on the roof load zone areas established in Sections 4-5.3.3.1.1 through 4-5.3.3.1.3 applied downward on the horizontal projection as appropriate for the design zone marked on the manufactured home. Table 4-5.3.3.1 Roof Load Zones (Table 4-5-3.3.1 remains unchanged)	305(c)(3) (3) Snow and Roof Loads. (i) Flat, curved, and pitched roofs shall be designed to resist the live loads shown in Table 305(c)(3) and Figure 305(c)(3)(i), **based on the roof load zone areas established in Sections 305(c)(3)(i)(A) through 305(c)(3)(i)(C)** applied downward on the horizontal projection as appropriate for the design zone marked on the manufactured home. Table 305(c)(3) Roof Load (remains unchanged)	305 (c)(3) (3) Snow and roof loads. (i) Flat, curved and pitched roofs shall be designed to resist the following live loads, applied downward on the horizontal projection as appropriate for the design zone marked on the manufactured home: Pounds per square foot ---------- North Zone..... 40

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
21 ROP con't	4-5.3.3.1.1* Middle Roof Load Zone. The following counties in each State listed are deemed to be within the Middle Roof Load Zone: 4-5.3.3.1.2* North Roof Load Zone. The following counties in each listed State are deemed to be within the North Roof Load Zone: Maine Aroostoon Piscataquis Somerset Penobscot Waldo Kno Hancock Washington Alaska - All Counties 4-5.3.3.1.3 South Roof Load Zone. The States and counties that are not listed for the Middle Roof Load Zone, Section 4-5.3.3.1.1, or the North Roof Load Zone, Section 4-5.3.3.1.2, are deemed to be within the South Roof Load Zone. A-4-5.3.3.1.1 The following county map is provided to assist the document user which represents those counties highlighted in 4-5.3.3.1. *(See Figure A-4-5.3.3.1.1.)* A-4.5.3.3.1.2 See the county map provided in A-4-5.3.3.1.1.	**(A) Middle Roof Load Zone. The following counties in each State listed are deemed to be within the Middle Roof Load Zone:** **(B) North Roof Load Zone. The following counties in each listed State are deemed to be within the North Roof Load Zone:** **Maine** **Aroostoon** **Piscataquis** **Somerset** **Penobscot** **Waldo** **Kno** **Hancock** **Washington** **Alaska - All Counties** **(C) South Roof Load Zone. The States and counties that are not listed for the Middle Roof Load Zone, Section 305(c)(3)(i)(A), or the North Roof Load Zone, Section 305(c)(3)(i)(B), are deemed to be within the South Roof Load Zone.** Figures included at the end of the document as Figure #1.	Middle Zone..... 30 South Zone..... 20 ---------- No appendix material in 3280. Figures included in the end of this document.
22 ROP	Old 4-5.3.3.2 is now a new 4-5.3.4 4-5.3.4 Consideration of Local Requirements. For exposures in areas (mountainous or other) where recognized snow records, or wind records ~~or experience~~ indicate significant differences from the loads stated above, federal regulatory agency shall	305(c)(3)(ii) (ii) **Consideration of Local Requirements.** For exposures in areas (mountainous or other) where **recognized** snow records, **or** wind records indicate significant differences from the loads stated above, **federal** regulatory agency shall **consider**	305(c)(3)(ii) (ii) For exposures in areas (mountainous or other) where snow or wind records or experience indicate significant differences from the loads stated above, the Department may establish more stringent requirements for homes known to be

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	consider ~~be permitted to~~ establishing more stringent requirements for homes known to be destined for such areas by proceeding through rulemaking for the purpose of adopting more stringent requirements for the local conditions. For snow loads, such requirements shall be based on a snow load of 0.6 of the ground snow load for areas exposed to wind and a roof snow load of 0.8 of the ground snow load for sheltered areas.	establishing more stringent requirements for homes known to be destined for such areas **by proceeding through rulemaking for the purpose of adopting more stringent requirements for the local conditions**. For snow loads, such requirements shall be based on a snow load of 0.6 of the ground snow load for areas exposed to wind and a roof snow load of 0.8 of the ground snow load for sheltered areas.	destined for such areas. For snow loads, such requirements are to be based on a roof snow load of 0.6 of the ground snow load for areas exposed to wind and a roof snow load of 0.8 of the ground snow load for sheltered areas.
23 ROP	4-5.3.3.4 Skylights shall be required to withstand roof loads as specified in Sections 4-5.3.3.1 or 4-5.3.3.2. Skylights shall be listed and tested in accordance with AAMA 1600-90 Voluntary Specifications for Skylights.	305(c)(3)(iv) **(iv) Skylights shall be required to withstand roof loads as specified in Sections 3280.305(c)(3)(i) or 3280.305(c)(3)(ii). Skylights shall be listed and tested in accordance with AAMA 1600/I.S.7, Voluntary Specifications for Skylights.**	New material not currently addressed in 3280 305(c)(3)(iv)
24 ROP	4-5.5.1 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 and to provide continuous load paths for these forces to the foundation or anchorage system. The number and type of fasteners used shall be capable of transferring all forces between elements being joined. 4-5.5.2 For Wind Zone II and Wind Zone III, roof ~~trusses~~ framing members shall be ~~secured~~ securely fastened at the vertical bearing points to resist design overturning, uplift and sliding forces. When engineered connectors are not installed, roof framing members shall be secured at the vertical	305(e)(1) (1) Roof framing shall be securely fastened to wall framing, walls to floor structure, and floor structure to chassis to secure and maintain continuity between the floor and chassis in order to resist wind overturning, uplift, and sliding **and to provide continuous load paths for these forces to the foundation or anchorage system. The number and type of fasteners used shall be capable of transferring all forces between elements being joined.** (2) For Wind Zone II and Wind Zone III, roof **framing members** shall be **securely fastened at the vertical bearing points to resist design overturning, uplift and sliding forces. When engineered connectors are not installed, roof**	305(e)(1) (e) Fastening of structural systems. (1) Roof framing shall be securely fastened to wall framing, walls to floor structure, and floor structure to chassis to secure and maintain continuity between the floor and chassis, so as to resist wind overturning, uplift, and sliding as specified in this part. (2) For Wind Zones II and III, roof trusses shall be secured to exterior wall framing members (studs), and exterior wall framing members (studs) shall be secured to floor framing members, with 26 gage minimum steel strapping or brackets or by a

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
24 con't	bearing points to ~~exterior~~ wall framing members (studs) and ~~exterior~~ wall framing members (studs) shall be secured to floor framing members with with 0.016 in (.4 mm) base metal. minimum steel strapping or engineered connectors ~~brackets~~, or by a combination of with 0.016 in (.4 mm) base metal. minimum steel strapping or engineered connectors ~~brackets~~, and structural-rated wall sheating that overlaps the roof and floor system . Steel strapping or engineered connectors ~~brackets~~ shall be installed at a maximum spacing of 24 in. (610 mm) on center in Wind Zone II and 16 in. (407 mm) on center in Wind Zone III. ~~The number and type of fasteners used to secure the steel strapping, brackets or structural sheating shall be capable of transferring all uplift forces between elements being joined.~~ Exception: Where substantiated by structural analysis, the 0.016 in (.4 mm) base metal minimum steel strapping or engineered connectors shall be permitted to be omitted when the structural rated sheathing that overlaps either the roof or floor system is capable of sustaining the applied loads.	**framing members shall be secured at the vertical bearing points** to wall framing members (studs) and wall framing members (studs) shall be secured to floor framing members with with 0.016 in (.4 mm) base metal. minimum steel strapping or **engineered connectors**, or by a combination of with 0.016 in (.4 mm) base metal. minimum steel strapping or **engineered connectors**, and structural-rated wall sheating that overlaps the roof and floor **system** . Steel strapping or **engineered connectors** shall be installed at a maximum spacing of 24 in. (610 mm) on center in Wind Zone II **and 16 in. (407 mm) on center in Wind Zone III. Except where substantiated by structural analysis, the 0.016 in (.4 mm) base metal minimum steel strapping or engineered connectors shall be permitted to be omitted when the structural rated sheathing that overlaps either the roof or floor system is capable of sustaining the applied loads.**	combination of 26 gage minimum steel strapping or brackets and structural rated wall sheathing that overlaps the roof and floor. Steel strapping or brackets shall be installed at a maximum spacing of 24" on center in Wind Zone II and at a maximum of 16" on center in Wind Zone III. The number and type of fasteners used to secure the steel straps or brackets or structural sheathing shall be capable of transferring all uplift forces between elements being joined.
25 ROP	4-5.7.1 Floor assemblies , including stairways, landings, decks, and porches provided by the manufacturer, shall be designed in accordance with accepted engineering practice standards to support a minimum uniform live load of 40 lb/ft2 (195 k/m2) plus the dead load of the materials. Exterior balconies shall be designed to support a minimum uniform live load of 60 lb/ft2 (292.5 k/m2) plus the dead load of the materials. In addition (but not	305(g)(1) (1) Floor assemblies **, including stairways, landings, decks, and porches provided by the manufacturer,** shall be designed in accordance with accepted engineering practice standards to support a minimum uniform live load of 40 lb/ft2 (195 k/m2) plus the dead load of the materials. **Exterior balconies shall be designed to support a minimum uniform live load of 60 lb/ft2 (292.5**	305(g)(1) (g) Floors. (1) Floor assemblies shall be designed in accordance with accepted engineering practice standards to support a minimum uniform live load of 40 lb/ft2 plus the dead load of the materials. In addition (but not simultaneously), floors shall be able to support a 200-pound concentrated load on a one-inch diameter disc at the most critical location with a maximum deflection not to exceed one-

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
25 ROP Con't	simultaneously), floors shall be able to support a 200-lb (90.7 kg) concentrated load on a 1-in. (25-mm) diameter disc at the most critical location, with a maximum deflection not to exceed 1/8 in. (3 mm) relative to floor framing. Perimeter wood joists of more than 6 in. (152 mm) depth shall be stabilized against overturning from superimposed loads in accordance with the following: (a) At ends, by solid blocking not less than 2 in. (51 mm) thickness by full depth of joist or by connecting to a continuous header not less than 2-in. (51-mm) thickness and not less than the depth of the joist with connecting devices. (b) At 8-ft (2.4-m) maximum intermediate spacing, by solid blocking or by wood cross-bridging of not less than 1 in. x 3 in. (25 mm x 76 mm), metal cross-bridging of equal strength, or by other approved methods.	**k/m2) plus the dead load of the materials.** In addition (but not simultaneously), floors shall be able to support a 200-lb (90.7 kg) concentrated load on a 1-in. (25-mm) diameter disc at the most critical location, with a maximum deflection not to exceed 1/8 in. (3 mm) relative to floor framing. Perimeter wood joists of more than 6 in. (152 mm) depth shall be stabilized against overturning from superimposed loads in accordance with the following: (i) At ends, by solid blocking not less than 2 in. (51 mm) thickness by full depth of joist or by connecting to a continuous header not less than 2-in. (51-mm) thickness and not less than the depth of the joist with connecting devices. (ii) At 8-ft (2.4-m) maximum intermediate spacing, by solid blocking or by wood cross-bridging of not less than 1 in. x 3 in. (25 mm x 76 mm), metal cross-bridging of equal strength, or by other approved methods.	eighth inch relative to floor framing. Perimeter wood joists of more than six inches depth shall be stabilized against overturning from superimposed loads as follows: at ends by solid blocking not less than two-inch thickness by full depth of joist, or by connecting to a continuous header not less than two-inch thickness and not less than the depth of the joist with connecting devices; at eight-feet maximum intermediate spacing by solid blocking or by wood cross-bridging of not less than one inch by three inches, metal cross-bridging of equal strength, or by other approved methods.
26 ROP	4-5.7.3 Wood panel products used as floor or subfloor materials on the exterior of the home, such as in recessed entry ways, shall be rated for exterior exposure and shall be protected from moisture by sealing or applying nonabsorbent overlay with water resistant adhesive.	305(g)(3) (3) **Wood panel products used as floor or subfloor materials on the exterior of the home, such as in recessed entry ways, shall be rated for exterior exposure and shall be protected from moisture by sealing or applying nonabsorbent overlay with water resistant adhesive.**	New material not currently addressed in 3280, 305(3) new section
27 ROP	4-6.2.1 The manufacturer shall provide printed instructions with each manufactured home that specify the location and required capacity of stabilizing devices on which the design is based. In addition to the printed instructions, each column support pier location required along the marriage	306(b) (b) The manufacturer shall provide printed instructions with each manufactured home that specify the location and required capacity of stabilizing devices on which the design is based. **In addition to the printed instructions, each column**	306(b) (b) Contents of instructions. (1) The manufacturer shall provide printed instructions with each manufactured home specifying the location and required capacity of stabilizing devices on which the design is based. The manufacturer shall provide

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	line(s) of multisection manufactured homes shall be identified by paint, label, decal, stencil, or other acceptable method at each pier location. Such location identifications shall be visible after the home is installed. The manufacturer shall provide drawings and specifications, certified by a registered professional engineer or architect, that indicate at least one acceptable system of anchoring, including the details or required straps or cables, their end connections, and all other devices needed to transfer the wind loads from the manufactured home to an anchoring or foundation system.	**support pier location required along the marriage line(s) of multisection manufactured homes shall be identified by paint, label, decal, stencil, or other acceptable method at each pier location. Such location identifications shall be visible after the home is installed.** The manufacturer shall provide drawings and specifications, certified by a registered professional engineer or architect, that indicate at least one acceptable system of anchoring, including the details or required straps or cables, their end connections, and all other devices needed to transfer the wind loads from the manufactured home to an anchoring or foundation system.	drawings and specifications certified by a registered professional engineer or architect indicating at least one acceptable system of anchoring, including the details of required straps or cables, their end connections, and all other devices needed to transfer the wind loads from the manufactured home to an anchoring or foundation system.
28 ROP ROC	4-6.4 Requirements for Ties. Manufactured homes in Wind Zone I shall require only diagonal ties. These ties shall be placed along the main frame and below the outer side walls. All manufactured homes designed to be located in Wind Zone II and Wind Zone III shall have ~~a vertical tie installed at each diagonal tie location~~ both vertical and diagonal ties below the outer side walls.	306(d) (d) Requirements for Ties. Manufactured homes in Wind Zone I shall require only diagonal ties. These ties shall be placed along the main frame and below the outer sidewalls. All manufactured homes designed to be located in Wind Zone II and Wind Zone III **both vertical and diagonal ties below the outer side walls.**	306(d) (d) Requirements for ties. Manufactured homes in Wind Zone I require only diagonal ties. These ties shall be placed along the main frame and below the outer side walls. All manufactured homes designed to be located in Wind Zones II and III shall have a vertical tie installed at each diagonal tie location.
29 ROP	4-8.1(2) Particleboard used as flooring materials (manufactured home decking – MHD) shall not emit formaldehyde in excess of 0.20 parts per million (ppm) as specified in ANSI A208.1, *Wood Particle Board*, Table B and as measured by the air chamber test specified in Section 5.6.	308(a)(2) (2) Particleboard **used as flooring** materials **(manufactured home decking – MHD)** shall not emit formaldehyde in excess of **0.20** parts per million (ppm) **as specified in ANSI A208.1-1993, *Wood Particle Board*, Table B** and as measured by the air chamber test specified in Section 3280.406.	308(a)(2) (2) Particleboard materials shall not emit formaldehyde in excess of 0.3 ppm as measured by the air chamber test specified in Sec. 3280.406.
30 ROP	Add a new Section 4-8.1(c) to read as follows: (c) Particleboard materials used in applications other than flooring shall not emit formaldehyde in	308(a)(3) (3) **Particleboard materials used in applications other than flooring shall not emit**	New material not currently addressed in 3280, 308(a)(3)

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	excess of 0.30 ppm as specified in ANSI A208.1-1993, Table A and as measured by the air chamber test specified in Section 5-6.	**formaldehyde in excess of 0.30 ppm as specified in ANSI A208.1-1993, Table A and as measured by the air chamber test specified in Section 3280.406.**	
31 ROP	Add a new 4-8.1(d) to read as follows: (d) Medium Density Fiberboard (MDF) shall not emit formaldehyde in excess of 0.3 ppm, as specified in ANSI A208.2 measured by the air chamber test specified in Section 5-6. Also, add to the Chapter 11, Referenced Publications, the following: ANSI Publication: ANSI A 208.2 Medium Density Fiberboard for Interior Use, 1994.	308(a)(4) (4) **Medium Density Fiberboard (MDF) shall not emit formaldehyde in excess of 0.3 ppm, as specified in ANSI A208.2 measured by the air chamber test specified in Section 3280.406.**	New material not currently addressed in 3280, 308(a)(4)
32 ROP	Delete 4-9 in its entirely	309 Deleted	3280.309 Health Notice on formaldehyde emissions. (a) Each manufactured home shall have a Health Notice on formaldehyde emissions prominently displayed in a temporary manner in the kitchen (i.e., countertop or exposed cabinet face). The Notice shall read as follows: Important Health Notice Some of the building materials used in this home emit formaldehyde. Eye, nose, and throat irritation, headache, nausea, and a variety of asthma-like symptoms, including shortness of breath, have been reported as a result of formaldehyde exposure. Elderly persons and young children, as well as anyone with a history of asthma, allergies, or lung problems, may be at greater risk. Research is continuing on the possible long-term effects of exposure to formaldehyde.

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
32 ROP con't			Reduced ventilation resulting from energy efficiency standards may allow formaldehyde and other contaminants to accumulate in the indoor air. Additional ventilation to dilute the indoor air may be obtained from a passive or mechanical ventilation system offered by the manufacturer. Consult your dealer for information about the ventilation options offered with this home. High indoor temperatures and humidity raise formaldehyde levels. When a home is to be located in areas subject to extreme summer temperatures, an air-conditioning system can be used to control indoor temperature levels. Check the comfort cooling certificate to determine if this home has been equipped or designed for the installation of an air-conditioning system. If you have any questions regarding the health effects of formaldehyde, consult your doctor or local health department. (b) The Notice shall be legible and typed using letters at least \1/ 4\ inch in size. The title shall be typed using letters at least \3/4\ inch in size. (c) The Notice shall not be removed by any party until the entire sales transaction has been completed (refer to Part 3282—Manufactured Home Procedural and Enforcement Regulations for provisions regarding a sales transaction). (d) A copy of the Notice shall be included in the Consumer Manual (refer to Part 3283--Manufactured Home Consumer Manual Requirements).
33 ROP	5-1.1* Proof Load Tests. Every structural assembly tested shall be capable of sustaining its dead load	401(a) (a) Proof Load Tests. Every structural assembly	401(a) (a) Proof load tests. Every structural assembly

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
33 ROP con't	plus superimposed live loads equal to 1.75 times the required live loads for a period of 12 hours without failure. Tests shall be conducted with loads applied and deflections recorded in 1/4 design live load increments at 10-minute intervals until 1.25 times design live load plus dead load has been reached. Additional load shall then be applied continuously until 1.75 times design live load plus dead load has been reached. Assembly failure shall be considered as design live load deflection (or residual deflection measured 12 hours after live load removal) that is greater than the limits set in 4-5.4, rupture, fracture, or excessive yielding. Design live load deflection criteria shall not apply when the structural assembly being evaluated does not include structural framing members. An assembly to be tested shall be of the minimum quality of materials and workmanship of the production. Each test assembly, component, or subassembly shall be identified as to type and quality or grade of material. All assemblies, components, or subassemblies qualifying under this test shall be subject to a continuing qualification testing program acceptable to the regulatory agency. A-5.1.1 Examples for when design live load deflection criteria does not apply are: exterior cladding tests where the cladding and its fastening are evaluated but the framing system, necessary to test the cladding, is not being evaluated.)	tested shall be capable of sustaining its dead load plus superimposed live loads equal to 1.75 times the required live loads for a period of 12 hours without failure. Tests shall be conducted with loads applied and deflections recorded in 1/4 design live load increments at 10-minute intervals until 1.25 times design live load plus dead load has been reached. Additional load shall then be applied continuously until 1.75 times design live load plus dead load has been reached. Assembly failure shall be considered as design live load deflection (or residual deflection measured 12 hours after live load removal) that is greater than the limits set in Section 3280.305(d), rupture, fracture, or excessive yielding. **Design live load deflection criteria shall not apply when the structural assembly being evaluated does not include structural framing members.** An assembly to be tested shall be of the minimum quality of materials and workmanship of the production. Each test assembly, component, or subassembly shall be identified as to type and quality or grade of material. All assemblies, components, or subassemblies qualifying under this test shall be subject to a continuing qualification testing program acceptable to the regulatory agency.	tested shall be capable of sustaining its dead load plus superimposed live loads equal to 1.75 times the required live loads for a period of 12 hours without failure. Tests shall be conducted with loads applied and deflections recorded in \1/4\ design live load increments at 10-minute intervals until 1.25 times design live load plus dead load has been reached. Additional load shall then be applied continuously until 1.75 times design live load plus dead load has been reached. Assembly failure shall be considered as design live load deflection (or residual deflection measured 12 hours after live load removal) which is greater than the limits set in Sec. 3280.305(d), rupture, fracture, or excessive yielding. An assembly to be tested shall be of the minimum quality of materials and workmanship of the production. Each test assembly, component or subassembly shall be identified as to type and quality or grade of material. All assemblies, components or subassemblies qualifying under this section shall be subject to a continuing qualification testing program acceptable to the Department. Appendix material not included in 3280
34 ROP	Revise 5-1.2 and add a new appendix item to read as follows: 5-1.2 Ultimate Load Tests. Ultimate load tests shall	401(b) (b) Ultimate Load Tests. Ultimate load tests shall be performed on a minimum of three assemblies or	401(b) (b) Ultimate load tests. Ultimate load tests shall be performed on a minimum of three assemblies or

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
34 ROP con't	be performed on a minimum of three assemblies or components to generally evaluate the structural design. Every structural assembly or component tested shall be capable of sustaining its total dead load plus the design live load increased by a factor of safety of at least 2.5. A factor of safety greater than 2.5 shall be used when required by an applicable reference standard in Section 4-4. Tests shall be conducted with loads applied and deflections recorded in 1/4 design live load increments at 10-minute intervals until 1.25 times design live load plus dead load has been reached. Additional loading shall then be applied continuously until failure occurs, or the total of the factor of safety times the design live load plus the dead load is reached. Assembly failure shall be considered as design live load deflection greater than the limits set in 4-5.4, rupture, fracture, or excessive yielding. Design live load deflection criteria shall not apply when the structural assembly being evaluated does not include structural framing members. Assemblies to be tested shall be representative of average quality or materials and workmanship of the production. Each test assembly, component, or subassembly shall be identified as to type and quality or grade of material. All assemblies, components, or subassemblies qualifying under this test shall be subject to a periodic qualification testing program acceptable to the regulatory agency.	components to generally evaluate the structural design. Every structural assembly or component tested shall be capable of sustaining its total dead load plus the design live load increased by a factor of safety of at least 2.5. A factor of safety greater than 2.5 shall be used when required by an applicable reference standard in Section 4-4. Tests shall be conducted with loads applied and deflections recorded in 1/4 design live load increments at 10-minute intervals until 1.25 times design live load plus dead load has been reached. Additional loading shall then be applied continuously until failure occurs, or the total of the factor of safety times the design live load plus the dead load is reached. Assembly failure shall be considered as design live load deflection greater than the limits set in 4-5.4, rupture, fracture, or excessive yielding. **Design live load deflection criteria shall not apply when the structural assembly being evaluated does not include structural framing members.** Assemblies to be tested shall be representative of average quality or materials and workmanship of the production. Each test assembly, component, or subassembly shall be identified as to type and quality or grade of material. All assemblies, components, or subassemblies qualifying under this test shall be subject to a periodic qualification testing program acceptable to the regulatory agency.	components to generally evaluate the structural design. Every structural assembly or component tested shall be capable of sustaining its total dead load plus the design live load increased by a factor of safety of at least 2.5. A factor of safety greater than 2.5 shall be used when required by an applicable reference standard in Sec. 3280.304(b)(1). Tests shall be conducted with loads applied and deflections recorded in \1/4\ design live load increments at 10-minute intervals until 1.25 times design live load plus dead load has been reached. Additional loading shall then be applied continuously until failure occurs or the total of the factor of safety times the design live load plus the dead load is reached. Assembly failure shall be considered as design live load deflection greater than the limits set in Sec. 3208.305(d), rupture, fracture, or excessive yielding. Assemblies to be tested shall be representative of average quality or materials and workmanship of the production. Each test assembly, component, or sub-assembly shall be identified as to type and quality or grade of material. All assemblies, components, or sub-assemblies qualifying under this section shall be subject to a periodic qualification testing program acceptable to the Department.
	A-5.1.2 Examples for when design live load deflection criteria does not apply are: exterior cladding tests where the cladding and its fastening		Appendix material not included in the 3280

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	are evaluated but the framing system, necessary to test the cladding, is not being evaluated.)		
35 ROP ROC 35 ROP ROC con't	5-2 Test Procedure for Roof Trusses. 5-2.1 Roof Load Tests. The following is the roof truss test procedure for vertical loading condition. Where roof trusses act as support for other members, have eave or cornice projections, or support concentrated loads, roof trusses shall be tested for those conditions. 5-2.2 General. Trusses shall be permitted to be tested in a truss test fixture which replicates the design loads, and actual support points, and does not restrain horizontal movement. When tested singly or in groups of two or more trusses, trusses shall be mounted on supports and positioned as intended to be installed in the manufactured home to give the required clear span distance (L) and eave or cornice distance (Lo), if applicable, as specified in the design. Truss tests shall be performed on a minimum of three trusses to evaluate the design. 5-2.2.1 When trusses are tested singly, trusses shall be positioned in a test fixture with supports properly located and have the roof loads evenly applied. See Figure 5-2.2.1. 5-2.2.2 When tested in groups of two or more, the top chords shall be permitted to be sheathed with nominal 1/4 in. x 12 in. (6 mm x 305 mm) plywood strips. The plywood strips shall be at least long enough to cover the top chords of the trusses at the designated design truss spacing. Adjacent plywood strips shall be separated by at least 1/8 in. (3 mm). The plywood strips shall be nailed with 4d nails or	**402 Test Procedure for Roof Trusses.** **(a) Roof Load Tests. The following is the roof truss test procedure for vertical loading condition. Where roof trusses act as support for other members, have eave or cornice projections, or support concentrated loads, roof trusses shall be tested for those conditions.** **(b) General. Trusses shall be permitted to be tested in a truss test fixture which replicates the design loads, and actual support points, and does not restrain horizontal movement. When tested singly or in groups of two or more trusses, trusses shall be mounted on supports and positioned as intended to be installed in the manufactured home to give the required clear span distance (L) and eave or cornice distance (Lo), if applicable, as specified in the design. Truss tests shall be performed on a minimum of three trusses to evaluate the design.** **(1) When trusses are tested singly, trusses shall be positioned in a test fixture with supports properly located and have the roof loads evenly applied. See Figure 3280.402(b)(1).** **(2) When tested in groups of two or more, the top chords shall be permitted to be sheathed with nominal 1/4 in. x 12 in. (6 mm x 305 mm) plywood strips. The plywood strips shall be at least long enough to cover the top chords of the trusses at the designated design truss spacing. Adjacent plywood strips shall be separated by at least 1/8 in. (3 mm). The plywood strips shall be**	402 Test procedure for roof trusses. (a) Roof load tests. The following is an acceptable test procedure, consistent with the provisions of Sec. 3280.401, for roof trusses that are supported at the ends and support design loads. Where roof trusses act as support for other members, act as cantilevers, or support concentrated loads, they shall be tested accordingly. (b) General. Trusses may be tested in pairs or singly in a suitable test facility. When tested singly, simulated lateral support of the test assembly may be provided, but in no case shall this lateral support exceed that which is specified for the completed manufactured home. When tested in pairs, the trusses shall be spaced at the design spacing and shall be mounted on solid support accurately positioned to give the required clear span distance (L) as specified in the design. The top and bottom chords shall be braced and covered with the material, with connections or method of attachment, as specified by the completed manufactured home. (1) As an alternate test procedure, the top chord may be sheathed with \1/4\ inch by 12 inch plywood strips. The plywood strips shall be at least long enough to cover the top chords of the trusses at the designated design truss spacing. Adjacent plywood strips must be separated by at least \1/8\ inch. The plywood strip shall be nailed with 4d nails or equivalent staples not closer than 8 inches on center along the top chord. The bottom chords of

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
35 ROP ROC con't	equivalent staples no closer than 8 in. (203 mm) on center along the top chord. The bottom chords of the adjacent trusses shall be permitted to be one of the following: (1) Unbraced; (2) Laterally braced together (not cross-braced) with 1 in. x 2 in. (25 mm x 51 mm) stripping no closer than 24 in. (610 mm) on center, nailed with only one 6d nail at each truss. See Figure 5-2.2.2. 5-2.3 Measuring and Loading Methods. Deflections of each truss shall be measured relative to a fixed reference datum. Deflections shall be measured at the free end of an eave or cornice projection and at as many bottom chord panel points as necessary to obtain an accurate representation of the deflected truss(es) but shall be measured at least at the truss midspan, at each panel point, and at midspan between each panel point. Deflections shall be read and recorded to the nearest millimeter (1/32 in). Dead load shall be applied to the top and bottom chord and live load applied to the top chord through a suitable hydraulic, pneumatic, or mechanical system or weights to simulate design loads. Load unit weights for uniformly distributed top chord loads shall be separated so that arch action does not occur and spaced not more than 12 in. (305 mm) on center so as to simulate uniform loading. Bottom chord loading shall be spaced as uniformly as practical. Truss gravity loads shall be calculated based on the overall truss length (horizontal projection) including eave or cornice projections. 5-2.4 General Test Procedures. General test procedures include the following methods. 5-2.4.1 Dead Load. Measure and record initial	**nailed with 4d nails or equivalent staples no closer than 8 in. (203 mm) on center along the top chord. The bottom chords of the adjacent trusses shall be permitted to be one of the following:** **(1) Unbraced;** **(2) Laterally braced together (not cross-braced) with 1 in. x 2 in. (25 mm x 51 mm) stripping no closer than 24 in. (610 mm) on center, nailed with only one 6d nail at each truss. See Figure 3280.402(b)(2).** **(c) Measuring and Loading Methods. Deflections of each truss shall be measured relative to a fixed reference datum. Deflections shall be measured at the free end of an eave or cornice projection and at as many bottom chord panel points as necessary to obtain an accurate representation of the deflected truss(es) but shall be measured at least at the truss midspan, at each panel point, and at midspan between each panel point. Deflections shall be read and recorded to the nearest millimeter (1/32 in). Dead load shall be applied to the top and bottom chord and live load applied to the top chord through a suitable hydraulic, pneumatic, or mechanical system or weights to simulate design loads. Load unit weights for uniformly distributed top chord loads shall be separated so that arch action does not occur and spaced not more than 12 in. (305 mm) on center so as to simulate uniform loading. Bottom chord loading shall be spaced as uniformly as practical. Truss gravity loads shall be calculated based on the overall truss length (horizontal projection) including eave or cornice**	the adjacent trusses may be either: (i) Unbraced, (ii) Laterally braced together (not cross braced) with 1" x 2" stripping not closer than 24 inches on center nailed with only one 6d nail at each truss, or (iii) Covered with the material, with connections or methods of attachment, as specified for the completed manufactured home. (2) Truss deflections will be measured relative to a taut wire running over the support and weighted at the end to insure constant tension or other approved methods. Deflections will be measured at the two quarter points and at midspan. Loading shall be applied to the top chord through a suitable hydraulic, pneumatic, or mechanical system, masonry units, or weights to simulate design loads. Load units for uniformly distributed loads shall be separated so that arch action does not occur, and shall be spaced not greater than 12 inches on center so as to simulate uniform loading. (c) Nondestructive test procedure--(1) Dead load plus live load. (i) Noting figure A-1, measure and record initial elevation of the truss in test position at no load. (ii) Apply load units to the top chord of the truss equal to the full dead load of roof and ceiling. Measure and record deflections. (iii) Maintaining the dead load, add live load in approximate \1/4\ design live load increments. Measure the deflections after each loading increment. Apply incremental loads at a uniform rate such that approximately one-half hour is required to establish the total design load condition.

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
35 ROP ROC cont	elevation of the truss(es) in the test position at no load. Apply dead loads to the top and bottom chord of the truss that are representative of the weights of materials to be supported by the truss. The actual ceiling/roof assembly dead loads shall be used with a minimum of 4 psf (192 Pa)on the top chord and 2 psf (96 Pa) on the bottom chord. Greater dead loads shall be applied to the top and bottom chords if required, to represent the actual loads. Dead loads to be applied to the truss test assembly shall be permitted to include only the weights of materials supported by the truss and not the weight of the truss itself. However, readings from load cells (when used) on which the test truss rests shall reflect the sum of the applied load plus the weight of the truss. Apply dead loads and hold for five minutes. Measure and record the deflections. 5-2.4.2 Live Load. Maintaining the dead loads, apply live load to the top chord in approximate 1/4 live load increments until dead load plus 1.25 times the live load is reached. Measure and record the deflections at a minimum of one minute after each live load increment has been applied and five minutes after full live load has been reached. Apply incremental loads at a uniform rate such that approximately one-half hour is required to reach full design live load. 5-2.4.3 Recovery Phase. Remove the total live load (1.25 times the roof live load). Measure and record the deflections five minutes after the total live load has been removed. 5-2.4.4 Overload Phase. Additional loading shall then be applied continuously until the dead load plus 2.5 times the design live load is reached. This	**projections.** **(d) General Test Procedures. General test procedures include the following methods.** **(1) Dead Load. Measure and record initial elevation of the truss(es) in the test position at no load. Apply dead loads to the top and bottom chord of the truss that are representative of the weights of materials to be supported by the truss. The actual ceiling/roof assembly dead loads shall be used with a minimum of 4 psf (192 Pa)on the top chord and 2 psf (96 Pa) on the bottom chord. Greater dead loads shall be applied to the top and bottom chords if required, to represent the actual loads. Dead loads to be applied to the truss test assembly shall be permitted to include only the weights of materials supported by the truss and not the weight of the truss itself. However, readings from load cells (when used) on which the test truss rests shall reflect the sum of the applied load plus the weight of the truss. Apply dead loads and hold for five minutes. Measure and record the deflections.** **(2) Live Load. Maintaining the dead loads, apply live load to the top chord in approximate 1/4 live load increments until dead load plus 1.25 times the live load is reached. Measure and record the deflections at a minimum of one minute after each live load increment has been applied and five minutes after full live load has been reached. Apply incremental loads at a uniform rate such that approximately one-half hour is required to reach full design live load.** **(3) Recovery Phase. Remove the total live load (1.25 times the roof live load). Measure**	Measure and record the deflections five minutes after loads have been applied. The maximum deflection due to design live load (deflection measured in step (iii) minus step (ii)) shall not exceed L/ 180, where L is a clear span measured in the same units. (iv) Continue to load truss to dead load plus 1.75 times the design live load. Maintain this loading for 12 hours and inspect the truss for failure. (v) Remove the total superimposed live load. Trusses not recovering to at least the L/180 position within 12 hours shall be considered as failing. (2) Uplift loads. This test shall only be required for truss designs which may be critical under uplift load conditions. (i) Measure and record initial elevation of the truss in an inverted test position at no load. Bottom chord of the truss shall be mounted in the horizontal position. (ii) Apply the uplift load as stated in Sec. 3280.305(c) to the bottom chord of the truss. Measure and record the deflections 5 minutes after the load has been applied. (iii) Continue to load the truss to 1.75 times the design uplift load. Maintain this load for 3 hours and inspect the truss for failure. (iv) Remove applied loads and within three hours the truss must recover to at least L/180 position, where L is a clear span measured in the same units. (d) Destructive test procedure. (1) Destructive tests shall be performed on three trusses to generally evaluate the truss design. (2) Noting Figure A-1, apply the load units to the top chord of the truss assembly equal to full dead

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
35 ROP ROC con't	overload condition shall be maintained for five minutes. 5-2.4.5 Acceptance Criteria. The truss design shall be considered to have passed if all of the following conditions are met: (1) No load to dead load deflection shall be less than L/480 for simply supported clear spans and less than Lo/180 for eave and cornice projections, and (2) Dead load to design live load deflections shall be less than L/180 for simply supported clear spans and less than Lo/90 for eave and cornice projections, and (3) The truss shall recover to at least L/480 for simply supported clear spans and Lo/180 for eave and cornice projections within five minutes after the total live load has been removed, and (4) The truss shall maintain the overload condition for five minutes without rupture or fracture. 5-2.5 Uplift Loads. This test shall only be required for truss designs which may be critical under uplift load conditions. 5-2.5.1 Place the truss in the test fixture and position it as intended to be installed in the manufactured home. See Figure 5-2.5.1. Position the load measurement devices to register the wind uplift loads which will be applied to the top chord of the truss. The uplift loads shall be applied through tension devices not wider than 1 inch (25 mm) and spaced not greater than 6 inches (152 mm) on center so as to simulate uniform loading. Gravity and wind uplift load tests may be performed on the same truss in this single set-up mode. Measure and record initial elevation of the	**and record the deflections five minutes after the total live load has been removed.** **(4) Overload Phase. Additional loading shall then be applied continuously until the dead load plus 2.5 times the design live load is reached. This overload condition shall be maintained for five minutes.** **(5) Acceptance Criteria. The truss design shall be considered to have passed if all of the following conditions are met:** **(i) No load to dead load deflection shall be less than L/480 for simply supported clear spans and less than Lo/180 for eave and cornice projections, and** **(ii) Dead load to design live load deflections shall be less than L/180 for simply supported clear spans and less than Lo/90 for eave and cornice projections, and** **(iii) The truss shall recover to at least L/480 for simply supported clear spans and Lo/180 for eave and cornice projections within five minutes after the total live load has been removed, and** **(iv) The truss shall maintain the overload condition for five minutes without rupture or fracture.** **(e) Uplift Loads. This test shall only be required for truss designs which may be critical under uplift load conditions.** **(1) Place the truss in the test fixture and position it as intended to be installed in the manufactured home. See Figure 3280.402(e)(1). Position the load measurement devices to register the wind uplift loads which will be applied to the top chord of the truss. The uplift loads shall be applied through tension devices**	load of roof and ceiling. Measure and record deflections. Then apply load and record deflections in \1/4\ design live load increments at 10-minute intervals until 1.25 times design live load plus dead load has been reached. (3) Additional loading shall then be applied continuously until failure occurs or the factor of safety times the design live load plus the dead load is reached. (4) Assembly failure shall be considered as design live load deflection greater than the limits set in Sec. 3280.305(d), rupture, fracture, or excessive yielding. (5) The assembly shall be capable of sustaining the dead load plus the applicable factor of safety times the design live load (the applicable factor of safety for wood trusses shall be taken as 2.50). (e) Trusses qualifying under the nondestructive test procedure. Tests Sec. 3208.402(c) (1) and (2) (when required), shall be subject to a continuing qualification testing program acceptable to the Department. Trusses qualifying under the destructive test procedures, Tests Sec. 3280.402 (c)(2) (when required), and (d), shall be subject to periodic tests only.

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
35 ROP ROC con't	bottom chord of the truss in the test position at the midspan of the truss, at each panel point, and midspan between each panel point as well as at the end of the eave or cornice projections greater than 12 inches (305 mm). Eave or cornice projection loads are applied separately for eaves or cornice projections greater than 12 inches (305 mm). For eave or cornice projections greater than 12 inches (305 mm), the additional required load shall be applied to the eave simultaneously with the main body load. For eave or cornice projections 12 inches (305 mm)or less, add the additional required load to the main body load and apply it to the entire top chord. 5-2.5.2 Apply the uplift load to the top chord of the truss. For Wind Zone I, the net uplift load for the clear span of the truss is 9 psf (431 Pa) and 22.5 psf (1.1 kPa) for the eave or cornice projections of the truss. For Wind Zones II and III, the net uplift load for the clear span and eave or cornice projections shall be determined by subtracting the minimum dead load from the uplift load provided in Table 4-5.3.1.2(2). Measure and record the deflection 5 minutes after the net uplift load has been applied. Design load deflection shall be less than L/180 for simply supported clear span and less than Lo/90 for eave or cornice projections. 5-2.5.3 Continue to load the truss to 2.5 times the net uplift load. Maintain the full load for 1 minute and inspect the truss for rupture or fracture. 5-2.5.4 The uplift load tests shall be performed on a minimum of three single trusses to evaluate the truss design. 5-2.6 Follow Up Testing. Follow up testing procedures shall include the following.	**not wider than 1 inch (25 mm) and spaced not greater than 6 inches (152 mm) on center so as to simulate uniform loading. Gravity and wind uplift load tests may be performed on the same truss in this single set-up mode. Measure and record initial elevation of the bottom chord of the truss in the test position at the midspan of the truss, at each panel point, and midspan between each panel point as well as at the end of the eave or cornice projections greater than 12 inches (305 mm). Eave or cornice projection loads are applied separately for eaves or cornice projections greater than 12 inches (305 mm). For eave or cornice projections greater than 12 inches (305 mm), the additional required load shall be applied to the eave simultaneously with the main body load. For eave or cornice projections 12 inches (305 mm)or less, add the additional required load to the main body load and apply it to the entire top chord.** **(2) Apply the uplift load to the top chord of the truss. For Wind Zone I, the net uplift load for the clear span of the truss is 9 psf (431 Pa) and 22.5 psf (1.1 kPa) for the eave or cornice projections of the truss. For Wind Zones II and III, the net uplift load for the clear span and eave or cornice projections shall be determined by subtracting the minimum dead load from the uplift load provided in Table 4-5.3.1.2(2). Measure and record the deflection 5 minutes after the net uplift load has been applied. Design load deflection shall be less than L/180 for simply supported clear span and less than Lo/90 for eave or cornice projections.** **(3) Continue to load the truss to 2.5 times the**	

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
35 ROP ROC con't	5-2.6.1 Production trusses qualifying under these test procedures shall be subject to a continuing witnessed independent third party or an approved testing program as specified in 5-2.6.3. Manufacturers of listed or labeled trusses shall follow an in-house quality control program approved by an independent third party as specified in 5-2.7. Home manufacturers producing trusses which are not listed or labeled, for their own use, shall be subject to a follow-up testing program as specified in 5-2.6.3 and a truss certification program as specified in 5-2.7. 5-2.6.2 Truss designs that are qualified but not in production are not subject to follow-up testing until produced. When the truss design is brought into production a follow up test is to be performed if the truss design has been out of production for more than six months. 5-2.6.3 The frequency of truss manufacturer's quality control follow-up testing for trusses shall be one test in 4000 trusses or once every 6 months, whichever is more frequent, for every truss design produced. 5-2.7 Truss Certification Program. The truss certification program shall include, as a minimum, procedures for quality of materials, workmanship and manufacturing tolerances, description and calibration of test equipment, truss retesting criteria, and procedures in case of noncomplying results.	**net uplift load. Maintain the full load for 1 minute and inspect the truss for rupture or fracture.** **(4) The uplift load tests shall be performed on a minimum of three single trusses to evaluate the truss design.** **(f) Follow Up Testing. Follow up testing procedures shall include the following.** **(1) Production trusses qualifying under these test procedures shall be subject to a continuing witnessed independent third party or an approved testing program as specified in Section 3280.402(f)(3). Manufacturers of listed or labeled trusses shall follow an in-house quality control program approved by an independent third party as specified in Section 3280.402(g). Home manufacturers producing trusses which are not listed or labeled, for their own use, shall be subject to a follow-up testing program as specified in Section 3280(f)(3) and a truss certification program as specified in Section 3280.402(g).** **(2) Truss designs that are qualified but not in production are not subject to follow-up testing until produced. When the truss design is brought into production a follow up test is to be performed if the truss design has been out of production for more than six months.** **(3) The frequency of truss manufacturer's quality control follow-up testing for trusses shall be one test in 4000 trusses or once every 6 months, whichever is more frequent, for every truss design produced.** **(h) Truss Certification Program. The truss certification program shall include, as a**	

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
		minimum, procedures for quality of materials, workmanship and manufacturing tolerances, description and calibration of test equipment, truss retesting criteria, and procedures in case of noncomplying results. **Figures are included at the end of the document as Figures # 2a, 2b and 2c.**	
36 ROP ROC 36 ROP ROC con't	5-3 Requirements for Windows, Sliding Glass Doors, <u>and Skylights</u> used in Manufactured Homes. Existing text remains 5-3.2* Performance. 5-3.2.1 All primary windows and sliding glass doors shall comply with AAMA Standard 1701.2, Primary Window and Sliding Glass Door Voluntary Standard for Utilization in Manufactured Housing. Exception: The exterior and interior standard <u>wind pressure</u> tests shall be conducted at the design wind loads required for components and cladding specified in 4-5.3.1. <u>5-3.2.2 All skylights shall comply with AAMA /WDMA 1600/I.S 7-99. Voluntary Specifications for Skylights. Skylights shall comply with</u> exterior <u>roof coverings, sheathing, and fastenings</u> <u>wind pressure specified in 4-5.3.1</u> 5-3.3 Installation. All primary windows, and sliding glass doors, <u>and skylights</u> shall be installed in a manner that allows	403 403 Requirements for Windows, Sliding Glass Doors, **and Skylights** used in Manufactured Homes. (a) Section 3280.403 shall set the requirements for prime window and sliding doors except windows used in entry doors are components of the door and thus are excluded from these requirements (b) Performance. (1) All primary windows and sliding glass doors shall comply with AAMA Standard 1701.2, Primary Window and Sliding Glass Door Voluntary Standard for Utilization in Manufactured Housing. Exception: The exterior and interior standard **wind pressure** tests shall be conducted at the design wind loads required for components and cladding specified in Section 3280.305(c)(1). (2) All skylights shall comply with AAMA /WDMA 1600/I.S 7-99. Voluntary Specifications for Skylights. Skylights shall comply with exterior roof coverings, sheathing, and fastenings wind pressure specified in Section 3280.305(c)(1) (c) Installation. All primary windows, and sliding glass doors, **and skylights** shall be installed in a manner that allows proper operation and provides	403 3280.403 Standard for windows and sliding glass doors used in manufactured homes. (a) Scope. This section sets the requirements for prime windows and sliding glass doors except for windows used in entry doors. Windows so mounted are components of the door and thus are excluded from this standard. (b) Standard. All primary windows and sliding glass doors shall comply with AAMA Standard 1701.2-1985, Primary Window and Sliding Glass Door Voluntary Standard for Utilization in Manufactured Housing, except that by January 17, 1995, the exterior and interior pressure tests shall be conducted at the design wind loads required for components and cladding specified in Sec. 3280.305(c)(1). (c) Installation. All primary windows and sliding glass doors shall be installed in a manner which allows proper operation and provides protection

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	proper operation and provides protection against the elements. (See Section 4-7.)	protection against the elements. (See Section 3280.307.)	against the elements (see Sec. 3280.307).
		(d) Glass. (1) Safety glazing materials, where used, shall meet ANSI Z97.1-1984, ``Safety Performance Specifications and Methods of Test for Safety Glazing Materials Used in Buildings."	(d) Glass. (1) Safety glazing materials, where used, shall meet ANSI Z97.1-1984, ``Safety Performance Specifications and Methods of Test for Safety Glazing Materials Used in Buildings."
	Existing text remains	(2) Sealed insulating glass, where used, shall meet all performance requirements for Class C in accordance with ASTM E-774-92, Standard Specification for Sealed Insulating Glass Units. The sealing system shall be qualified in accordance with ASTM E-773-88 Standard Test Methods for Seal Durability of Sealed Insulating Glass Units. Each glass unit shall be permanently identified with the name of the insulating glass manufacturer.	(2) Sealed insulating glass, where used, shall meet all performance requirements for Class C in accordance with ASTM E-774-92, Standard Specification for Sealed Insulating Glass Units. The sealing system shall be qualified in accordance with ASTM E-773-88 Standard Test Methods for Seal Durability of Sealed Insulating Glass Units. Each glass unit shall be permanently identified with the name of the insulating glass manufacturer.
	5-3.5 Certification.	(e) Certification.	(e) Certification. All primary windows and sliding glass doors to be installed in manufactured homes shall be certified as complying with AAMA Standard 1701.2-1985. As of January 17, 1995, this certification must be based on tests conducted at the design wind loads specified in Sec. 3280.305(c)(1).
	5-3.5.1 All primary windows and sliding glass doors to be installed in manufactured homes shall be certified as complying with AAMA Standard 1701.2, Primary Window and Sliding Glass Door Voluntary Standard for Utilization in Manufactured Housing. This certification shall be based on tests conducted at the design wind loads specified in 4-5.3.1.	(1) All primary windows and sliding glass doors to be installed in manufactured homes shall be certified as complying with AAMA Standard 1701.2, Primary Window and Sliding Glass Door Voluntary Standard for Utilization in Manufactured Housing. This certification shall be based on tests conducted at the design wind loads specified in Sec. 3280.305(c)(1)	
	5-3.5.2 All skylights to be installed in manufactured homes shall be certified as complying with AAMA /WDMA 1600/I.S 7-99 Voluntary Specifications for Skylights. This certification shall be based on applicable design wind loads specified in 4-5.3.1.	**(2) All skylights to be installed in manufactured homes shall be certified as complying with AAMA /WDMA 1600/I.S 7-99 Voluntary Specifications for Skylights. This certification shall be based on applicable design wind loads specified in Section 3280.305(c)(1).**	
36 ROP ROC con't	5-3.5. 3 All such windows, ~~and~~ doors, and skylight shall show evidence of certification by having a quality certification label affixed to the product in accordance with ANSI Z34.1, For Certification - Third-Party Certification Program.	(3) All such windows, doors, **and skylight** shall show evidence of certification by having a quality certification label affixed to the product in accordance with ANSI Z34.1, For Certification - Third-Party Certification Program.	(1) All such windows and doors shall show evidence of certification by affixing a quality certification label to the product in accordance with ANSI Z34.1-1987, ``For Certification-Third-Party Certification Program."
	5-3.5. 4 In determining certifiability of ~~the~~ window		

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	and sliding glass door products, an independent quality assurance agency shall conduct preproduction specimen tests in accordance with AAMA 1701.2. Further, such agency shall inspect the product manufacturer's facility at least twice per year.	(4) In determining certifiability of **window and sliding glass door** products, an independent quality assurance agency shall conduct preproduction specimen tests in accordance with AAMA 1701.2. Further, such agency shall inspect the product manufacturer's facility at least twice per year.	(2) In determining certifiability of the products, an independent quality assurance agency shall conduct preproduction specimen tests in accordance with AAMA 1702.2-1985. Further, such agency shall inspect the product manufacturer's facility at least twice per year.
37 ROP	5-4.3.2 An operational check of each installed egress window or device shall be made at the manufactured home factory. All egress windows and devices shall be capable of being opened to the minimum required dimension by normal operation of the window without binding or requiring the use of tools. Windows that require the removal of the sash to meet egress size requirements are prohibited. Any window or device failing this check shall be repaired or replaced. A repaired window shall conform to its certification. Any repaired or replaced window or device shall pass the operational check.	404(c)(2) (2) An operational check of each installed egress window or device shall be made at the manufactured home factory. All egress windows and devices shall be capable of being opened to the minimum required dimension by normal operation of the window without binding or requiring the use of tools. **Windows that require the removal of the sash to meet egress size requirements are prohibited.** Any window or device failing this check shall be repaired or replaced. A repaired window shall conform to its certification. Any repaired or replaced window or device shall pass the operational check.	404(c)(2) (2) An operational check of each installed egress window or device shall be made at the manufactured home factory. All egress windows and devices shall be openable to the minimum required dimension without binding or requiring the use of tools. Any window or device failing this check shall be repaired or replaced. A repaired window shall conform to its certification. Any repaired or replaced window or device shall pass the operational check.
38 ROP	6-3 Materials. Materials used for insulation and the thermal and pressure envelopes shall be of proven effectiveness and adequate durability to ensure that required design conditions concerning thermal transmission and energy conservation are attained.	503 Materials. Materials used for insulation **and the thermal and pressure envelopes** shall be of proven effectiveness and adequate durability to ensure that required design conditions concerning thermal transmission **and energy conservation** are attained.	503 Materials used for insulation shall be of proven effectiveness and adequate durability to assure that required design conditions concerning thermal transmission are attained.
39	6-4.3 Liquid Applied Vapor Retarders. Liquid	**504(c) Liquid Applied Vapor Retarders. Liquid**	New text currently not addressed in 3280, 504(c)

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
ROP	applied vapor retarders shall be tested by a nationally recognized testing agency for use on the specific substrate to which it is applied. The test report shall include the perm rating(s) (as measured by ASTM E 96, Standard Test Methods for Water Vapor Transmission of Materials) and associated application rate(s) for the specific substrate(s).	**applied vapor retarders shall be tested by a nationally recognized testing agency for use on the specific substrate to which it is applied. The test report shall include the perm rating(s) (as measured by ASTM E 96, Standard Test Methods for Water Vapor Transmission of Materials) and associated application rate(s) for the specific substrate(s).**	
40 ROP ROC	6-4.2 Exterior Walls. 6-4.2.1 Exterior walls shall have a vapor barrier no greater than 1 perm (dry cup method) installed on the living space side of the wall, or ~~.~~ 6-4.2.2 Unventilated wall cavities shall have an external covering and/or sheathing that forms the pressure envelope. The covering and/or sheathing shall have a combined permeance of not less than 5.0 perms. In the absence of test data, combined permeance shall be permitted to be computed using the following formula: P total = (1/[(1/P1) + (1/P2)]) Where P1 and P2 are the permeance values of the exterior covering and sheathing in perms. ~~6-4.2.3~~ Formed exterior siding applied in sections with joints not caulked or sealed, shall not be considered to restrict water vapor transmission, or ~~.~~ 6-4.2.3 ~~.4~~ Wall cavities shall be constructed so that ventilation is provided to dissipate any condensation occurring in these cavities , or ~~.~~	504(b) (b) Exterior Walls. (1) Exterior walls shall have a vapor barrier no greater than 1 perm (dry cup method) installed on the living space side of the wall, or (2) Unventilated wall cavities shall have an external covering and/or sheathing that forms the pressure envelope. The covering and/or sheathing shall have a combined permeance of not less than 5.0 perms. In the absence of test data, combined permeance shall be permitted to be computed using the following formula: P total = (1/[(1/P1) + (1/P2)]) Where P1 and P2 are the permeance values of the exterior covering and sheathing in perms. Formed exterior siding applied in sections with joints not caulked or sealed, shall not be considered to restrict water vapor transmission, or . (3) Wall cavities shall be constructed so that ventilation is provided to dissipate any condensation occurring in these cavities , or .	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 (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: PTotal=(1/[(1/P1)+(1/P2)]) where P1 and P2 are the permeance values of the exterior covering and sheathing in perms. Formed exterior siding applied in sections with joints not caulked or sealed shall not be considered to restrict water vapor transmission, or (3) Wall cavities shall be constructed so that ventilation is provided to dissipate any condensation occurring in these cavities.
40 ROP ROC con't	6-4.2.4 Homes manufactured to be sited in "humid climates" or "fringe climates" as shown in Figure 6-4.2.4, as identified in the counties listed in Table 6-4.2.4, shall be permitted to have a vapor retarder specified in 6-4.2.1 installed on the	**(4) Homes manufactured to be sited in "humid climates" or "fringe climates" as shown in Figure 3280.504(b)(4) as identified in the counties listed in Table 3280.504(b)(4), shall be**	

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	exterior side of the wall insulation.	**permitted to have a vapor retarder specified in Section 3280.504(b) installed on the exterior side of the wall insulation.** Table and figures are included at the end of this document as Figures #3a, 3b, 3c, and 3d.	
41 ROP	6-4.3.1 Move the last two sentences from subparagraph (a) which begins "A clear air passage space..." to the very beginning of the section.	504(c)(1)(i) **(i) 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 clear air passage space is maintained.** 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.	504(c)(1)(i) (i) A minimum free ventilation area of not less than 1/300 of the attic or roof cavity floor area. At least 50 percent of the required free ventilation area shall be provided by ventilators located in the upper portion of the space to be ventilated. At least 40 percent shall be provided by eave, soffit or low gable vents. The location and spacing of the vent openings and ventilators shall provide cross-ventilation to the entire attic or roof cavity space. *A clear air passage space having a minimum height of 1 inch shall be provided between the top of the insulation and the roof sheathing or roof covering. Baffles or other means shall be provided where needed to insure the 1 inch height of the clear air passage space is maintained.*
42 ROP	6-5.1 Envelope Air Infiltration. The opaque envelope shall be designed and constructed to limit air infiltration to the living area of the home. Any design, material, method, or combination thereof that accomplishes this goal shall be permitted to be used. The goal of the	505(a) (a) 6-5.1 Envelope Air Infiltration. The opaque envelope shall be designed and constructed to limit air infiltration to the living area of the home. Any design, material, method, or combination thereof that accomplishes this goal	505(a) (a) Envelope air infiltration. The opaque envelope shall be designed and constructed to limit air infiltration to the living area of the home. Any design, material, method or combination thereof which accomplishes this goal may be used. The

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	infiltration control criteria is to reduce heat loss/heat gain due to infiltration, limit moisture transfer that causes condensation and reduce draft that causes comfort problems. ~~as much as possible without impinging on health and comfort within the limits of reasonable economics.~~	shall be permitted to be used. The goal of the infiltration control criteria is to reduce heat loss/heat gain due to infiltration, **limit moisture transfer that causes condensation and reduce draft that causes comfort problems**	goal of the infiltration control criteria is to reduce heat loss/heat gain due to infiltration as much as possible without impinging on health and comfort and within the limits of reasonable economics.
43 ROP	6-6.1.3 Manufactured homes designed for U 0 value Zone 3 shall be factory-equipped with storm windows or insulating glass. Interior mounted storm window frames shall be sealed.	506(c) (c) Manufactured homes designed for U 0 value Zone 3 shall be factory-equipped with storm windows or insulating glass. **Interior mounted storm window frames shall be sealed.**	506(c) (c) Manufactured homes designed for Uo Value Zone 3 shall be factory equipped with storm windows or insulating glass.
44 ROC 44 ROC con't	Revise 6-8.1 and 6-8.2 as follows: 6-8.1 Information, values, and data necessary for heat loss and heat gain determinations shall be taken from the ~~1989~~ 1997 ASHRAE Handbook of Fundamentals, Chapters ~~20~~ 22 through 27. The portions of those chapters listed in Table 6-8.1 shall not be applicable. Table 6-8.1 Sections Not Applicable. Chapter Sections Topics ~~21.1~~ 23.1 Heavy Steel frame construction ~~21.2~~ 23.2 Masonry construction ~~21.3~~ 23.3 Foundation and Floor systems ~~21.14~~ 23.15 Pipes ~~21.16~~ 23.17 Tanks, vessels, and equipment ~~21.17~~ 23.18 Refrigerated rooms and buildings ~~22.15~~ 24.15 Mechanical and industrial systems ~~23.13~~ 25.19 Commercial building envelope leakage ~~25.4~~ 27.9 ~~Calculation of~~ Calculating heat loss from crawl spaces	508(a) and (b) (a)Information, values, and data necessary for heat loss and heat gain determinations shall be taken from the **1997** ASHRAE Handbook of Fundamentals, Chapters **22** through 27. The portions of those chapters listed in Table 6-8.1 shall not be applicable. Table 6-8.1 Sections Not Applicable. Chapter Sections Topics **23.1** **Heavy** Steel frame construction **23.2** Masonry construction **23.3** **Foundation and** Floor systems **23.15** Pipes **23.17** Tanks, vessels, and equipment **23.18** Refrigerated rooms and buildings **24.15** Mechanical and industrial systems **25.19** Commercial building envelope leakage **27.9** **Calculating** heat loss from crawl spaces	508(a) and (b) (a) Information, values and data necessary for heat loss and heat gain determinations shall be taken from the 1989 ASHRAE Handbook of Fundamentals, Chapters 20 through 27. The following portions of those chapters are not applicable: 21.1 Steel Frame Construction 21.2 Masonry Construction 21.3 Floor Systems 21.14 Pipes 21.16 Tanks, Vessels and Equipment 21.17 Refrigerated Rooms and Buildings 22.15 Mechanical and Industrial Systems 23.13 Commercial Building Envelope Leakage 25.4 Calculation of Heat Loss from Crawl Spaces

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	6-8.2 The calculation of the manufactured home's transmission heat loss coefficient (U0) shall be in accordance with the fundamental principals of the ~~1989~~ 1997 ASHRAE Handbook of Fundamentals and, at a minimum, shall address all the heat loss or heat gain considerations in a manner consistent with the calculation procedures provided in the document "Overall U-values and Heating/Cooling Loads — Manufactured Homes" — February 1992, PNL 8006, HUD User No. 0005945.	(b) The calculation of the manufactured home's transmission heat loss coefficient (U0) shall be in accordance with the fundamental principals of the **1997** ASHRAE Handbook of Fundamentals and, at a minimum, shall address all the heat loss or heat gain considerations in a manner consistent with the calculation procedures provided in the document "Overall U-values and Heating/Cooling Loads — Manufactured Homes" — February 1992, PNL 8006, HUD User No. 0005945.	(b) The calculation of the manufactured home's transmission heat loss coefficient (Uo) shall be in accordance with the fundamental principals of the 1989 ASHRAE Handbook of Fundamentals and, at a minimum, shall address all the heat loss or heat gain considerations in a manner consistent with the calculation procedures provided in the document Overall U-values and Heating/Cooling Loads-Manufactured Homes-- February 1992-PNL 8006, HUD User No. 0005945.
45 ROP	6-8.3 Areas where the insulation does not fully cover a surface or is compressed shall be accounted for in the U calculation (see Section 6-6). The effect of framing on the U value shall be included in the U 0 calculation. Other low-R-value heat-flow paths ("thermal shorts") shall be explicitly accounted for in the calculation of the transmission heat loss coefficient if, in the aggregate, all types of low-R-value paths amount to more than 1 percent of the total exterior surface area, or 40 sq ft, whichever is less. Areas shall be considered low-R-value heat-flow paths if the following apply: (a) They separate conditioned and unconditioned space. (b) They are not insulated to a level that is at least one-half the nominal insulation level of the surrounding building component.	507(c) (c) Areas where the insulation does not fully cover a surface or is compressed shall be accounted for in the U calculation (see Section 3280.506). The effect of framing on the U value shall be included in the U 0 calculation. Other low-R-value heat-flow paths ("thermal shorts") shall be explicitly accounted for in the calculation of the transmission heat loss coefficient if, in the aggregate, all types of low-R-value paths amount to more than 1 percent of the total exterior surface area **, or 40 sq ft, whichever is less**. Areas shall be considered low-R-value heat-flow paths if the following apply: (1) They separate conditioned and unconditioned space. (2) They are not insulated to a level that is at least one-half the nominal insulation level of the surrounding building component.	507(c) (c) Areas where the insulation does not fully cover a surface or is compressed shall be accounted for in the U-calculation (see Sec. 3280.506). The effect of framing on the U-value must be included in the Uo calculation. Other low-R-value heat-flow paths (``thermal shorts") shall be explicitly accounted for in the calculation of the transmission heat loss coefficient if in the aggregate all types of low- R-value paths amount to more than 1% of the total exterior surface area. Areas are considered low-R-value heat-flow paths if: (1) They separate conditioned and unconditioned space; and (2) They are not insulated to a level that is at least one-half the nominal insulation level of the surrounding building component.
46 ROP	6-8.5 U values for any glazing (e.g., windows, skylights, and the glazed portions of any door) shall be based on tests using AAMA 15031, Voluntary Test	507(e) (e) U values for any glazing (e.g., windows, skylights, and the glazed portions of any door) shall be based on tests using AAMA 15031, Voluntary	507(e) (e) U-values for any glazing (windows, skylights, and the glazed portions of any door) shall be based on tests using American Architectural

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	Method for Thermal Transmittance and Condensation Resistance of Windows, Doors, and Glazed Wall Sections<u> or the National Fenestration Rating Council 100 (1997 edition), Procedure for Determining Fenestration Product Thermal Properties.</u> In the absence of tests, manufacturers shall use the residential window U values contained in ~~Table 13 in Chapter 27 of the 1989~~ <u>Chapter 29, Table 5 of the 1997</u> 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. <u>Where a composite of materials from two different product types are used, the product shall be assigned the higher U value</u>. For the purpose of calculating U o values, storm windows shall be treated as an additional pane."	Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors, and Glazed Wall **Sections or the National Fenestration Rating Council 100 (1997 edition), Procedure for Determining Fenestration Product Thermal Properties.** In the absence of tests, manufacturers shall use the residential window U values contained in **Chapter 29, Table 5 of the 1997** ASHRAE Handbook of Fundamentals. In the event that the classification of the window type is indeterminate, the manufacturer shall use the classification that gives the higher U value. **Where a composite of materials from two different product types are used, the product shall be assigned the higher U value.** For the purpose of calculating U o values, storm windows shall be treated as an additional pane."	Manufacturers Association (AAMA) 1503.1-1988, Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections. In the absence of tests, manufacturers shall use the residential window U values contained in Table 13 in Chapter 27, the 1989 ASHRAE Handbook of Fundamentals. In the event that the classification of the window type is indeterminate, the manufacturer shall use the classification which gives the higher U value. For the purpose of calculating Uo values, storm windows shall be treated as an additional pane.
47 ROP 47	6-9.3 Insulation Compression. Insulation compressed to less than nominal thickness shall have its nominal R-values reduced for that area which is compressed in accordance with ~~Figure~~ <u>Table</u> 6-9.3. When insulation is installed over the framing members, the thermal performance of the insulation shall be reduced due to compression at the framing members. The resistance value of the insulation between the framing members shall be reduced by 12.5 percent for framing members 16 in. (406 mm) on center, 8.5 percent for framing members 24 in. (610 mm) on center, and 4 percent for framing members 48 in. (1220 mm) on center. <u>The R value for loose-fill insulation in sloping cavities shall be adjusted in accordance with Table 6-9.3.</u>	509(c) (c) 3 Insulation Compression. Insulation compressed to less than nominal thickness shall have its nominal R-values reduced for that area which is compressed in accordance with **Table** 3280.509(c). When insulation is installed over the framing members, the thermal performance of the insulation shall be reduced due to compression at the framing members. The resistance value of the insulation between the framing members shall be reduced by 12.5 percent for framing members 16 in. (406 mm) on center, 8.5 percent for framing members 24 in. (610 mm) on center, and 4 percent for framing members 48 in. (1220 mm) on center. **The R value for loose-fill insulation in sloping cavities shall be adjusted in**	509(c) (c) Insulation compression. Insulation compressed to less than nominal thickness shall have its nominal R-values reduced for that area which is compressed in accordance with the following graph: When insulation is installed over the framing members the thermal performance of the insulation is reduced due to compression at the framing members. The Resistance value of the insulation between the framing members is reduced by 12.5 percent for framing members 16' O.C., 8.5 percent for framing members 24" O.C., and 4 percent for framing members 48" O.C.

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
ROP cont.	Delete the existing Figure 6-9.3 and replace with new Table 6-9.3 shown on the following page (Table 3.2 from PNL 8006 document).	**accordance with Table 3280.509(c).** Table included at the end on the document as Figures #4	
48 ROP	6-10.1 Delete the last sentence of the Heating Certificate which begins as follows: "To maximize furnace operating economy..."	510 HEATING CERTIFICATE Home Manufacturer_____ Plant Location_____ Home Model_____ (Include Uo Value Zone Map) This manufactured home has been thermally insulated to conform with the requirements of the Federal Manufactured Home Construction and Safety Standards for all locations within Uo Value Zone ____. Heating Equipment Manufacturer_____ Heating Equipment Model_____ The above heating equipment has the capacity to maintain an average 70F temperature in this home at outdoor temperatures of [see paragraph (b) of this section] F.	510 HEATING CERTIFICATE Home Manufacturer_____ Plant Location_____ Home Model_____ (Include Uo Value Zone Map) This manufactured home has been thermally insulated to conform with the requirements of the Federal Manufactured Home Construction and Safety Standards for all locations within Uo Value Zone ____. Heating Equipment Manufacturer_____ Heating Equipment Model_____ The above heating equipment has the capacity to maintain an average 70F temperature in this home at outdoor temperatures of [see paragraph (b) of this section] F. *To maximize furnace operating economy and to conserve energy, it is recommended that this home be installed where the outdoor winter design temperature (97 1/2%) is not higher than [see paragraph (c) of this section] F degrees Fahrenheit.*
49 ROP	6-10.3 "The heating certificate shall indicate the lowest	510(b) (b) "The heating certificate shall indicate the	510(b) (b) Outdoor certification temperature. The lowest

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	outdoor temperature at which the installed heating equipment will maintain a 70°F (21°C) temperature inside the home ~~without storm sash or insulating glass for one 1 and Zone 2, with storm sash or insulating glass for Zone 3, and complying with sections 6-8 and 6-9.~~"	lowest outdoor temperature at which the installed heating equipment will maintain a 70°F (21°C) temperature inside the home"	outdoor temperature at which the installed heating equipment will maintain a 70 deg.F temperature inside the home without storm sash or insulating glass for Zones 1 and 2, and with storm sash or insulating glass for Zone 3 and complying with Sec. 3280.508 and Sec. 3280.509.
50 ROP	6-10.4 delete in total	501(c) deleted	510(c) (c) Operating economy certification temperature. The temperature to be specified for operating economy and energy conservation shall be 20 deg.F or 30% of the design temperature difference, whichever is greater, added to the temperature specified as the heating system capacity certification temperature without storm windows or insulating glass in Zones 1 and 2 and with storm windows or insulating glass in Zone 3. Design temperature difference is 70 deg. minus the heating system capacity certification temperature in degrees Fahrenheit.
51 ROC	6-10.1 Heating Certificate. The manufactured home manufacturer shall permanently affix the certificate shown in Figure 6-10.1 to an interior surface of the home that is readily visible to the homeowner. (See 6-11.1.) The Heating Certificate shall include a reproduction of Figure 6-6. The U0 value zone map shall be not less than 3 1/2 in. x 2 1/4 in. (89 mm x 57 mm). The manufacturer shall provide the following statement on the heating certificate when the home is built with a vapor retarder of not greater than 1 perm (dry cup method) on the exterior side of the insulation. "This home is designed to be sited in humid or fringe climate regions." as shown in the accompanying Figure 6-4.2.4 which shall be shown	510 Heat loss certificate The manufactured home manufacturer shall permanently affix the certificate shown in Figure 6-10.1 to an interior surface of the home that is readily visible to the homeowner. **(See 6-11.1.) The Heating Certificate shall include a reproduction of Figure 6-6. The U0 value zone map shall be not less than 3 1/2 in. x 2 1/4 in. (89 mm x 57 mm). The manufacturer shall provide the following statement on the heating certificate when the home is built with a vapor retarder of not greater than 1 perm (dry cup method) on the exterior side of the insulation. "This home is designed to be sited in humid or fringe climate regions." as shown in the accompanying Figure**	3280.510 Heat loss certificate. The manufactured home manufacturer shall permanently affix the following ``Certificate" to an interior surface of the home that is readily visible to the homeowner. The ``Certificate" shall specify the following:

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
51 ROC cont	on the certificate not less than 3 1/2 x 2 1/4 in. (89 mm x 57 mm). It shall be permitted to combine Figures 6-4.2.4 and 6-6 provided all information is clearly indicated. Add to the end of the Heating Certificate the following: ___ This home is designed to be sited in the humid or fringe climate regions as shown.	**6-4.2.4 which shall be shown on the certificate not less than 3 1/2 x 2 1/4 in. (89 mm x 57 mm). It shall be permitted to combine Figures 6-4.2.4 and 6-6 provided all information is clearly indicated.** Heating Certificate included at the end of this document as Figure #5.	
52 ROP ROC	6-11.1.1 Alternative 1. If a central air conditioner system is provided by the home manufacturer, the heat gain calculation necessary to properly size the air conditioning equipment shall be in accordance with the procedures outlined in Chapter ~~22~~ 27 of the ~~1989~~ 1997 ASHRAE Handbook of Fundamentals, with an assumed location and orientation. As shown in Figure 6-11.1.1.	511(a)(1) (1) Alternative 1. If a central air conditioner system is provided by the home manufacturer, the heat gain calculation necessary to properly size the air conditioning equipment shall be in accordance with the procedures outlined in Chapter **27** of the **1997** ASHRAE Handbook of Fundamentals, with an assumed location and orientation. As shown in Figure 3280.511(a)(1).	511(a)(1) (1) Alternative I. If a central air conditioning system is provided by the home manufacturer, the heat gain calculation necessary to properly size the air conditioning equipment shall be in accordance with procedures outlined in Chapter 22 of the 1989 ASHRAE Handbook of Fundamentals, with an assumed location and orientation. *The following shall be supplied in the Comfort Cooling Certificate:*
53 ROP	6.11.1.2 Alternative 2. For each home suitable for a central air cooling system, the manufacturer shall provide the following statement: "The air distribution system of this home is suitable for the installation of a central air-conditioning system." The statement shall be as shown in Figure 6.11.1.2. Comfort Cooling Certificate Manufactured Home Manufacturer_____ Plant Location_____ Manufactured Home Model_____ This air distribution system of this home is	511(a)(2) (2) Alternative 2. For each home suitable for a central air cooling system, the manufacturer shall provide the following statement: ``This air distribution system of this home is suitable for the installation of a central air conditioning system." Comfort Cooling Certificate Manufactured Home Manufacturer_____ Plant Location_____ Manufactured Home Model_____	511(a)(2) (2) Alternative 2. For each home suitable for a central air cooling system, the manufacturer shall provide the following statement: ``This air distribution system of this home is suitable for the installation of a central air conditioning system." Example Alternate 2 Comfort Cooling Certificate Manufactured Home Manufacturer_____ Plant Location_____ Manufactured Home Model_____

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
53 ROP con't	suitable for the installation of central air conditioning. The supply air distribution system installed in this home is sized for Manufactured Home Central Air Conditioning System of up to ---- B.T.U./Hr. ~~rated capacity which are certified in accordance with the appropriate Air Conditioning and Refrigeration Institute Standards. When the~~ This is based on air circulators of such air conditioners ~~are~~ rated at 0.3 inch water column static pressure or greater for the cooling air delivered to the manufactured home supply air duct system.	This air distribution system of this home is suitable for the installation of central air conditioning. The supply air distribution system installed in this home is sized for Manufactured Home Central Air Conditioning System of up to ---- B.T.U./Hr. **This is based on** air circulators of such air conditioners rated at 0.3 inch water column static pressure or greater for the cooling air delivered to the manufactured home supply air duct system.	This air distribution system of this home is suitable for the installation of central air conditioning. The supply air distribution system installed in this home is sized for Manufactured Home Central Air Conditioning System of up to ---- B.T.U./Hr. rated capacity which are certified in accordance with the appropriate Air Conditioning and Refrigeration Institute Standards. When the air circulators of such air conditioners are rated at 0.3 inch water column static pressure or greater for the cooling air delivered to the manufactured home supply air duct system.
54 ROP ROC	Section 7-2 to read as follows: ~~Anti-Siphon~~ Mechanical Trap Vent Device. A device that automatically opens to admit air to a fixture drain above the connection of the trap arm so as to prevent siphonage and closes tightly when the pressure within the drainage system is equal to or greater than atmospheric pressure so as to prevent the escape of gases from the drainage system into the manufactured home.	602 **Mechanical** Trap Vent Device. A device that automatically opens to admit air to a fixture drain above the connection of the trap arm so as to prevent siphonage and closes tightly when the pressure within the drainage system is equal to or greater than atmospheric pressure so as to prevent the escape of gases from the drainage system into the manufactured home.	602 Anti-siphon trap vent device means a device which automatically opens to admit air to a fixture drain above the connection of the trap arm so as to prevent siphonage, and closes tightly when the pressure within the drainage system is equal to or greater than atmospheric pressure so as to prevent the escape of gases from the drainage system into the manufactured home.
55 ROP ROC	7-3.2.4 (2) A statement in the installation instructions stating that if heat tape or pipe heating cable is used, it shall be listed for use with the manufactured homes. ~~(c) A receptacle outlet complying with 9-6.2(10).~~	603(b)(4)(ii) (ii) A statement in the installation instructions stating that if heat tape **or pipe heating cable** is used, it shall be listed for use with the manufactured homes. **(iii) Deleted**	603(b)(4)(ii) (ii) A statement in his installation instructions that if heat tape is used it shall be listed for use with manufactured homes; (iii) A receptacle outlet for the use of a heat tape located on the underside of the manufactured home within 2 feet of the water supply inlet. The receptacle outlet provided shall not be placed on a branch circuit which is protected by a ground fault circuit interrupter.

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
56 ROP ROC	Add a new Standard to read as follows: Table 7-4.1 Minimum Standards, Miscellaneous Performance Requirements for Air Admittance Valves for Plumbing Drainage Systems, Fixture and Branch Devices ANSI/ASSE 1051-91 with 1992 Revisions	604(b) Miscellaneous **Performance Requirements for Air Admittance Valves for Plumbing Drainage Systems, Fixture and Branch Devices ANSI/ASSE 1051-91 with 1992 Revisions**	New 604(b) reference
57 ROP	7-6.1.2 Combination Fixtures. A two- or three-compartment sink, up to three single sinks, or up to three lavatories; with waste outlets not more than 30 in. (760 mm) apart, in the same room, and flood level rims at the same level, shall be permitted to be connected to one "P" trap and considered as a single fixture for the purposes of drainage and vent requirements.	606(a)(2) **Combination** Fixtures. **A two- or three-compartment sink, up to three single sinks, or up to three lavatories**; with waste outlets not more than 30 in. (760 mm) apart, in the same room, and flood level rims at the same level, shall be permitted to be connected to one "P" trap and considered as a single fixture for the purposes of drainage and vent requirements.	606(a)(2) (2) Dual fixtures. *A two-compartment sink, two single sinks, two lavatories, or a single sink and a single lavatory* with waste outlets not more than 30 inches apart and in the same room and flood level rims at the same level *may be* connected to one ``P" trap and *may be* considered as a single fixture for the purpose of drainage and vent requirements.
58 ROP	7-7.1.3 Fixture Connections. Fixture tailpieces and continuous wastes in exposed or accessible locations shall be not less than No. 20 Brown and Sharpe gauge seamless drawn-brass tubing or other approved pipe or tubing material. Inaccessible fixture connections shall be constructed according to the requirements for drainage piping. Each fixture tailpiece, continuous waste, or waste and overflow shall be not less than 1-1/2 in. (40 mm) for sinks of two or more compartments, dishwashers, clothes washing machines, laundry tubs, ~~and~~ bath tubs, and showers; and not less than 1-1/4 in. (32 mm) for lavatories and single-compartment sinks having a 2-in. (50-mm) maximum drain opening.	607(a)(3) (3) Fixture Connections. Fixture tailpieces and continuous wastes in exposed or accessible locations shall be not less than No. 20 Brown and Sharpe gauge seamless drawn-brass tubing or other approved pipe or tubing material. Inaccessible fixture connections shall be constructed according to the requirements for drainage piping. Each fixture tailpiece, continuous waste, or waste and overflow shall be not less than 1-1/2 in. (40 mm) for sinks of two or more compartments, dishwashers, clothes washing machines, laundry tubs, bath tubs, **and showers**; and not less than 1-1/4 in. (32 mm) for lavatories and single-compartment sinks having a 2-in. (50-mm)	607(a)(3) (3) Fixture connections. Fixture tailpieces and continuous wastes in exposed or accessible locations shall be not less than No. 20 Brown and Sharpe gage seamless drawn-brass tubing or other approved pipe or tubing materials. Inaccessible fixture connections shall be constructed according to the requirements for drainage piping. Each fixture tailpiece, continuous waste, or waste and overflow shall be not less than 1\1/2\ inches for sinks of two or more compartments, dishwashers, clothes washing machines, laundry tubs, bath tubs, and not less than 1\1/4\ inches for lavatories and single compartment sinks having a 2 inch maximum drain opening.

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
		maximum drain opening.	
59 ROP ROC	7-7.2.5.2 Standpipes shall be either 1-1/2 in. (40 mm) minimum nominal iron pipe size, 1-1/2 in. (40 mm) diameter nominal brass tubing not less than No. 20 Brown and Sharpe gauge, or 1-1/2 in. (40 mm) approved plastic materials. Receptors shall discharge into a vented trap or shall be connected to a laundry tub tailpiece by means of an approved or listed directional fitting. Each standpipe shall extend not less than 18 in. (457 mm) or more than ~~30 in. (762 mm)~~ 48 in. (1219 mm) above its trap and shall terminate in an accessible location no lower than the top of the clothes washing machine. A removable, tight-fitting cap or plug shall be installed on the standpipe when a clothes washing machine is not provided.	607(b)(5)(ii) (ii) Standpipes shall be either 1-1/2 in. (40 mm) minimum nominal iron pipe size, 1-1/2 in. (40 mm) diameter nominal brass tubing not less than No. 20 Brown and Sharpe gauge, or 1-1/2 in. (40 mm) approved plastic materials. Receptors shall discharge into a vented trap or shall be connected to a laundry tub tailpiece by means of an approved or listed directional fitting. Each standpipe shall extend not less than 18 in. (457 mm) or more than **48 in. (1219 mm)** above its trap and shall terminate in an accessible location no lower than the top of the clothes washing machine. A removable, tight-fitting cap or plug shall be installed on the standpipe when a clothes washing machine is not provided	607(b)(5)(ii) (ii) Standpipes shall be 1\1/2\ inches minimum nominal iron pipe size, 1\1/2\ inches diameter nominal brass tubing not less than No. 20 Brown and Sharpe gage, or 1\1/2\ inches approved plastic materials. Receptors shall discharge into a vented trap or shall be connected to a laundry tub tailpiece by means of an approved or listed directional fitting. Each standpipe shall extend not less than 18 inches or more than 30 inches above its trap and shall terminate in an accessible location no lower than the top of clothes washing machine. A removable tightfitting cap or plug shall be installed on the standpipe when clothes washer is not provided.
60 ROP	New, 7-7.2.2.3 All water closets shall be low consumption (1.6 gpf) closets. 2. Add a new 7-7.1.6 to read as follows: 7-7.1.6 Water Conservation. All lavatory faucets, shower heads, and sink faucets shall not exceed a flow of 2.5 gpm. 3. Add A112.19.6, Hydraulic Requirements for Water Closets and Urinals, to the Plumbing Fixtures section of Table 7-4.1.	607(b)(2)(iii) (iii) **All water closets shall be low consumption (1.6 gpf) closets.** 607(a)(6) (6) **Water Conservation. All lavatory faucets, shower heads, and sink faucets shall not exceed a flow of 2.5 gpm.** 604(a) Plumbing fixtures **Hydraulic Requirements for Water Closets and Urinals, to the Plumbing Fixtures, A112.19.6-1995**	New, 607(b)(2)(iii) and renumber existing New, 607(a)(6) New, 604(a) reference
61 ROP	7.10.2.1 Pipe. Drainage piping shall be standard weight galvanized steel, brass, copper tube DWV, listed Scheduled 40 ABS plastic, listed Scheduled	610(b)(1) (1) Pipe. Drainage piping shall be standard weight **galvanized** steel, brass, copper tube DWV, listed	610(b)(1) (b) Materials--(1) Pipe. Drainage piping shall be standard weight steel, *wrought iron*, brass, copper

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	40 PVC plastic, cast iron, or other listed or approved materials.	**Scheduled 40 ABS** plastic, **listed Scheduled 40 PVC plastic**, cast iron, or other listed or approved materials.	tube DWV, listed plastic, cast iron, or other listed or approved materials.
62 ROC	Revise 7-10.5.1 to read: 7-10.5.1 Fixture drains shall be sized as follows: (a) Fixture drains serving a single lavatory shall be 1-1/4 inch minimum. (b) Fixture drains serving other fixtures or multiple fixtures up to 3 shall be 1-1/2 inch minimum. (c) Fixture drains shall not be smaller than the sizes specified in Section 7-7.2	610(e)(1) **(1) Fixture drains shall be sized as follows:** **(i) Fixture drains serving a single lavatory shall be 1-1/4 inch minimum.** **(ii) Fixture drains serving other fixtures or multiple fixtures up to 3 shall be 1-1/2 inch minimum.** **(iii) Fixture drains shall not be smaller than the sizes specified in Section 3280.607(b).**	610(e)(1)and (i) (e) Size of drainage piping--(1) Fixture load. Except as provided by Sec. 3280.611(d), drain pipe sizes shall be determined by the type of fixture and the total number connected to each drain. (i) A 1\1/2\ inch minimum diameter piping shall be required for one and not more than three individually vented fixtures.
63 ROP	Revise 7-11.2.1 to read as follows: 7-11.2.1 Pipe. Vent piping shall be standard weight galvanized steel, brass, copper tube DWV, listed Scheduled 40 ABS plastic, listed Scheduled 40 PVC plastic, cast iron, or other listed or approved materials.	611(b)(1) (1) 1 Pipe. Vent piping shall be standard weight **galvanized** steel, brass, copper tube DWV, listed **Scheduled 40 ABS** plastic, **listed Scheduled 40 PVC plastic**, cast iron, or other listed or approved materials.	611(b)(1) (b) Materials--(1) Pipe. Vent piping shall be standard weight steel, *wrought iron*, brass, copper tube DWV, listed plastic, cast iron or other approved or listed materials.
64 ROP ROC	7-11.4 Mechanical Vents. Where mechanical vents are used as a secondary vent system for plumbing fixtures that are protected by traps, shall comply with 7-11.4.1 or 7-11.4.2. 7-11.4.1 Spring operated mechanical (anti-siphon) vents shall comply with the following: 7-11.4.1.1 No more than two fixtures individually protected by the spring operated mechanical vent shall be drained by a common 1-1/2 in. (40 mm) drain. 7-11.4.1.2 Minimum drain size for three or more fixtures individually protected by the spring operated mechanical vent shall be 2 in. (50 mm). 7-11.4.1.3 Spring operated mechanical vents	611(d) (d) **Mechanical** Vents. **Where mechanical** vents are used as a secondary vent system for plumbing fixtures that are protected by traps, **shall comply with Section 3280.611(d)(1) or 3280.611(d)(2).** (1) **Spring operated mechanical (anti-siphon) vents shall comply with the following**: (i) No more than two fixtures individually protected by the **spring operated mechanical vent** shall be drained by a common 1-1/2 in. (40 mm) drain. (ii) Minimum drain size for three or more fixtures individually protected by the spring operated mechanical vent shall be 2 in. (50 mm). (iii) **Spring operated mechanical vents shall be**	611(d) (d) *Anti-siphon trap* vent. An anti-siphon trap vent may be used as a secondary vent system for plumbing fixtures protected by traps not larger than 1\1/2\ inches, when installed in accordance with the manufacturers' recommendations and the following conditions: (1) Not more than two fixtures individually protected by the device shall be drained by a common 1\1/2\ inch drain. (2) Minimum drain size for three or more fixtures individually protected by the device shall be 2 inches. (3) *A primary vent stack must be installed to vent*

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
64 ROP ROC con't	shall be restricted to venting fixtures with 1-1/2 in. (40 mm) traps. 7-11.4.1.4 A spring operated mechanical vent shall be installed in a location that allows a free flow of air and shall be accessible for inspection, maintenance, and replacement. The sealing function shall be at least 6 in. (152 mm) above the top of the trap arm. 7-11.4.1.5 Materials for the spring operated mechanical vents shall be as follows: (1) Cap and housing shall be listed acrylonitrile-butadiene-styrene, DWV grade. (2) Stem shall be DWV grade nylon or acetal. (3) Spring shall be stainless steel wire, Type 302. (4) Sealing disc shall be either: (a) Neoprene, conforming to CISPI-HSN-85, Specification for Neoprene Rubber Gaskets for HUB and Spigot Cast Iron Soil Pipe and Fittings, and ASTM C 564, Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings, or (b) ASTM C 920, Standard Specification for Elastomeric Joint Sealants, and ASTM D 4635, Liners Case, and Sheet, Overwrap; Water-Vapor Proof or Waterproof, Flexible. 7-11.4.2 Gravity operated mechanical (air admittance valves) vents shall comply with the following: 7-11.4.2.1 Where installed to vent any fixture the drain system shall have a minimum 1-1/2 in. (40 mm) diameter vent which terminates outside the manufactured home. 7-11.4.2.2 Where gravity operated mechanical vent devices terminate in the attic cavity, the following shall apply:	**restricted to venting fixtures with 1-1/2 in. (40 mm) traps.** (iv) A **spring operated mechanical** vent shall be installed in a location that allows a free flow of air and shall be accessible for inspection, maintenance, and replacement. The sealing function shall be at least 6 in. (152 mm) above the top of the trap arm. (v) Materials for the **spring operated mechanical** vents shall be as follows: (A) Cap and housing shall be listed acrylonitrile-butadiene-styrene, DWV grade. (B) Stem shall be DWV grade nylon or acetal. (C) Spring shall be stainless steel wire, Type 302. (D) Sealing disc shall be either: (a) Neoprene, conforming to CISPI-HSN-85, Specification for Neoprene Rubber Gaskets for HUB and Spigot Cast Iron Soil Pipe and Fittings, and ASTM C 564, Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings, or **(b) ASTM C 920, Standard Specification for Elastomeric Joint Sealants, and ASTM D 4635, Liners Case, and Sheet, Overwrap; Water-Vapor Proof or Waterproof, Flexible.** **(2) Gravity operated mechanical (air admittance valves) vents shall comply with the following:** **(i) Where installed to vent any fixture the drain system shall have a minimum 1-1/2 in. (40 mm) diameter vent which terminates outside the manufactured home.** **(ii) Where gravity operated mechanical vent devices terminate in the attic cavity, the following shall apply:** **(A) The attic cavity is accessible as described**	*the toilet drain at the point of heaviest drainage fixture unit loading.* (4) The *device* shall be installed in a location that permits a free flow of air and shall be accessible for inspection, maintenance, and replacement and the sealing function shall be at least 6 inches above the top of the trap arm. (5) Materials for the anti-siphon trap vent shall be as follows: (i) Cap and housing shall be listed acrylonitrile-butadiene-styrene, DWV grade; (ii) Stem shall be DWV grade nylon or acetal; (iii) Spring shall be stainless steel wire, type 302; (iv) Sealing disc shall be neoprene, conforming to CISPI-HSN-85, the Specification for Neoprene Rubber Gaskets for HUB and Spigot Cast Iron Soil Pipe and Fittings, and ASTM C 564-88, Standard Specification for Rubber Gaskets for Case Iron Soil Pipe and Fittings, or, Silicone Rubber, Low and High Temperature and Tear Resistant, Conforming to Rubber, Silicone, FS ZZ-R-765B-1970, With 1971 Amendment 1; and Liners, Case, and Sheet, Overwrap; Water-Vapor Proof or Waterproof, Flexible, MIL-L-10547E-1975.

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
64 ROP ROC con't	(1) The attic cavity is accessible as described in 7-11.4.1.4. (2) The sealing device is installed a minimum of 6 in. (152 mm) above building insulation materials. (3) The attic is vented in accordance with 6-4.3.1. 7-11.4.3 Mechanical vents shall be installed in accordance with the manufacturer's installation instructions.	**in Section 3280.611(d)(1)(iv).** **(B) The sealing device is installed a minimum of 6 in. (152 mm) above building insulation materials.** **(C) The attic is vented in accordance with Section 3280.04(c)(1).** **(3) Mechanical vents shall be installed in accordance with the manufacturer's installation instructions.**	
65 ROP ROC	Revise 7-11.6 to read: 7-11.6 Vent Terminal. Vents shall terminate through the roof, wall, or to a mechanical vent device in accordance with Section 7-11.4. 7-11.6.1 Roof Extension. Each vent pipe shall extend through its flashing and terminate vertically. Vents that extend through the roof shall extend undiminished in size, not less than 2 in. (50 mm) above the roof. Vent openings shall not be less than 3 ft (914 mm) away from any motor-driven air intake that opens into habitable areas. 7-11.6.2 Wall Vent Extensions. Extensions though exterior walls shall terminate downward and shall have a screen to prevent entrance of birds and rodents, and shall be located as follows: (a) Extensions shall not be located beneath a door. (b) Extension shall be a minimum of 10 ft above the finished floor. (c) Extensions shall not be located beneath a window or other opening. (d) Extensions shall be located a minimum of 2 ft above any building opening within 5 ft horizontally. ~~7-11.2~~ 7-11.6.3 Flashing. The opening around	611(f)(1) (f) Vent Terminal. **Vents shall terminate through the roof, wall, or to a mechanical vent device in accordance with Section 3280.611(d).** (1) Roof Extension. **Each vent pipe shall extend through its flashing and terminate vertically. Vents that extend through the roof shall extend** undiminished in size, not less than 2 in. (50 mm) above the roof. Vent openings shall not be less than 3 ft (914 mm) away from any motor-driven air intake that opens into habitable areas. **(2) Wall Vent Extensions. Extensions though exterior walls shall terminate downward and shall have a screen to prevent entrance of birds and rodents, and shall be located as follows:** **(i) Extensions shall not be located beneath a door.** **(ii) Extension shall be a minimum of 10 ft above the finished floor.** **(iii) Extensions shall not be located beneath a window or other opening.** **(iv) Extensions shall be located a minimum of 2 ft above any building opening within 5 ft horizontally.**	611(f)(1) and (2) (f) Vent terminal (1) Roof extension. Each vent pipe shall extend through its flashing and terminate vertically, undiminished in size, not less than 2 inches above the roof. Vent openings shall not be less than 3 feet away from any motor-driven air intake that opens into habitable areas. (2) Flashing. The opening around each vent pipe

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	each roof vent pipe shall be made watertight by ~~an adequate~~ flashing or flashing material. Wall vent pipe penetrations shall be made watertight.	(3) Flashing. The opening around each **roof** vent pipe shall be made watertight by flashing or flashing material. **Wall vent pipe penetrations shall be made watertight.**	shall be made watertight by an adequate flashing or flashing material.
66 ROP	8-2 Class 2 Air Ducts Delete the definition of "Class 2 Air Ducts" without substitution.	702(a) deleted	702(a) Class 2 air ducts means ducts of materials and connectors having a flame-spread rating of not over 50 without evidence of continued progressive combustion and a smoke-developed rating of not over 50 for the inside surface and not over 100 for the outside surface.
67 ROP	8-2 Combination Space Heating and Water Heating Appliance Add a new definition as follows: Combination Space Heating and Water Heating Appliance. A listed unit that is designed to provide space heating and water heating from a single primary energy source.	702(a) **Combination Space Heating and Water Heating Appliance. A listed unit that is designed to provide space heating and water heating from a single primary energy source.**	New 702(a) definition
68 ROP ROC	8-2 Direct-Vent Appliance Direct-Vent System Appliance. An appliance that is installed with a direct vent system. Direct-Vent System. A system or method of construction where all air for combustion is derived directly from the outside atmosphere and all flue gases are discharged to the outside atmosphere.	702(a) **Direct-Vent System Appliance. An appliance that is installed with a direct vent system.** **Direct-Vent System. A system or method of construction where all air for combustion is derived directly from the outside atmosphere and all flue gases are discharged to the outside atmosphere.**	New702(a) definitions
69 ROP	8-2 EER Delete the definition of "Energy Efficiency Ratio (EER)" without substitution.	702(a) delete Energy Efficiency Ratio (EER)	702(a) Energy Efficiency Ratio (EER) means the ratio of the cooling capacity output of an air conditioner for each unit of power input. EER=Capacity (Btuh)/Power input (watts)

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
70 ROP ROC	8-2 Heating Appliance Heating Appliance. An appliance for comfort heating, domestic water heating, or a combination of comfort heating and domestic water heating.	702(a) Heating Appliance. An appliance for comfort heating, domestic water heating, **or a combination of comfort heating and domestic water heating.**	702(a) Heating appliance means an appliance for comfort heating or for domestic water heating.
71 ROP	8-2 Water Heater "...Water Heater. An appliance for heating water for domestic purposes ~~other than space heating~~...".	702(a) Water Heater. An appliance for heating water for domestic purposes.	702(a) Water heater means an appliance for heating water for domestic purposes other than for space heating.
72 ROP	8-3 National Fuel Gas Code ANSI Z 223.1/ NFPA 54, 1996.	703 Minimum Standards National Fuel Gas Code **ANSI Z 223.1**/ NFPA 54, **1996.**	703 National Fuel Gas Code--NFPA 54-1992 ANSI 223.1.
73 ROP	Revise Table 8-3 Gas Fired Absorption Summer Air Conditioning Appliances ANSI Z 21.40.1-~~1981, with Addendum Z 21.40.1a-1982~~ 1996, with Addendum Z Z 21.40 1a-1997 Gas-Fired Central Furnaces [~~Except Direct Vent System Central Furnaces~~] ANSI Z 21.47-~~1993~~ 1995, with Addenda Z 21.47a-1995 and Z 21.47b-1997 Household Cooking-Gas Appliances ANSI Z 21.1-1996 , with Addenda Z 21.1a-1997 and Z 21.1b-1998 Refrigerators Using Gas Fuel ANSI Z 21.19-1990, with Addendum ANSI Z 21.19a-1992 and Z 21.19b-1995 Gas Water Heaters, Vol. 1, Storage Water Heaters with Input Ratings of 75,000 Btu ANSI Z 21.10.1-~~1993~~ 1998 Gas Piping Systems Using Corrugated Stainless Steel Tubing LC 1-1997	703(a) Gas Fired Absorption Summer Air Conditioning Appliances ANSI Z 21.40.1 **1996, with Addendum Z Z 21.40 1a-1997** Gas-Fired Central Furnaces ANSI Z 21.47 **1995, with Addenda Z 21.47a-1995 and Z 21.47b-1997** Household Cooking-Gas Appliances ANSI Z 21.1-1996 , **with Addenda Z 21.1a-1997 and Z 21.1b-1998** Refrigerators Using Gas Fuel ANSI Z 21.19-1990, with Addendum ANSI Z 21.19a-1992 **and Z 21.19b-1995** Gas Water Heaters, Vol. 1, Storage Water Heaters with Input Ratings of 75,000 Btu ANSI Z 21.10.1-**1998** **Gas Piping Systems Using Corrugated Stainless Steel Tubing LC 1-1997**	703(a) Gas Fired Absorption Summer Air Conditioning Appliances--ANSI Z21.40.1-1981, With Addenda Z21.40.1a-1982. Gas-Fired Central Furnaces [Except Direct Vent System Central Furnaces]--ANSI Z21.47-1990, With Addendum Z21.47a-1990 and Z21.47b-1992. Household Cooking Gas Appliances ANSI Z21.1-1990 With Addenda Z21.1a-1991 and Z211b-1993. Refrigerators Using Gas Fuel--ANSI Z21.19-1990, With Addenda Z21.19a-1992. Gas Water Heaters Vol. 1, Storage Water Heaters With Input Ratings of 75,000 BTU per hour or Less--ANSI Z21.10.1-1990, With Addendum Z21.10.1a-1991 and Z21.10.1b-1992.

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
73 ROP con't	~~Direct Vent Central Furnaces ANSI Z 21.64-1990, with Addendum ANSI Z 21.64a-1992~~ Automatic Gas Ignition Systems and Components ANSI Z 21.20-~~1993~~ 1997, with Addendum Z 21.20a-1998 Automatic Valves for Gas Appliances ANSI Z 21.21-1995 , with Addendum Z 21.21a-1998 Gas Appliance Thermostats ANSI Z 21.23-1993 , with Addenda Z 21.23a-1994 and Z 21.23b-1997	Automatic Gas Ignition Systems and Components ANSI Z 21.20- **1997, with Addendum Z 21.20a-1998** Automatic Valves for Gas Appliances ANSI Z 21.21-1995 , **with Addendum Z 21.21a-1998** Gas Appliance Thermostats ANSI Z 21.23-1993 , **with Addenda Z 21.23a-1994 and Z 21.23b-1997**	Direct Vent Central Furnaces--ANSI Z21.64-1990, With Addenda Z21.64a-1992. Automatic Gas Ignition Systems and Components--ANSI Z21.20-1989, With Addendum Z21.20a-1991 and Z21.20b-1992. Automatic Valves for Gas Appliances--ANSI Z21.21-1987, With Addendum Z21.21a-1989 and Z21.21b-1992. Gas Appliance Thermostats--ANSI Z21.23-1989, With Addenda Z21.23a-1991.
74 ROP	Add the following reference publication to Table 8-3: RADCO Standard DS-010-91, Decorative Gas Appliances for Installation in Solid Fuel Burning Fireplaces Approved for use in Manufactured Housing.	703(a) **RADCO Standard DS-010-91, Decorative Gas Appliances for Installation in Solid Fuel Burning Fireplaces Approved for use in Manufactured Housing.**	New 703(a) reference
75 ROP	Delete 8-4 in total	704(a) through (c) deleted	704 (a) through (c) 3280.704 Fuel supply systems. (a) LP--Gas system design and service line pressure. (1) Systems shall be of the vapor-withdrawal type. (2) Gas, at a pressure not over 14 inches water column (\1/2\ psi), shall be delivered from the system into the gas supply connection. (b) LP-gas containers--(1) Maximum capacity. No more than two containers having an individual water capacity of not more than 105 pounds (approximately 45 pounds LP-gas capacity), shall be installed on or in a compartment of any manufactured home. (2) Construction of containers. Containers shall

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
75 ROP con't			be constructed and marked in accordance with the specifications for LP-Gas Containers of the U.S. Department of Transportation (DOT) or the Rules for Construction of Pressure Vessels 1986, ASME Boiler and Pressure Vessel Code section VIII, Division 1 ASME Containers shall have a design pressure of at least 312.5 psig. (i) Container supply systems shall be arranged for vapor withdrawal only. (ii) Container openings for vapor withdrawal shall be located in the vapor space when the container is in service or shall be provided with a suitable internal withdrawal tube which communicates with the vapor space on or near the highest point in the container when it is mounted in service position, with the vehicle on a level surface. Containers shall be permanently and legibly marked in a conspicuous manner on the outside to show the correct mounting position and the position of the service outlet connection. The method of mounting in place shall be such as to minimize the possibility of an incorrect positioning of the container. (3) Location of LP-gas containers and systems. (i) LP-gas containers shall not be installed, nor shall provisions be made for installing or storing any LP-gas container, even temporarily, inside any manufactured home except for listed, completely self-contained hand torches, lanterns, or similar equipment with containers having a maximum water capacity of not more than 2\1/2\ pounds (approximately one pound LP-gas capacity). (ii) Containers, control valves, and regulating equipment, when installed, shall be mounted on the ``A" frame of the manufactured home, or installed

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
75 ROP con't			in a compartment that is vaportight to the inside of the manufactured home and accessible only from the outside. The compartment shall be ventilated at top and bottom to facilitate diffusion of vapors. The compartment shall be ventilated with two vents having an aggregate area of not less than two percent of the floor area of the compartment and shall open unrestricted to the outside atmosphere. The required vents shall be equally distributed between the floor and ceiling of the compartment. If the lower vent is located in the access door or wall, the bottom edge of the vent shall be flush with the floor level of the compartment. The top vent shall be located in the access door or wall with the bottom of the vent not more than 12 inches below the ceiling level of the compartment. All vents shall have an unrestricted discharge to the outside atmosphere. Access doors or panels of compartments shall not be equipped with locks or require special tools or knowledge to open. (iii) Permanent and removable fuel containers shall be securely mounted to prevent jarring loose, slipping or rotating and the fastenings shall be designed and constructed to withstand static loading in any direction equal to twice the weight of the tank and attachments when filled with fuel, using a safety factor of not less than four based on the ultimate strength of the material to be used. (4) LP-gas container valves and accessories. (i) Valves in the assembly of a two-cylinder system shall be arranged so that replacement of containers can be made without shutting off the flow of gas to the appliance(s). This provision is not to be construed as requiring an automatic change-over device.

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
75 ROP con't			(ii) Shutoff valves on the containers shall be protected as follows, in transit, in storage, and while being moved into final utilization by setting into a recess of the container to prevent possibility of their being struck if container is dropped upon a flat surface, or by ventilated cap or collar, fastened to the container, capable of withstanding a blow from any direction equivalent to that of a 30-pound weight dropped 4 feet. Construction shall be such that the blow will not be transmitted to the valve. (iii) [Reserved] (iv) Regulators shall be connected directly to the container shutoff valve outlets or mounted securely by means of a support bracket and connected to the container shutoff valve or valves with listed high pressure connections. If the container is permanently mounted the connector shall be as required above or with a listed semi-rigid tubing connector. (5) LP-gas safety devices. (i) DOT containers shall be provided with safety relief devices as required by the regulations of the U.S. Department of Transportation. ASME containers shall be provided with relief valves in accordance with subsection 221 of the Standard for the Storage and Handling Liquefied Petroleum Gases, NFPA No. 58-1992. Safety relief valves shall have direct communication with the vapor space of the vessel. (ii) The delivery side of the gas pressure regulator shall be equipped with a safety relief device set to discharge at a pressure not less than two times and not more than three times the delivery pressure of the regulator. (iii) Systems mounted on the ``A" frame assembly shall be so located that the discharge from

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
75 ROP con't			the safety relief devices shall be into the open air and not less than three feet horizontally from any opening into the manufactured home below the level of such discharge. (iv) Safety relief valves located within liquefied petroleum gas container compartments may be less than three feet from openings provided the bottom vent of the compartment is at the same level or lower than the bottom of any opening into the vehicle, or the compartment is not located on the same wall plane as the opening(s) and is at least two feet horizontally from such openings. (6) LP-gas system enclosure and mounting. (i) Housings and enclosures shall be designed to provide proper ventilation at least equivalent to that specified in Sec. 3280.704(b)(3)(ii). (ii) Doors, hoods, domes, or portions of housings and enclosures required to be removed or opened for replacement of containers shall incorporate means for clamping them firmly in place and preventing them from working loose during transit. (iii) Provisions shall be incorporated in the assembly to hold the containers firmly in position and prevent their movement during transit. (iv) Containers shall be mounted on a substantial support or a base secured firmly to the vehicle chassis. Neither the container nor its support shall extend below the manufactured home frame. (c) Oil tanks--(1) Installation. Oil tanks and listed automatic pumps (oil lifters) installed for gravity flow of oil to heating equipment shall be installed so that the top of the tank is no higher than 8 feet above the appliance oil control and the bottom of the tank is not less than 18 inches above the

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
75 ROP con't			appliance oil control. (2) Auxiliary oil storage tank. Oil supply tanks affixed to a manufactured home shall be so located as to require filling and draining from the outside and shall be in a place readily available for inspection. If the fuel supply tank is located in a compartment of a manufactured home, the compartment shall be ventilated at the bottom to permit diffusion of vapors and shall be insulated from the structural members of the body. Tanks so installed shall be provided with an outside fill and vent pipe and an approved liquid level gage. (3) Shutoff valve. A readily accessible, approved manual shutoff valve shall be installed at the outlet of an oil supply tank. The valve shall be installed to close against the supply. (4) Fuel oil filters. All oil tanks shall be equipped with an approved oil filter or strainer located downstream from the tank shutoff valve. The fuel oil filter or strainer shall contain a sump with a drain for the entrapment of water.
76 ROP	Add a new 8-5.2.5 as follows: 8-5.2.5 Corrugated stainless steel tubing (CSST) systems shall be listed and installed in accordance with ANSI/IAS LC-1-1997, Gas Piping Systems Using Corrugated Stainless Steel Tubing, and the requirements of this Section.	705(b)(4) (4) **Corrugated stainless steel tubing (CSST) systems shall be listed and installed in accordance with ANSI/IAS LC-1-1997, Gas Piping Systems Using Corrugated Stainless Steel Tubing, and the requirements of this Section.**	New 705(b)(4)
77 ROP	To the existing Table 8-5.4, add the word "Copper" before "Tubing" so the existing heading "Tubing-Length" reads "Copper Tubing-Length." Also, to the existing Table 8-5.4, add the material	705(d) Table - Headings: **Copper** Tubing-Length Add a new section: **Corrugated Stainless Steel Tubing (CSST)-**	705(d) Table new section for Corrugated Stainless Steel Tubing

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	proposed under the heading "Corrugated Stainless Steel Tubing (CSST)-Length."	**Length** Chart of sizing included at the end of this document as Figure #6	
78 ROP ROC	8-5.8 Concealed Tubing. Copper ~~T~~ tubing shall not be run inside walls, floors, partitions, or roofs. Corrugated stainless steel tubing (CSST) shall be permitted to be run inside walls, floors, partitions and roofs when: (a) Protected from accidental puncture by a steel striker barrier not less than 0.0508 inch (1.3 mm) thick, or equivalent, installed between the tubing and the finished wall and that extends at least 4 inches (10 cm) beyond concealed penetrations of plates, fire stops, wall studs, etc., or as specified by the tubing manufacturer's installation instructions, and (b) The tubing is installed in single runs and not rigidly secured. Where tubing passes through exterior walls, floors, partitions, roofs, or similar ~~installations~~ construction , such tubing shall be protected by the use of weather-resistant grommets that shall fit snugly both the tubing and the hole through which the tubing passes or as specified by the tubing manufacturer's installation instruction.	705(h) (h) Concealed Tubing. **Copper** tubing shall not be run inside walls, floors, partitions, or roofs. **Corrugated stainless steel tubing (CSST) shall be permitted to be run inside walls, floors, partitions and roofs when:** **(1) Protected from accidental puncture by a steel striker barrier not less than 0.0508 inch (1.3 mm) thick, or equivalent, installed between the tubing and the finished wall and that extends at least 4 inches (10 cm) beyond concealed penetrations of plates, fire stops, wall studs, etc., or as specified by the tubing manufacturer's installation instructions, and** **(2) The tubing is installed in single runs and not rigidly secured.** Where tubing passes through **exterior** walls, floors, partitions, roofs, or similar **construction**, such tubing shall be protected by the use of weather-resistant grommets that shall fit snugly both the tubing and the hole through which the tubing passes or as specified by the tubing manufacturer's installation instruction. .	705(h) (h) Concealed tubing. Tubing shall not be run inside walls, floors, partitions, or roofs. Where tubing passes through walls, floors, partitions, roofs, or similar installations, such tubing shall be protected by the use of weather resistant grommets that shall snugly fit both the tubing and the hole through which the tubing passes.
79 ROP	8-6.10 Testing ~~for Leakage~~ Tag. A tag shall be affixed to the oil- fired appliance(s) stating: " Before setting the system in operation, tank installations and piping shall be checked for oil	706(j) (j) Testing **Tag. A tag shall be affixed to the oil-fired appliance(s) stating**: " Before setting the system in operation, tank installations and piping	706(j) (j) Testing for leakage. Before setting the system in operation, tank installations and piping shall be checked for oil leaks with fuel oil of the same grade

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	leaks with fuel oil of the same grade that will be burned in the appliance. No other material shall be used for testing fuel oil tanks and piping. Tanks shall be filled to maximum capacity for the final check for oil leakage. "	shall be checked for oil leaks with fuel oil of the same grade that will be burned in the appliance. No other material shall be used for testing fuel oil tanks and piping. Tanks shall be filled to maximum capacity for the final check for oil leakage. "	that will be burned in the appliance. No other material shall be used for testing fuel oil tanks and piping. Tanks shall be filled to maximum capacity for the final check for oil leakage.
80 ROP	8-7.1.2 Gas and oil burning comfort heating appliances shall have an Annual Fuel Utilization Efficiency of not less than as specified ~~a flue loss of not more than 25 percent, and the thermal efficiency of not less than that specified~~ in the National Appliance Energy Conservation Act. ~~nationally recognized standards. (See Section 8-3).~~	707(a)(2) (2) 2 Gas and oil burning comfort heating appliances shall have **an Annual Fuel Utilization Efficiency of not less than as specified in the National Appliance Energy Conservation Act.**	707(a)(2) (2) Gas and oil burning comfort heating appliances shall have a flue loss of not more than 25 percent, and a thermal efficiency of not less than that specified in nationally recognized standards (See Sec. 3280.703).
81 ROP	8-7.4 Performance Efficiency. All automatic storage water heaters shall comply with the efficiency requirements of the National Appliance Energy Conservation Act. ~~8-7.4.1 All automatic electric storage water heaters installed in manufactured homes shall have a standby loss not exceeding 4 watts/ft 2 (43 watts/m 2) of tank surface area. The method of test for standby loss shall be as described in Section 4.3.1 of ANSI C72.1, Household Automatic Electric Storage Type Water Heaters.~~ ~~8-7.4.2 All gas- and oil-fired automatic storage water heaters shall have a recovery efficiency, (E) and a standby loss, (S) in accordance with Table 8-7.4.2. The method of test of E and S shall be as described in Section 2.7 of ANSI Z21.10.1, Gas Water Heaters, Vol. I, Storage Water Heaters with Input/Ratings of 75,000 Btu per Hour or Less, with addendum ANSI Z21.10.1a and ANSI Z21.10.1b, except that for oil-fired units. CF = 1.0, Q = total gallons of oil consumed and H = total heating value~~	707(d) (d) Performance Efficiency. **All automatic storage water heaters shall comply with the efficiency requirements of the National Appliance Energy Conservation Act.**	707(d) (d) Performance efficiency. (1) All automatic electric storage water heaters installed in manufactured homes shall have a standby loss not exceeding 43 watts/meter\2\ (4 watts/ft\2\) of tank surface area. The method of test for standby loss shall be as described in section 4.3.1 of Household Automatic Electric Storage Type Water Heaters, ANSI C72.1-1972. (2) All gas and oil-fired automatic storage water heaters shall have a recovery efficiency, E, and a standby loss, S, as described below. The method of test of E and S shall be as described in Section 2.7 of Gas Water heaters, Vol. I, Storage Water Heaters with Input/Ratings of 75,000 BTU per hour or less, ANSI Z21.10.1-1990, with addendums Z21.10.1a-1991 and Z21.10.1b-1992 except that for oil-fired units. CF=1.0, Q=total gallons of oil consumed and H=total heating value of oil

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	~~of oil in Btu/gallon.~~ Delete Table 8-7.4.2		in BTU/gallon. Table
82 ROP	8-9.8 A corrosion resistant water drip collection and drain pan shall be installed under each water heater that will allow water leaking from the water heater to drain to either the underside or the exterior of the manufactured homes, or a drain.	709(h) (h) **A corrosion resistant water drip collection and drain pan shall be installed under each water heater that will allow water leaking from the water heater to drain to either the underside or the exterior of the manufactured homes, or a drain.**	New material not currently addressed in 3280 New, 709(h)
83 ROP	8-11 Instructions. Operating instructions shall be provided with each appliance. All operating and installation instructions shall be provided with the homeowner's manual.	711 Instructions. Operating instructions shall be provided with each appliance. **All operating and installation instructions shall be provided with the homeowner's manual.**	711 Instructions. Operating instructions shall be provided with each appliance. *These instructions shall include directions and information covering the proper use and efficient operation of the appliance and its proper maintenance.*
84 ROP	8-13.1.1.1 Electric motor-driven unitary air-cooled air conditioners and heat pumps in the cooling mode with rated capacity less than 65,000 Btuh (19045 watts), when rated at ARI standard rating conditions in ARI Standard 210/240, Unitary Air Conditioning and Air Source Heat Pump Equipment, shall have seasonal energy efficiency (SEER) values not less than ~~10 for split systems and 9.7 for single package systems~~ as specified in the National Appliance Energy Conservation Act.	713(a)(1)(i) (i) Electric motor-driven unitary air-cooled air conditioners and heat pumps in the cooling mode with rated capacity less than 65,000 Btuh (19045 watts), when rated at ARI standard rating conditions in ARI Standard 210/240, Unitary Air Conditioning and Air Source Heat Pump Equipment, shall have seasonal energy efficiency (SEER) values not less than **as specified in the National Appliance Energy Conservation Act**.	713(a)(1)(i) (i) Electric motor-driven unitary cooling systems with rated capacity less than 65,000 BTU/Hr when rated at ARI Standard rating conditions in ARI Standard 210/240-89 Unitary Air-Conditioning and Air- Source Heat Pump Equipment, shall show energy efficiency (EER) values not less than 7.2.
85	8-13.1.1.2 ~~Air cooled heat pumps in the heating~~	713(a)(1)(ii)	713(a)(1)(ii)

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
ROP 85 ROP con't	~~mode shall be certified to comply with all the requirements of ARI Standard 210/240-89, Unitary Air Conditioning and Air-Source Heat Pump Equipment, with HSPF efficiencies of not less than 6.8 for split systems and 6.6 for single package systems.~~ Heat pumps shall be certified to comply with all the requirements of the ARI Standard 210/240-89, Unitary Air Conditioning and Air-Source Heat Pump Equipment. Electric motor-driven vapor compression heat pumps with supplemental electrical resistance heat shall be sized to provide by compression at least 60 percent of the calculated annual heating requirements for the manufactured home being served. A control shall be provided and set to prevent operation of supplemental electrical resistance heat at outdoor temperatures above 40°F (4°C), except for defrost conditions. Electric motor-driven vapor compression heat pumps with supplemental electric resistance heat conforming to ARI Standard 210/240-89, Unitary Air Conditioning and Air-Source Heat Pump Equipment, shall have HSPF efficiencies not less than as specified in the National Appliance Energy Conservation Act.	(ii) **Heat pumps shall be certified to comply with all the requirements of the ARI Standard 210/240-89, Unitary Air Conditioning and Air-Source Heat Pump Equipment.** Electric motor-driven vapor compression heat pumps with supplemental electrical resistance heat shall be sized to provide by compression at least 60 percent of the calculated annual heating requirements for the manufactured home being served. A control shall be provided and set to prevent operation of supplemental electrical resistance heat at outdoor temperatures above 40°F (4°C), except for defrost conditions. **Electric motor-driven vapor compression heat pumps with supplemental electric resistance heat conforming to ARI Standard 210/240-89, Unitary Air Conditioning and Air-Source Heat Pump Equipment, shall have HSPF efficiencies not less than as specified in the National Appliance Energy Conservation Act.**	(ii) *Heat pumps shall be certified to comply with all the requirements of the ARI Standard 210/240-89 Unitary Air Conditioning and Air Source Unitary Heat Pump Equipment*. Electric motor-driven vapor compression heat pumps with supplemental electrical resistance heat shall be sized to provide by compression at least 60 percent of the calculated annual heating requirements for the manufactured home being served. A control shall be provided and set to prevent operation of supplemental electrical resistance heat at outdoor temperatures above 40 F, except for defrost operation.
86 ROP ROC	8-14.1 Supply air ducts, fittings, and any dampers contained therein shall be made from galvanized steel, tin-plated steel, or aluminum, or shall be listed in accordance with UL 181, Factory- Made Air Ducts and Air Connectors, Class 0, or Class 1 air ducts and air connectors. Class 1 air ducts and air connectors shall be located at least 3 ft (914	715(a)(1) (1) Supply air ducts, fittings, and any dampers contained therein shall be made from galvanized steel, tin-plated steel, or aluminum, or shall be listed **in accordance with UL 181, Factory- Made Air Ducts and Air Connectors,** Class 0, or Class 1 air ducts and air connectors. Class **1** air ducts **and**	715(a)(1) (a) Supply system. (1) Supply ducts and any dampers contained therein shall be made from galvanized steel, tin-plated steel, or aluminum, or shall be listed Class 0, Class 1, or *Class 2* air ducts. Class *2* air ducts shall be located at least 3 feet from the furnace bonnet or plenum. A duct system

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	mm) from the furnace bonnet or plenum. Air connectors shall not be used for exterior manufactured home duct connection. A duct system integral with the structure shall be of durable construction that can be demonstrated to be equally resistant to fire and deterioration. Ducts constructed from sheet metal shall be in accordance with Table 8-14.1. current table retained	**air connectors** shall be located at least 3 ft (914 mm) from the furnace bonnet or plenum. **Air connectors shall not be used for exterior manufactured home duct connection**. A duct system integral with the structure shall be of durable construction that can be demonstrated to be equally resistant to fire and deterioration. Ducts constructed from sheet metal shall be in accordance with the following table. current table retained	integral with the structure shall be of durable construction that can be demonstrated to be equally resistant to fire and deterioration. Ducts constructed from sheet metal shall be in accordance with the following table: retain current table of minimum thickness for ducts
87 ROP	8-14.3 ~~Sizing of Ducts for Heating~~. Duct Static Pressure Test. The duct static pressure test shall be performed after the system has demonstrated compliance with 8-14.5.	715(a)(2) (2) **Duct Static Pressure Test. The duct static pressure test shall be performed after the system has demonstrated compliance with section 3280.715(a)(4).**	New text, 715(a)(2) (2) Sizing of ducts for heating.
88 ROP	8-14.5 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 8-14.1 and 8-14.2, pressures shall be measured with a water manometer or equivalent device calibrated to read in increments not greater than 1/10 in. (50 Pa) water column. All duct designs requiring crossover duct plenums shall be tested with the plenum in place.	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 8-15.1 and 8-15.2, pressures shall be measured with a water manometer or equivalent device calibrated to read in increments not greater than 1/10 in. (50 Pa) water column. **All duct designs requiring crossover duct plenums shall be tested with the plenum in place.**	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 Sec. 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.
89 ROP	8-14.6.2 Installation instructions for supporting, mechanically fastening, sealing, and insulating the crossover duct and crossover duct extension from	715(a)(5)(ii) (ii) Installation instructions for supporting, **mechanically fastening, sealing, and insulating**	715(a)(5)(ii) (ii) Installation instructions for supporting the crossover duct from the manufactured home shall

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	the manufactured home shall be provided for on-site installation. ~~The duct shall not be in contact with the ground.~~ Instructions shall caution the installer from allowing the crossover duct from being in contact with the ground and describe means to support the duct without compressing the insulation and restricting airflow.	the crossover duct **and crossover duct extension** from the manufactured home shall be provided for on-site installation. **Instructions shall caution the installer from allowing the crossover duct from being in contact with the ground and describe means to support the duct without compressing the insulation and restricting airflow.**	be provided for onsite installation. The duct shall not be in contact with the ground.
90 ROP	Revise 8-14.7 as follows: 8-14.7 Air supply ducts installed outside the thermal envelope shall be insulated with material having an effective thermal resistance (R) of not less than 4, unless they are within manufactured home insulation having a minimum effective value of R-4 for floors, or R-6 for ceilings. Add a new appendix note A-8-14.7: A-8-14.7 This provision intends to separate the duct from the outside air by the stated R-value.	715(a)(6) (6) Air supply ducts **installed outside the thermal envelope** shall be insulated with material having an effective thermal resistance (R) of not less than 4, unless they are within manufactured home insulation having a minimum effective value of R-4 for floors, or R-6 for ceilings.	715(a)(6) (6) Air supply ducts shall be insulated with material having an effective thermal resistance (R) of not less than 4.0 unless they are within manufactured home insulation having a minimum effective value of R-4.0 for floors or R-6.0 for ceilings. No appendix notes in 3280
91 ROP	8-14.8 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-4 in Thermal Zones 1 and 2. I n 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 ~~with~~ 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 8-14.6.2, and shall be listed for exterior use.	715(a)(7) (7) 7 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-4 **in Thermal Zones 1 and 2. I n 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 section 3280.715(a)(5)(ii), **and shall be listed for exterior use.**	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 Sec. 3280.715(a)(5)(ii).

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
92 ROP ROC 92 ROP ROC con't	8-14.10 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 ~~securely fastened~~ 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 ~~individually~~ mechanically fastened. Tapes or caulking compounds shall be permitted to be used for sealing mechanically secure joints. ~~Where used, tape or caulking compound shall not be subjected to deterioration under long exposures to temperatures up to 200°F (93°C) 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. Tapes and mastic closure systems for use with factory-made rigid fiberglass air ducts and air connectors shall be listed in accordance with UL Standard 181A.Tapes and mastic closure systems for use with factory-made flexible air ducts and air connectors shall be listed in accordance with UL Standard 181B.	715(c) (c) 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. **Sealants and tapes shall be applied only to surfaces that are dry, dust-, dirt-, oil-, and grease-free. Tapes and mastic closure systems for use with factory-made rigid fiberglass air ducts and air connectors shall be listed in accordance with UL Standard 181A. Tapes and mastic closure systems for use with factory-made flexible air ducts and air connectors shall be listed in accordance with UL Standard 181B.**	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 deg. F. and to conditions of high humidity, excessive moisture, or mildew.*
93 ROP	8-14.11.1 Ducts shall be securely supported. Nails shall not be driven through duct walls and unnecessary holes shall not be cut therein.	715(d) (d) Supports. Ducts shall be securely supported. **Nails shall not be driven through duct walls and unnecessary holes shall not be cut therein.**	715(d) (d) Supports. Ducts shall be securely supported.
94 ROP	8-14.11.2 Where vertical ducts are installed within closets or rooms, they shall be enclosed with materials equivalent to those used in the closet or room construction.	715(d)(1) (1) **Protection of Vertical Ducts. Where vertical ducts are installed within closets or rooms, they shall be enclosed with materials equivalent to those used in the closet or room construction**	New material not currently addressed in 3280, New 715(d)(1)

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
95a ROP	**9-1.5** ~~Aluminum conductors, aluminum alloy conductors, and aluminum core conductors such as copper-clad aluminum shall not be acceptable for use in branch circuit wiring in manufactured homes.~~	801(e) relocated to 808(a)(1)	801(e) (e) Aluminum conductors, aluminum alloy conductors, and aluminum core conductors such as copper clad aluminum; are not acceptable for use in branch circuit wiring in manufactured homes.
95b ROP	**9-2 Definitions.** **9-2.38 Receptacle.** A receptacle is a contact device installed at the outlet for the connection of an attachment plug. A single receptacle is a single contact device with no other contact device on the same yoke. A multiple receptacle is two or more contact devices on the same yoke . ~~A contact device installed at an outlet for the connection of a single attachment plug. A single receptacle is a single contact device with no other contact device on the same yoke. A multiple receptacle is a single device containing two or more receptacles.~~	802(a)(37) (37) Receptacle. **A receptacle is a contact device installed at the outlet for the connection of an attachment plug. A single receptacle is a single contact device with no other contact device on the same yoke. A multiple receptacle is two or more contact devices on the same yoke.**	(37) *Receptacle means a contact device installed at an outlet for the connection of a single attachment plug. A single receptacle is a single contact device with no other contact device on the same yoke. A multiple receptacle is a single device containing two or more receptacles.*
95c ROP	**Utilization Equipment.** Equipment that utilizes electric energy for ~~mechanical~~, electronic, electromechanical, chemical, heating, lighting, or similar purposes.	802(a)(39) (39) Utilization Equipment. Equipment that utilizes electric energy for **electronic, electromechanical**, chemical, heating, lighting, or similar purposes.	(39) Utilization equipment means equipment which utilizes electric energy for mechanical, chemical, heating, lighting, or similar purposes.
95d ROP	**9-3.4** A ~~listed~~ suitable clamp or the equivalent shall be provided at the distribution panelboard knockout to afford strain relief for the cord to prevent strain from being transmitted to the terminals when the power-supply cord is handled in its intended manner.	803(d) (d) A **suitable** clamp or the equivalent shall be provided at the distribution panelboard knockout to afford strain relief for the cord to prevent strain from being transmitted to the terminals when the power-supply cord is handled in its intended manner.	(d) A listed clamp or the equivalent shall be provided at the distribution panelboard knockout to afford strain relief for the cord to prevent strain from being transmitted to the terminals when the power- supply cord is handled in its intended manner.

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
95e ROP	**9-3.6** The attachment plug cap shall be a 3-pole, 4-wire, grounding type, rated 50 amperes, 125/250 volts with a configuration as shown in Figure 9-3.6 and intended for use with the 50-ampere, 125/250-volt receptacle configuration shown in Figure 9-3.6. It shall be listed, by itself or as part of a power-supply cord assembly , for the purpose , and shall be molded to or installed on the flexible cord so that it ~~adheres~~ is secured tightly to the cord at the point where the cord enters the attachment plug cap. If a right-angle cap is used, the configuration shall be so oriented that the grounding member is farthest from the cord.	803(f) (f) The attachment plug cap shall be a 3-pole, 4-wire, grounding type, rated 50 amperes, 125/250 volts with a configuration as shown in Figure 9-3.6 and intended for use with the 50-ampere, 125/250-volt receptacle configuration shown in Figure 9-3.6. It shall be listed, by itself or as part of a power-supply cord assembly , **for the purpose** , and shall be molded to or installed on the flexible cord so that it **is secured** tightly to the cord at the point where the cord enters the attachment plug cap. If a right-angle cap is used, the configuration shall be so oriented that the grounding member is farthest from the cord.	(f) The attachment plug cap shall be a 3-pole, 4-wire grounding type, rated 50 amperes, 125/250 volts with a configuration as shown herein and intended for use with the 50-ampere, 125/250 receptacle configuration shown. It shall be molded of butyl rubber, neoprene, or other approved materials which have been found suitable for the purpose, and shall be molded to the flexible cord so that it adheres tightly to the cord at the point where the cord enters the attachment-plug cap. If a right-angle cap is used, the configuration shall be so oriented that the grounding member is farthest from the cord.
95f ROP 95f ROP cont	**9-3.9** Where the cord passes through walls or floors, it shall be protected by means of conduits and bushings or the equivalent. The cord shall be permitted to be installed within the manufactured home walls, provided a continuous raceway having a maximum size of 1 1/4 in. (31.8 mm) is installed from the branch-circuit panelboard to the underside of the manufactured home floor. ~~The raceway shall be permitted to be rigid conduit, electrical metallic tubing, or polyethylene (PE), polyvinyl chloride (PVC), or acrylonitrile-butadiene-styrene (ABS) plastic tubing, having a minimum wall thickness of nominal 1/8 in. (3 mm).~~	803(i) (i) Where the cord passes through walls or floors, it shall be protected by means of conduits and bushings or the equivalent. The cord shall be permitted to be installed within the manufactured home walls, provided a continuous raceway **having a maximum size of 1 1/4 in. (31.8 mm)** is installed from the branch-circuit panelboard to the underside of the manufactured home floor.	(i) Where the cord passes through walls or floors, it shall be protected by means of conduit and bushings or equivalent. The cord may be installed within the manufactured home walls, provided a continuous raceway is installed from the branch-circuit panelboard to the underside of the manufactured home floor. The raceway may be rigid conduit, electrical metallic tubing or polyethylene (PE), poly-vinylchloride (PVC) or acrylonitrile-butadiene-styrene (ABS) plastic tubing having a minimum wall thickness of nominal \1/8\ inch.
95g ROP ROC	**9-3.11** Where the calculated load exceeds 50 amperes or where a permanent feeder is used, the supply shall be by means of the following: (a) One mast weatherhead installation, installed in accordance with Article 230 of NFPA 70, National	803(k) (k) Where the calculated load exceeds 50 amperes or where a permanent feeder is used, the supply shall be by means of the following: (1) One mast weatherhead installation, installed in	(k) Where the calculated load exceeds 50 amperes or where a permanent feeder is used, the supply shall be by means of: (1) One mast weatherhead installation installed

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
95g ROP ROC con't	Electrical Code, containing four continuous, insulated, color-coded feeder conductors, one of which shall be an equipment grounding conductor; (b) A ~~listed~~ metal raceway or ~~listed~~ rigid nonmetallic conduit from the disconnecting means in the manufactured home to the underside of the manufactured home, with provisions for the attachment of a suitable junction box or fitting to the raceway on the underside of the manufactured home [with or without conductors as in Section 9-3.11(a)]. The manufacturer shall provide ~~in his~~ written installation instructions stating the proper feeder conductor sizes for the raceway and the size of the junction box to be used; or ~~(c) Service equipment installed on the manufactured home in accordance with Article 230 of NFPA 70, National Electrical Code, and the following:~~ ~~1. The service equipment is installed in a manner acceptable to the authority having jurisdiction;~~ ~~2. Exterior equipment, or the enclosure in which it is installed, shall be weatherproof and installed in accordance with Article 373-2 of NFPA 70, National Electrical Code. Conductors shall be suitable for use in wet locations;~~ ~~3. The neutral conductor shall be connected to the system grounding conductor on the supply side of the main disconnect in accordance with Articles 250-23, 250-25, and 250-53 of NFPA 70, National Electrical Code;~~ ~~4. The manufacturer shall include in its written installation instructions one method of grounding the service equipment at the installation site;~~ ~~5. The minimum size grounding electrode conductor shall be specified in the instructions; and~~	accordance with Article 230 of NFPA 70, National Electrical Code, containing four continuous, insulated, color-coded feeder conductors, one of which shall be an equipment grounding conductor; (2) A metal raceway or rigid nonmetallic conduit from the disconnecting means in the manufactured home to the underside of the manufactured home, with provisions for the attachment of a suitable junction box or fitting to the raceway on the underside of the manufactured home [with or without conductors as in Section 9-3.11(a)]. The manufacturer shall provide written installation instructions **stating** the proper feeder conductor sizes for the raceway and the size of the junction box to be used; or **(3) Service equipment installed in or on the manufactured home provided that all of the following conditions are met:** **(i). The manufacturer shall include in its written installation instructions information indicating that the home shall be secured in place by an anchoring system or installed on and secured to a permanent foundation..** **(ii). The installation of the service equipment complies with Article 230 of NFPA 70, National Electrical Code.** (iii). Means are provided for the connection of a grounding electrode conductor to the service equipment and routing it outside the structure. **(iv). Bonding and grounding of the service shall be in accordance with Article 250, NFPA 70, National Electrical Code;** **(v).** The manufacturer shall include in its written installation instructions one method of grounding the service equipment at the installation site. **The**	in accordance with Article 230 of the National Electrical Code NFPA No. 70-1993 containing four continuous insulated, color-coded, feeder conductors, one of which shall be an equipment grounding conductor; or (2) An approved raceway from the disconnecting means in the manufactured home to the underside of the manufactured home with provisions for the attachment of a suitable junction box or fitting to the raceway on the underside of the manufactured home. The manufacturer shall provide in his written installation instructions, the proper feeder conductor sizes for the raceway and the size of the junction box to be used; or (3) Service equipment installed on the manufactured home in accordance with Article 230 of the National Electrical Code NFPA No. 70-1993; and (i) The installation shall be completed by the manufacturer except for the service connections, the meter and the grounding electrode conductor; (ii) Exterior equipment, or the enclosure in which it is installed shall be weatherproof and installed in accordance with Article 373-2 of the National Electrical Code NFPA No. 70-1993. Conductors shall be suitable for use in wet locations; (iii) The neutral conductor shall be connected to the system grounding conductor on the supply side of the main disconnect in accordance with Articles 250-23, 25, and 53 of NFPA No. 70-1993. (iv) The manufacturer shall include in its written installation instructions one method of grounding the service equipment at the installation site; (v) The minimum size grounding electrode conductor shall be specified in the instructions; and

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
95g ROP ROC con't	~~6. A red warning label shall be mounted on or adjacent to the service equipment. The label shall state the following:~~ ~~WARNING--DO NOT PROVIDE ELECTRICAL POWER UNTIL THE GROUNDING ELECTRODE IS INSTALLED AND CONNECTED (SEE INSTALLATION INSTRUCTIONS).~~ (c) Service equipment installed in or on the manufactured home provided that all of the following conditions are met: 1. The manufacturer shall include in its written installation instructions information indicating that the home shall be secured in place by an anchoring system or installed on and secured to a permanent foundation. 2. The installation of the service equipment complies with Article 230 of NFPA 70, National Electrical Code. 3. Means are provided for the connection of a grounding electrode conductor to the service equipment and routing it outside the structure. 4. Bonding and grounding of the service shall be in accordance with Article 250, NFPA 70, National Electrical Code; 5. The manufacturer shall include in its written installation instructions one method of grounding the service equipment at the installation site. The instructions shall clearly state that other methods of grounding are found in Article 250 of NFPA 70, National Electrical Code. 6. The minimum size grounding electrode conductor shall be specified in the instructions; and 7. A red warning label shall be mounted on or adjacent to the service equipment. The label shall	**instructions shall clearly state that other methods of grounding are found in Article 250 of NFPA 70, National Electrical Code.** (vi). The minimum size grounding electrode conductor shall be specified in the instructions; and (vii). A red warning label shall be mounted on or adjacent to the service equipment. The label shall state the following: WARNING - DO NOT PROVIDE ELECTRICAL POWER UNTIL THE GROUNDING ELECTRODE(S) IS INSTALLED AND CONNECTED (SEE INSTALLATION INSTRUCTIONS).	(vi) A red ``Warning" label shall be mounted on or adjacent to the service equipment. The label shall state:  ``Warning--do not provide electrical power until the grounding electrode is installed and connected (see installation instructions)."

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	state the following: WARNING - DO NOT PROVIDE ELECTRICAL POWER UNTIL THE GROUNDING ELECTRODE(S) IS INSTALLED AND CONNECTED (SEE INSTALLATION INSTRUCTIONS).		
95h ROP	**9-4.1** The branch-circuit equipment shall be permitted to be combined with the disconnecting means as a single assembly. Such a combination shall be permitted to be designated as a distribution panelboard. If a fused distribution panelboard is used, the maximum fuse size for the mains shall be plainly marked, with lettering at least 1/4-in. (6-mm) high and visible when fuses are changed. (See Section ~~Article~~ 110-22 of NFPA 70, National Electrical Code, concerning identification of each disconnecting means and each service, feeder, or branch circuit at the point where it originated, and the type marking needed.)	804(a) (a) The branch-circuit equipment shall be permitted to be combined with the disconnecting means as a single assembly. Such a combination shall be permitted to be designated as a distribution panelboard. If a fused distribution panelboard is used, the maximum fuse size for the mains shall be plainly marked, with lettering at least 1/4-in. (6-mm) high and visible when fuses are changed. (See **Section** 110-22 of NFPA 70, National Electrical Code, concerning identification of each disconnecting means and each service, feeder, or branch circuit at the point where it originated, and the type marking needed.)	(a) The branch-circuit equipment shall be permitted to be combined with the disconnecting means as a single assembly. Such a combination shall be permitted to be designated as a distribution panelboard. If a fused distribution panelboard is used, the maximum fuse size of the mains shall be plainly marked with lettering at least \1/4\-inch high and visible when fuses are changed. See section 110-22 of the National Electrical Code (NFPA No. 70-1993) concerning identification of each disconnecting means and each service, feeder, or branch circuit at the point where it originated and the type marking needed.
95i ROP	**9-4.3 Disconnecting Means.** A single disconnecting means shall be provided in each manufactured home consisting of a circuit breaker, or a switch and fuses and ~~their~~ its accessories installed in a readily accessible location near the point of entrance of the supply cord or conductors into the manufactured home. The main circuit breakers or fuses shall be plainly marked "Main." This equipment shall contain a solderless type of grounding connector or bar for the purposes of grounding, with sufficient terminals for all	804(c) (c) Disconnecting Means. A single disconnecting means shall be provided in each manufactured home consisting of a circuit breaker, or a switch and fuses and **its** accessories installed in a readily accessible location near the point of entrance of the supply cord or conductors into the manufactured home. The main circuit breakers or fuses shall be plainly marked "Main." This equipment shall contain a solderless type of grounding connector or bar for the purposes of grounding, with sufficient	(c) Disconnecting means. A single disconnecting means shall be provided in each manufactured home consisting of a circuit breaker, or a switch and fuses and their accessories installed in a readily accessible location near the point of entrance of the supply cord or conductors into the manufactured home. The main circuit breakers or fuses shall be plainly marked ``Main." This equipment shall contain a solderless type of grounding connector or bar for the purposes of grounding with sufficient terminals for all grounding conductors. The neutral

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	grounding conductors. The neutral bar termination of the grounded circuit conductors shall be insulated in accordance with Section 9-9.2.	terminals for all grounding conductors. The neutral bar termination of the grounded circuit conductors shall be insulated **in accordance with Section 3280.809(b).**	bar termination of the grounded circuit conductors shall be insulated.
95j ROP	**9-4.5** A distribution panelboard employing a main circuit breaker shall be rated not less than 50 amperes and employ a 2- pole circuit breaker rated 40 amperes for a 40-ampere supply cord, or 50 amperes for a 50-ampere supply cord. A distribution panelboard employing a disconnect switch and fuses shall be rated not less than 60 amperes and shall employ a single, 2-pole fuseholder rated not less than 60-ampere s with 40- or 50-ampere main fuses for 40- or 50-ampere supply cords, respectively. The outside of the distribution panelboard shall be plainly marked with the fuse size.	804(e) (e) A distribution panelboard employing a main circuit breaker shall be rated **not less than** 50 amperes and employ a 2- pole circuit breaker rated 40 amperes for a 40-ampere supply cord, or 50 amperes for a 50-ampere supply cord. A distribution panelboard employing a disconnect switch and fuses shall be rated **not less than** 60 amperes and shall employ a single, 2-pole **fuseholder rated not less than** 60-ampere s with 40- or 50-ampere main fuses for 40- or 50-ampere supply cords, respectively. The outside of the distribution panelboard shall be plainly marked with the fuse size.	(e) A distribution panelboard employing a main circuit breaker shall be rated 50 amperes and employ a 2-pole circuit breaker rated 40 amperes for a 40-ampere supply cord, or 50 amperes for a 50-ampere supply cord. A distribution panelboard employing a disconnect switch and fuses shall be rated 60 amperes and shall employ a single 2-pole, 60-ampere fuseholder with 40- or 50-ampere main fuses for 40- or 50-ampere supply cords, respectively. The outside of the distribution panelboard shall be plainly marked with the fuse size.
95k ROC 95k ROC cont	9-4.6 Distribution panelboards shall be located in an accessible location. Distribution panelboards shall not be located in a bathroom or a clothes closet. A clear working space at least 30 in. (762 mm) wide and 30 in. (762 mm) in front of the distribution panelboard shall be provided. This space shall extend from the floor to the top of the distribution panelboard.	804(f) (f) **Distribution panelboards shall be located in an accessible location. Distribution panelboards shall not be located in a bathroom or a clothes closet.** A clear working space at least 30 in. (762 mm) wide and 30 in. (762 mm) in front of the distribution panelboard shall be provided. This space shall extend from the floor to the top of the distribution panelboard.	804(f) The distribution panelboard shall not be located in a bathroom, or in any other inaccessible location, but shall be permitted just inside a closet entry if the location is such that a clear space of 6 inches to easily ignitable materials is maintained in front of the distribution panelboard, and the distribution panelboard door can be extended to its full open position (at least 90 degrees). A clear working space at least 30 inches wide and 30 inches in front of the distribution panelboard shall be provided. This space shall extend from floor to the top of the distribution panelboard.
95l	**9-4.10** ~~A 3 in. by 13/4 in. (76 mm by 44 mm)~~	804(j)	(j) A 3 inch by 1-3/4 inch minimum size tag made

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
ROP ROC 951 ROP ROC con't	~~minimum size tag made of etched, metal-stamped, or embossed brass, stainless steel, anodized or alclad aluminum not less than 0.020 in. (.5 mm) thick, or other approved material [e.g., 0.005 in. (.13 mm) plastic laminates] shall be permanently affixed on the outside, adjacent to the feeder assembly entrance and shall read as follows: THIS CONNECTION FOR 120/240 VOLT, 3-POLE, 4-WIRE, 60-HZ, _____ AMPERE SUPPLY.~~ ~~The correct ampere rating shall be marked in the blank space.~~ The manufacturer shall provide in its written installation instructions or on the data plate the minimum ampere rating of the feeder assembly or, where provided, the service entrance conductors intended for connection to the manufactured home. The rating provided shall not be less than the minimum load as calculated in accordance with 9-11. **9-4.11** When a home is provided with installed service equipment, a single disconnecting means for disconnecting the branch-circuit conductors from the service entrance conductors shall be provided in accordance with Part F of Article 230 of NFPA 70, National Electrical Code. The disconnecting means shall be listed for use as service equipment. The disconnecting means shall be permitted to be combined with the disconnect required by 9-4.3. The disconnecting means shall be rated not more than the ampere supply or service capacity indicated ~~on~~ in the written installation instructions ~~tag~~ required by 9-4.10. ~~**9-4.12** When a home is provided with installed service equipment, the plaque required by 9-4.10 shall read as follows:~~	**(j) The manufacturer shall provide in its written installation instructions or on the data plate the minimum ampere rating of the feeder assembly or, where provided, the service entrance conductors intended for connection to the manufactured home. The rating provided shall not be less than the minimum load as calculated in accordance with Section 3280.811.** (k) When a home is provided with installed service equipment, a single disconnecting means for disconnecting the branch-circuit conductors from the service entrance conductors shall be provided in accordance with Part F of Article 230 of NFPA 70, National Electrical Code. The disconnecting means shall be listed for use as service equipment. The disconnecting means shall be permitted to be combined with the disconnect required by Section 3280.804(c). The disconnecting means shall be rated not more than the ampere supply or service capacity indicated **in the written installation instructions** required by Section 3280.804(j). (l) delete	of etched, metal-stamped or embossed brass, stainless steel, anodized or alclad aluminum not less than 0.020 inch thick, or other approval material (e.g., 0.005 inch plastic laminates) shall be permanently affixed on the outside adjacent to the feeder assembly entrance and shall read: This connection for 120/240 Volt, 3-Pole, 4-Wire, 60 Hertz, _____ Ampere Supply. The correct ampere rating shall be marked on the blank space. (k) When a home is provided with installed service equipment, a single disconnecting means for disconnecting the branch circuit conductors from the service entrance conductors shall be provided in accordance with Part F of Article 230 of the National Electrical Code, NFPA No. 70-1993. The disconnecting means shall be listed for use as service equipment. The disconnecting means may be combined with the disconnect required by Sec. 3280.804(c). The disconnecting means shall be rated not more than the ampere supply or service capacity indicated on the tag required by paragraph (l) of this section. (l) When a home is provided with installed service equipment, the electrical nameplate required by Sec. 3280.804(j) shall read: ``This connection for 120/240 volt, 3 pole, 3 wire, 60 Hertz, _____ Ampere Supply." The correct ampere rating shall be marked in the blank space.

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	~~THIS CONNECTION FOR 120/240-VOLT, 3-POLE, 3-WIRE, 60-HZ, _____ AMPERE SUPPLY.~~ ~~The correct ampere rating shall be marked in the blank space.~~		
95m ROP 95m ROP con't	9-5 (b) Small Appliances. For the small appliance load in kitchens,pantries, dining rooms, and breakfast rooms of manufactured homes, two or more 20-ampere appliance branch circuits, in addition to the branch circuit specified in Section 9-5(a), shall be provided for all receptacle outlets in these rooms, and such circuits shall have no other outlets. ~~Receptacle outlets supplied by at least two appliance receptacle branch circuits shall be installed in the kitchen.~~ Countertop receptacle outlets installed in the kitchen shall be supplied by not less than two small appliance branch circuits, either or both of which shall also be permitted to supply receptacle outlets in the kitchen and other rooms specified above. Exception No. 1: For a receptacle installed solely for the electrical supply to and support of an electric clock in any of the rooms specified above and Exception No. 2: For receptacles installed to provide power for supplemental equipment and lighting on gas-fired ranges, ovens, or counter-mounted cooking units.	805(a)(2) (2)) Small Appliances. For the small appliance load in kitchens,pantries, dining rooms, and breakfast rooms of manufactured homes, two or more 20-ampere appliance branch circuits, in addition to the branch circuit specified in Section 3280.805(a)(1), shall be provided for all receptacle outlets in these rooms, and such circuits shall have no other outlets. **Countertop receptacle outlets installed in the kitchen shall be supplied by not less than two small appliance branch circuits, either or both of which shall also be permitted to supply receptacle outlets in the kitchen and other rooms specified above.** Except for a receptacle installed solely for the electrical supply to and support of an electric clock in any of the rooms specified above and for receptacles installed to provide power for supplemental equipment and lighting on gas-fired ranges, ovens, or counter-mounted cooking units.	(2) Small appliances. For the small appliance load in kitchen, pantry dining room and breakfast rooms of manufactured homes, two or more 20-ampere appliance branch circuits, in addition to the branch circuit specified in Sec. 3280.805(a)(1), shall be provided for all receptacle outlets in these rooms, and such circuits shall have no other outlets. Receptacle outlets supplied by at least two appliance receptacle branch circuits shall be installed in the kitchen.
95n ROP	(c) General Appliances (Including Furnace, Water Heater, Range, and Central or Room Air Conditioner, Etc.). There shall be one or more	805(a)(3) (3) General Appliances (Including Furnace, Water Heater, Range, and Central or Room Air	(3) General appliances (Including furnace, water heater, range, and central or room air conditioner, etc.). There shall be one or more circuits of

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	circuits of adequate rating in accordance with the following: 1. The ampere rating of fixed appliances shall not exceed ~~be over~~ 50 percent of circuit rating if lighting outlets (receptacles, other than kitchen, dining area, and laundry, considered as lighting outlets) are on same circuit.	Conditioner, Etc.). There shall be one or more circuits of adequate rating in accordance with the following: 1. The ampere rating of fixed appliances shall not **exceed** 50 percent of circuit rating if lighting outlets (receptacles, other than kitchen, dining area, and laundry, considered as lighting outlets) are on same circuit.	adequate rating in accordance with the following: (i) Ampere rating of fixed appliances not over 50 percent of circuit rating if lighting outlets (receptacles, other than kitchen, dining area, and laundry, considered as lighting outlets) are on same circuit;
95o ROP ROC	9-6.4 (9) ~~Adjacent to bathroom basins or integral with the light fixture over the bathroom basin~~. At least one wall receptacle outlet shall be installed in bathrooms within 36 in. (914 mm) of the outside edge of each basin. The receptacle outlet shall be located above or adjacent to the basin location. This receptacle shall be in addition to any receptacle that is part of a lighting fixture or appliance. The receptacle shall not be enclosed within a bathroom cabinet or vanity.	806(d)(9) (9) **At least one wall receptacle outlet shall be installed in bathrooms within 36 in. (914 mm) of the outside edge of each basin. The receptacle outlet shall be located above or adjacent to the basin location. This receptacle shall be in addition to any receptacle that is part of a lighting fixture or appliance. The receptacle shall not be enclosed within a bathroom cabinet or vanity.**	(9) Adjacent to bathroom basins or integral with the light fixture over the bathroom basin.
95p ROP	**9-6.6** Receptacle outlets shall not be installed above electric baseboard heaters, unless provided for in the listing or manufacturer's instructions.	806(f) (f) Receptacle outlets shall not be installed above electric baseboard heaters, **unless provided for in the listing or manufacturer's instructions.**	806(f) (f) Receptacle outlets shall not be installed above electric baseboard heaters.
95q ROP	**9-7 Fixtures and Appliances.** **9-7.1** Electrical materials, devices, appliances, fittings, and other equipment installed, intended for use in, or attached to the manufactured home shall be approved for the application and shall be connected in an approved manner when in service. ~~Facilities~~ Means shall be provided to securely	807(a) (a) Electrical materials, devices, appliances, fittings, and other equipment installed, intended for use in, or attached to the manufactured home shall be approved for the application and shall be connected in an approved manner when in service. **Means** shall be provided to securely fasten	3280.807 Fixtures and appliances. (a) Electrical materials, devices, appliances, fittings, and other equipment installed, intended for use in, or attached to the manufactured home shall be approved for the application and shall be connected in an approved manner when in service. Facilities shall be provided to securely fasten

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	fasten appliances when the manufactured home is in transit. (See Section 9-9.) **9-7.2** ~~Specifically l~~ Listed pendant-type fixtures or pendant cords shall be permitted in manufactured homes. **9-7.3** Where a lighting fixture is installed over a bathtub or in a shower stall, it shall be listed for wet locations. [See also ~~Article~~ Section 410-4(d) of NFPA 70, National Electrical Code.] ~~**9-7.4** The switch for shower lighting fixtures and exhaust fans located over a tub or in a shower stall shall be located outside the tub or shower space. (See 9-6.4.)~~	appliances when the manufactured home is in transit. (See Section 3280.809.) (b) Listed pendant-type fixtures or pendant cords shall be permitted in manufactured homes. (c) Where a lighting fixture is installed over a bathtub or in a shower stall, it shall be listed for wet locations. [See also **Section** 410-4(d) of NFPA 70, National Electrical Code.]	appliances when the manufactured home is in transit. (See Sec. 3280.809.) (b) Specifically listed pendant-type fixtures or pendant cords shall be permitted in manufactured homes. (c) If a lighting fixture is provided over a bathtub or in a shower stall, it shall be of the enclosed and gasketed type, listed for wet locations. See also Article 410-4(d) of the National Electrical Code NFPA No. 70-1993. (d) The switch for shower lighting fixtures and exhaust fans located over a tub or in a shower stall shall be located outside the tub shower space. (See Sec. 3280.806(e).)
95r ROP	**9-8.1.1** Aluminum conductors, aluminum alloy conductors, and aluminum core conductors such as copper-clad aluminum shall not be acceptable for use in branch-circuit wiring in manufacture homes.	808(f)(1) relocated from 801(e) (1) **Aluminum conductors, aluminum alloy conductors, and aluminum core conductors such as copper-clad aluminum shall not be acceptable for use in branch-circuit wiring in manufacture homes.**	New, 808 (f)(1)
95s ROP	**9-8.9** Switches shall be rated as follows: (a) For lighting circuits, switches shall ~~have a 10-ampere, 120- to 125-volt rating, or higher if needed for the connected~~ be rated not less than 10 amperes, 120 to 125 volts, and in no case less than the connected load.	808(i) (i) Switches shall be rated as follows: (1) For lighting circuits, switches shall **be rated not less than** 10 amperes, 120 to 125 volts, **and in no case less than the connected** load.	808 (i) Switches shall be rated as follows: (1) For lighting circuits, switches, shall have a 10-ampere, 120-125 volt rating; or higher if needed for the connected load.
95t ROP	~~**9-8.12** The cables or conductors shall be Type NMC, Type UF, TW, or equivalent.~~	808(l) deleted	808(l) The cables or conductors shall be Type NMC, TW, or equivalent.
95u ROP	**9-8.14** Outlet boxes shall fit closely to openings in combustible walls and ceilings and shall be flush	808(o) (o) Outlet boxes shall fit closely to openings in	808 (o) Outlet boxes shall fit closely to openings in combustible walls and ceilings, and they shall be

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	with ~~such surfaces~~. the finish surface or project therefrom. In walls and ceilings of noncombustible material, outlet boxes and fittings shall be installed so that the front edge of the box or fitting will not be set back from the finished surface more than 1/4 in. (6 mm). Plaster, drywall, or plasterboard surfaces that are broken or incomplete shall be repaired so that there will be no gaps or open spaces greater than 1/8 in (3 mm) at the edge of the box or fitting.	combustible walls and ceilings and shall be flush with **the finish surface or project therefrom. In walls and ceilings of noncombustible material, outlet boxes and fittings shall be installed so that the front edge of the box or fitting will not be set back from the finished surface more than 1/4 in. (6 mm). Plaster, drywall, or plasterboard surfaces that are broken or incomplete shall be repaired so that there will be no gaps or open spaces greater than 1/8 in (3 mm) at the edge of the box or fitting.**	flush with such surfaces.
95v ROP	**9-8.15.2** Conductors having an insulation suitable for the temperature encountered shall be run from the appliance terminal connections to a readily accessible outlet box placed at least 1 ft (305 mm) from the appliance. These conductors shall be in a suitable raceway or Type AC or MC cable of at least 18 in. (450 mm) but not more than 6 ft (1.83 mm) in length. ~~that shall extend for at least 4 ft (1220 mm).~~ **9-8.16** A substantial brace for securing a box, fitting, or cabinet shall be as described in NFPA 70, National Electrical Code, ~~Article~~ Section 370-23(~~d~~ b), or the brace, including the fastening Mechanism to attach the brace to the home structure, shall withstand a force of 50 lb (22.7 kg) applied to the brace at the intended point(s) of attachment for the box in a direction perpendicular to the surface where the box is installed.	808(p)(2) (2) Conductors having an insulation suitable for the temperature encountered shall be run from the appliance terminal connections to a readily accessible outlet box placed at least 1 ft (305 mm) from the appliance. These conductors shall be in a suitable **raceway or Type AC or MC cable of at least 18 in. (450 mm) but not more than 6 ft (1.83 mm) in length** ~~for at least 4 ft (1220 mm)~~. (q) A substantial brace for securing a box, fitting, or cabinet shall be as described in NFPA 70, National Electrical Code, **Section** 370-23(b), or the brace, including the fastening Mechanism to attach the brace to the home structure, shall withstand a force of 50 lb (22.7 kg) applied to the brace at the intended point(s) of attachment for the box in a direction perpendicular to the surface where the box is installed.	(2) Conductors having an insulation suitable for the temperature encountered shall be run from the appliance terminal connections to a readily accessible outlet box placed at least one foot from the appliance. These conductors shall be in a suitable raceway which shall extend for at least 4 feet. (q) A substantial brace for securing a box, fitting or cabinet shall be as described in the National Electrical Code, NFPA 70-1993 Article 370-13(d), or the brace, including the fastening mechanism to attach the brace to the home structure, shall withstand a force of 50 lbs. Applied to the brace at the intended point(s) of attachment for the box in a direction perpendicular to the surface in which the box is installed.
95v ROP con't	~~**9-8.18** Outlet boxes shall fit closely to the openings in combustible walls and ceilings, with a maximum of a 1/8 in. (3 mm) gap. They shall be flush with the finish surface or project therefrom.~~	(r) deleted	(r) Outlet boxes shall fit closely to the openings in combustible wall and ceilings with a maximum of a \1/8\ inch gap. They shall be flush with the finish surface or project therefrom.

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
95w ROP	**9-11 Calculations.** **9-11.1** The following method shall be employed in computing the supply cord and distribution-panelboard load for each feeder assembly for each manufactured home and shall be based on a 3- wire, 120/240-volt supply with 120-volt loads balanced between the two legs of the 3-wire system. (a) Lighting and Small Appliance Load: Lighting Volt-Amperes: Length times width of manufactured home (outside dimensions exclusive of coupler) times 3 volt-amperes per sq ft; e.g., length x width x 3 = lighting volt-amperes. Lighting circuits shall be permitted to serve built-in gas ovens with electric service only for lights, clocks, or timers, or listed cord-connected garbage disposal units. Small Appliance Volt-Amperes: Number of circuits times 1500 volt-amperes for each 20-ampere appliance receptacle circuit (see definition of "Appliance, Portable"); e.g., Number of circuits x 1500 = small appliance volt-amperes. <u>Laundry Area Circuit Volt-Amperes: 1500 volt-amperes</u> Total Volt-Amperes: Lighting volt-amperes plus small appliance plus laundry = total volt-amperes. First 3000 total volt-amperes at 100 percent plus remainder at 35 percent = volt-amperes to be divided by 240 volts to obtain current (amperes) per leg.	811 (a) The following method shall be employed in computing the supply cord and distribution-panelboard load for each feeder assembly for each manufactured home and shall be based on a 3- wire, 120/240-volt supply with 120-volt loads balanced between the two legs of the 3-wire system. (1) Lighting and Small Appliance Load: Lighting Volt-Amperes: Length times width of manufactured home (outside dimensions exclusive of coupler) times 3 volt-amperes per sq ft; e.g., length x width x 3 = lighting volt-amperes. Lighting circuits shall be permitted to serve built-in gas ovens with electric service only for lights, clocks, or timers, or listed cord-connected garbage disposal units. Small Appliance Volt-Amperes: Number of circuits times 1500 volt-amperes for each 20-ampere appliance receptacle circuit (see definition of "Appliance, Portable"); e.g., Number of circuits x 1500 = small appliance volt-amperes. **Laundry Area Circuit Volt-Amperes: 1500 volt-amperes** Total Volt-Amperes: Lighting volt-amperes plus small appliance plus laundry = total volt-amperes. First 3000 total volt-amperes at 100 percent plus remainder at 35 percent = volt-amperes to be divided by 240 volts to obtain current (amperes) per leg.	3280.811 Calculations. (a) The following method shall be employed in computing the supply cord and distribution-panelboard load for each feeder assembly for each manufactured home and shall be based on a 3-wire, 120/240 volt supply with 120 volt loads balanced between the two legs of the 3-wire system. The total load for determining power supply by this method is the summation of: (1) Lighting and small appliance load as calculated below: (i) Lighting volt-amperes: Length time width of manufactured home (outside dimensions exclusive of coupler) times 3 volt-amperes per square foot; e.g. Length x width x 3=lighting volt-amperes. (ii) Small appliance volt-amperes: Number of circuits time 1,500 volt-amperes for each 20-ampere appliance receptacle circuit (see definition of ``Appliance Portable" with Note): e.g. Number of circuits x 1,500=small appliance volt-amperes. (iii) Total volts-amperes: Lighting volts-amperes plus small appliance=total volt-amperes. (iv) First 3,000 total volts-amperes at 100 percent plus remainder at 35 percent=watts to be divided by 240 volts to obtain current (amperes) per leg.
95x ROP	9-11.1 (c) The following example is given to illustrate the application of this method of calculation: Example. A manufactured home is 70 ft x 10 ft and	811(a)(6) (6) The following example is given to illustrate the application of this method of calculation: Example. A manufactured home is 70 ft x 10 ft and	(6) If outlets or circuits are provided for other than factory- installed appliances, include the anticipated load. The following example is given to illustrate the application of this Method of

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	has two portable appliance circuits, a laundry area, a 1000-volt-ampere, 240-volt heater, a 200-volt-ampere, 120-volt exhaust fan, a 400-volt-ampere, 120-volt dishwasher, and a 7000-volt-ampere electric range. [See Table 9-11.1(c).]	has two portable appliance circuits, **a laundry area**, a 1000-volt-ampere, 240-volt heater, a 200-volt-ampere, 120-volt exhaust fan, a 400-volt-ampere, 120-volt dishwasher, and a 7000-volt-ampere electric range. [See Table.]	Calculation: Example. A manufactured home is 70 x 10 feet and has two portable appliance circuits, a 1000 volt-ampere 240 volt heater, a 200 volt- ampere 120 volt exhaust fan, a 400 volts-ampere 120 volt dishwasher and a 7000 volt-ampere electric range.
95y	**9-15 Polarization.** **9-15.1** The white conductor shall be employed for the grounded (neutral) circuit conductors only and shall be connected to the white terminal or lead on receptacle outlets and fixtures. The grounded conductor shall be the unswitched wire in switched circuits. Exception: A cable containing an insulated conductor with a white or natural gray outer finish or a marking of three continuous white stripes shall be permitted for single-pole, 3-way, or 4-way switch loops where this ~~the white or natural gray~~ conductor is used for the supply to the switch, but not as a return conductor from the switch to the switched outlet. In these applications, ~~reidentification of the white or natural gray conductor shall not be required~~. the conductor with white or natural gray insulation or with three continuous white stripes shall be permanently reidentified to indicate its use by painting or other effective means at its terminations and at each location where the conductor is visible and accessible.	815(a) (a) The white conductor shall be employed for the grounded (neutral) circuit conductors only and shall be connected to the white terminal or lead on receptacle outlets and fixtures. The grounded conductor shall be the unswitched wire in switched circuits. Exception: A cable containing an insulated conductor with a white or natural gray outer finish **or a marking of three continuous white stripes** shall be permitted for single-pole, 3-way, or 4-way switch loops where **this** conductor is used for the supply to the switch, but not as a return conductor from the switch to the switched outlet. In these applications **the conductor with white or natural gray insulation or with three continuous white stripes shall be permanently reidentified to indicate its use by painting or other effective means at its terminations and at each location where the conductor is visible and accessible.**	3280.815 Polarization. (a) The identified (white) conductor shall be employed for grounding circuit conductors only and shall be connected to the identified (white) terminal or lead on receptacle outlets and fixtures. It shall be the unswitched wire in switched circuits, except that a cable containing an identified conductor (white) shall be permitted for single-pole three-way or four-way switch loops where the connections are made so that the unidentified conductor is the return conductor from the switch to the outlet. Painting of the terminal end of the wire shall not be required.
96 ROP	10-1 This chapter shall cover the general requirements for designing the structure of the manufactured home ~~to fully withstand the adverse~~	901 This chapter shall cover the general requirements for designing the structure of the manufactured	901 Scope. Subpart J of this standard covers the general requirement for designing the structure of the

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	~~effects of transportation shock and vibration without degradation of the integrated structure or of its component parts, and the specific requirements pertaining to the transportation system and its relationship to the structure~~ for transportation.	home **for transportation.**	manufactured home to fully withstand the adverse effects of transportation shock and vibration without degradation of the integrated structure or of its component parts and the specific requirements pertaining to the transportation system and its relationship to the structure.
97a ROP ROC	**11.1.2.1 AA Publications** AA-30, Specification for Aluminum Structures Construction Manual Series, Section 1, fifth edition, 1986. Specifications and Guidelines for Aluminum Structures, Aluminum Design Manual, 1994.	AA-30, Specification for Aluminum Structures Construction Manual Series, Section 1, fifth edition, 1986. Specifications and Guidelines for Aluminum Structures, Aluminum Design Manual, 1994.	304 Steel Specification for Aluminum Structures Construction Manual Series-- Section 1, Fifth Edition--1986, The Aluminum Association.
	11.1.2.2 AAMA Publications AAMA/NWWDA 101/I.S.2, Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors, 1997 (replaces AAMA/NWWDA I.S.1, I.S.2, I.S.3, and I.S. 4)	**AAMA/NWWDA 101/I.S.2, Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors, 1997**	304 Wood and Wood Products Wood Flush Doors--ANSI/NWWDA I.S.1-87. Wood Windows--ANSI/NWWDA I.S.2-87. Wood Sliding Patio Doors--NWWDA-I.S.3-88. Water Repellent Preservative Non Pressure Treatment for Millwork--NWWDA-I.S.4-81.
	AAMA 1701.2, Primary Window and Sliding Glass Door: Voluntary Standard for Utilization in Manufactured Housing, 1995 ~~1985~~ 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 edition.	AAMA 1701.2, Primary Window and Sliding Glass Door: Voluntary Standard for Utilization in Manufactured Housing, **1995** edition. AAMA 1702.2, Swinging Exterior Passage Doors: Voluntary Standard for Utilization in Manufactured Housing, **1995** edition. AAMA 1704, Voluntary Standard: Egress Window Systems for Utilization in Manufactured Housing, 1985 edition.	403/404 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.
97a	**11.1.2.3 AFPA Publications** National Design Specifications for Wood Construction, 1997.	National Design Specifications for Wood Construction, **1997**.	304 Wood and Wood Products National Design Specifications for Wood Construction, 1991 Edition, With Supplement,

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
ROP ROC con't	AFPA Wood Structural Design Data, 1989, Revised 1992. AFPA PS-20-70, Span Tables for Joists and Rafters, 1993. AFPA Design Values for Joists and Rafters, American Softwood Lumber Standard Sizes, 1993.	AFPA Wood Structural Design Data, 1989, Revised 1992. AFPA PS-20-70, Span Tables for Joists and Rafters, 1993. AFPA Design Values for Joists and Rafters, American Softwood Lumber Standard Sizes, **1993**.	Design Values for Wood Construction, AFPA. Wood Structural Design Data, 1986 Edition With 1992 Revisions, AFPA. AFPA PS-20-70, Span Tables for Joists and Rafters, 1993. Design Values for Joists and Rafters, American Softwood Lumber Standard Sizes, 1992, AFPA
	11.1.2.5 AISC Publications AISC-S335, Specification for Structural Steel Buildings Allowable Stress Design and Plastic Design, 1989.	AISC-S335, Specification for Structural Steel Buildings Allowable Stress Design and Plastic Design, 1989.	305 AISC-S335, Specification for Structural Steel Buildings Allowable Stress Design and Plastic Design, 1989.
	11.1.2.6 AISI Publications AISI-SG 971 ~~673~~, Specification for the Design of Cold-Formed Steel Structural Members, 1996,~~1986 edition, with 1989 Addendum.~~	AISI-SG **971**, Specification for the Design of Cold-Formed Steel Structural Members, **1996**	304 Steel AISI-SG 673, Specification for the Design of Cold-Formed Steel Structural Members, 1986 edition, with 1989 Addendum.
	11.1.2.7 AITC Publications AITC A 190.1, Wood Products - Structural Glued Laminated Timber, 1992.	AITC A 190.1, Wood Products - Structural Glued Laminated Timber, 1992.	304 Wood and Wood Products AITC A 190.1, Wood Products - Structural Glued Laminated Timber, 1992.
	11.1.2.8 ANSI Publications ANSI A 135.4, Basic Hardboard, 1995. ANSI A 135.5, Prefinished Hardboard Paneling, 1995. ANSI A 135.6, Hardboard Siding, 1990. ANSI A 208.1, Wood Particleboard, 1999.	ANSI A 135.4, Basic Hardboard, **1995**. ANSI A 135.5, Prefinished Hardboard Paneling, **1995**. ANSI A 135.6, Hardboard Siding, 1990. ANSI A 208.1, Wood Particleboard, **1999**.	304 Wood and Wood Products ANSI A 135.4, Basic Hardboard, 1982. ANSI A 135.5, Prefinished Hardboard Paneling, 1988. ANSI A 135.6, Hardboard Siding, 1990. ANSI A 208.1, Wood Particleboard, 1989.
	ANSI Z 34.1, For Certification - Third-Party Certification Program, 1993.	ANSI Z 34.1, For Certification - Third-Party Certification Program, **1993**.	403 ANSI Z34.1-1987, ``For Certification-Third-Party Certification Program.
	ANSI Z 97.1, Safety Performance Specifications and Methods of Test for Safety Glazing Materials	ANSI Z 97.1, Safety Performance Specifications and Methods of Test for Safety Glazing Materials	304 Unclassified ANSI Z 97.1, Safety Performance Specifications and Methods of Test for Safety Glazing Materials

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
97a ROP ROC con't	Used in Buildings, 1984.	Used in Buildings, 1984.	Used in Buildings, 1984.
	ANSI Manual for Structural Applications of Steel Cables for Building, 1975	ANSI Manual for Structural Applications of Steel Cables for Building, **1975**	304 Steel ANSI Manual for Structural Applications of Steel Cables for Building, 1973
	11.1.2.9 APA Publications APA-E 30P, APA Design/Construction Guide, Residential and Commercial, 1996. APA-H 815E, Design and Fabrication of All-Plywood Beams, Supp. 5, 1995. APA PS-1-99, Voluntary Product Standard, Construction and Industrial Plywood, V99, 1999. APA PS-2-96, Performance Standard for Wood-Based Structural Use Panels, 1996. (replaces 108) APA-S 812Q, Design and Fabrication of Glued Plywood-Lumber Beams, Supp. 2, 1996. APA-S 811N, Design and Fabrication of Plywood Curved Panels, Supp. 1, 1995. APA-U 813L, Design and Fabrication of Plywood Stressed-Skin Panels, Supp. 3, 1996. APA-U 814H, Design and Fabrication of Plywood Sandwich Panels, Supp. 4, 1993. APA-Y 510S, Plywood Design Specification, 1997.	APA-E 30P, APA Design/Construction Guide, Residential and Commercial, **1996.** APA-H 815**E**, Design and Fabrication of All-Plywood Beams, **Supp. 5, 1995.** APA PS-1-99, Voluntary Product Standard, Construction and Industrial Plywood, **V99, 1999.** **APA PS-2-96, Performance Standard for Wood-Based Structural Use Panels, 1996.** APA-S 812**Q**, Design and Fabrication of Glued Plywood-Lumber Beams, Supp. 2, **1996.** APA-S 811**N**, Design and Fabrication of Plywood Curved Panels, **Supp. 1, 1995.** APA-U 813**L**, Design and Fabrication of Plywood Stressed-Skin Panels, Supp. 3, **1996.** APA-U 814**H**, Design and Fabrication of Plywood Sandwich Panels, Supp. 4, **1993.** APA-Y 510S, Plywood Design Specification, **1997.**	304 Wood and Wood Products APA Design/Construction Guide, Residential and Commercial--APA E30M- 1993. Design and Fabrication of All-Plywood Beams, Suppl. 5--APA-H 815D- 1989. Voluntary Product Standard, Construction and Industrial Plywood--PS- 1-83. Performance Standards and Policies for Structural Use Panels--APA- PRP-E-108P, E445N-1989. Design and Fabrication of Glued Plywood-Lumber Beams, Suppl. 2--APA- S 812P-1992. Design and Fabrication of Plywood Curved Panels, Suppl. 1--APA-S 811M-1990. Design and Fabrication of Plywood Stressed-Skin Panels, Suppl. 3-- APA-U 813K-1990. Design and Fabrication of Plywood Sandwich Panels, Suppl. 4--APA-U 814G-1990. Plywood Design Specification--APA-Y 510Q,1993.
	11.1.2.11 ASCE Publications ASCE 7, Minimum Design Loads for Buildings and Other Structures, 1988.	ASCE 7, Minimum Design Loads for Buildings and Other Structures, 1988.	304 Unclassified American Society of Civil Engineering Minimum Design Loads for Buildings and Other Structures--ANSI/ASCE 7-88.
	ASCE 8, Design of Cold-Formed Stainless Steel Structural Members, 1991. ASCE 19, Structural Applications of Steel Cables for Buildings, 1996.	ASCE 8, Design of Cold-Formed Stainless Steel Structural Members, **1991.** ASCE 19, Structural Applications of Steel Cables for Buildings, **1996.**	304 Steel Stainless Steel Cold-Formed Structural Design Manual--AISI-1974. Manual for Structural Applications of Steel Cables for Buildings-- AISI-1973.

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
97a ROP ROC con't	**11.1.2.15 ASTM Publications** ASTM C 36, Standard Specification for Gypsum Wallboard, B-95.	ASTM C 36, Standard Specification for Gypsum Wallboard, **B-95.**	304 Other Standard Specification for Gypsum Wallboard--ASTM C36-93.
	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, 1991. ASTM D 4442, Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials, 1999. ASTM D 4444, Standard Test Methods for Use and Calibration of Hand-Held Moisture Meters, 1992. ASTM E 773, Standard Test Methods for Seal Durability of Sealed Insulating Glass Units, 1997. ASTM E 774, Standard Specification for Sealed Insulating Glass Units, 1997. ASTM E 1333, Standard Test Method for Determining Formaldehyde Levels from Wood Products Under Defined Test Conditions Using a Large Chamber, 1996.	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, 1991. ASTM D 4442, Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials, **1999**. ASTM D 4444, Standard Test Methods for Use and Calibration of Hand-Held Moisture Meters, 1992. ASTM E 773, Standard Test Methods for Seal Durability of Sealed Insulating Glass Units, **1997**. ASTM E 774, Standard Specification for Sealed Insulating Glass Units, **1997**. ASTM E 1333, Standard Test Method for Determining Formaldehyde Levels from Wood Products Under Defined Test Conditions Using a Large Chamber, **1996.**	304 Wood and Wood Products 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. 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. Standard Test Method for Determining Formaldehyde Levels from Wood Products Under Defined Test Conditions Using a Large Chamber, ASTM E- 1333-90.
	11.1.2.19 HVPA Publications HPVA SG 96, Structural Design Guide for Hardwood Plywood Wall Panels Design Guide HPVA, HP-1, American National Standard for Hardwood and Decorative Plywood, 1994.	HPVA SG 96, Structural Design Guide for Hardwood Plywood Wall Panels Design Guide HPVA, HP-1, American National Standard for Hardwood and Decorative Plywood, **1994**.	304 Wood and Wood Products Structural Design Guide for Hardwood Plywood Wall Panels—HPMA Design Guide HP-SG-86 Interim Voluntary Standard for Hardwood and Decorative Plywood—HPVA Interim Standard HP-1-1993.
	11.1.1 NFPA Publications NFPA 220, Standard on Types of Building Construction, 1995 edition.	NFPA 220, Standard on Types of Building Construction, 1995 edition.	NFPA 220, Standard on Types of Building Construction, 1995 edition.

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
97a ROP ROC con't	**11.1.2.20 HUD-FHA Publications** ~~UM 25d, Application and Fastening Schedule: Power-Driven, Mechanically Driven and Manually Driven Fasteners - HUD-FHA Use of Materials Bulletin, 1973.~~ NER 272, Power Driven Staples, Nails, and Allied Fasteners for use in all Types of Building Construction, 3/97 **11.1.2.31 SJI Publications** SJI, Standard Specifications Load Tables and Weight Tables for Steel Joists and Joist Girders, 40th edition. **11.1.2.32 TPI Publications** ~~TPI Design Specifications for Metal Plate Connected Wood Trusses, 1990.~~	**NER 272, Power Driven Staples, Nails, and Allied Fasteners for use in all Types of Building Construction, 3/97** SJI, Standard Specifications Load Tables and Weight Tables for Steel Joists and Joist Girders, **40th edition**.	304 Fasteners Application and Fastening Schedule: Power-Driven, Mechanically Driven and Manually Driven Fasteners--HUD-FHA Use of Materials Bulletin--UM-25d-73 304 Steel 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. 304 Wood and Wood Products Design Specifications for Metal Plate Connected Wood Trusses--TPI-85
97b ROP	**11.1.2.15 ASTM Publications** ASTM E 162, Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source, 1994. J-6461, "Development of Mobile Home Fire Test Methods to Judge the Fire-Safe Performance of Foam Plastic." 1989 NFPA 255, Standard Method of Test of Surface Burning Characteristics of Building Materials, 1996 edition.	ASTM E 162, Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source, **1994**. J-6461, "Development of Mobile Home Fire Test Methods to Judge the Fire-Safe Performance of Foam Plastic." **1989** **NFPA 255, Standard Method of Test of Surface Burning Characteristics of Building Materials, 1996 edition.**	203/207 Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source, ASTM E 162-90. Development of Mobile Home Fire Test Methods to Judge the Fire Safe Performance of Foam Plastic, J-6461 Standard Test Method for Surface Burning Characteristics of Building Materials, ASTM E 84-91a.
97c ROC	**11.1.2.27 NSF Publications** NSF 61, Drinking Water System Components - Health Effects **11.1.2.14 ASSE Publications**	**NSF 61, Drinking Water System Components - Health Effects**	

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
97c ROC con't	ASSE 1051, Performance Requirements for Air Admittance Valves for Plumbing Drainage Systems, Fixture and Branch Devices. (1998)	**ASSE 1051, Performance Requirements for Air Admittance Valves for Plumbing Drainage Systems, Fixture and Branch Devices. (1998)**	
	Plumbing Fixtures: **11.1.2.8 ANSI Publications** ANSI Z124.5, Plastic Toilet (Water Closet) Seats (1997) ANSI Z124.7, Prefabricated Plastic Spa Shells (1997) ANSI Z124.8, Plastic Bathtub Liners (1990) ANSI Z124.9, Plastic Urinal Fixtures (1994)	**Plumbing Fixtures:** **ANSI Z124.5, Plastic Toilet (Water Closet) Seats (1997)** **ANSI Z124.7, Prefabricated Plastic Spa Shells (1997)** **ANSI Z124.8, Plastic Bathtub Liners (1990)** **ANSI Z124.9, Plastic Urinal Fixtures (1994)**	
	11.1.2.13 ASME Publications ASME A112.4.1, Water Heater Relief Valve Drain Tubes (1993) ASME A112.18.6, Flexible Water Connectors (1999) ASME A112.18.3, Performance Requirements for Backflow Protection Devices and Systems in Plumbing Fixture Fittings (1996) ASME A112.19.9M, Non-Vitreous Ceramic Plumbing Fixtures (1998) ASME A119.19.10, Dual Flush Devices for Water Closets ASME A112.18.7, Deck Mounted Bath/Shower Transfer Valves with Integral BackFlow Protection (1999)	**ASME A112.4.1, Water Heater Relief Valve Drain Tubes (1993)** **ASME A112.18.6, Flexible Water Connectors (1999)** **ASME A112.18.3, Performance Requirements for Backflow Protection Devices and Systems in Plumbing Fixture Fittings (1996)** **ASME A112.19.9M, Non-Vitreous Ceramic Plumbing Fixtures (1998)** **ASME A119.19.10, Dual Flush Devices for Water Closets** **ASME A112.18.7, Deck Mounted Bath/Shower Transfer Valves with Integral BackFlow Protection (1999)**	604 Materials Plumbing Fixture Fittings- ANSI/ASME A112.18.1M-1989.
	ASME A112.4.3, Plastic Fittings for Connecting Water Closets to the Sanitary Drainage System. (1999)	**ASME A112.4.3, Plastic Fittings for Connecting Water Closets to the Sanitary Drainage System. (1999)**	

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	ASME A112.18.1M, Plumbing Fixture Fittings - 1996	ASME A112.18.1M, Plumbing Fixture Fittings – **1996**	
97d ROP	**11.1.2.2 AAMA Publications** AAMA 1503.1, Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors, and Glazed Wall Sections, 1988 edition. **11.1.2.8 ANSI Publications** ~~ANSI C72.1, Electric Storage Water Heaters, 1972~~. ANSI Z 21.1, Household Cooking Gas Appliances, 1996. ANSI Z 21.5.1, Gas Clothes Dryers Volume I Type 1 Clothes Dryers, 1995. ANSI Z 21.10.1, Gas Water Heaters, Volume I, Storage Water Heaters with Input/Ratings of 75,000 Btu per Hour or Less, 1993. ANSI Z 21.15, Manually Operated Gas Valves for Appliances, Appliance Connector Valves and Hose End Valves, 1997. ANSI Z 21.19, Refrigerators Using Gas Fuel, 1990. ANSI Z 21.20, Automatic Gas Ignition Systems and Components, 1997. ANSI Z 21.21, Automatic Valves for Gas Appliances, 1995. ANSI Z 21.23, Gas Appliance Thermostats, 1993. ANSI Z 21.24, Metal Connectors for Gas Appliances, 1997. ANSI Z 21.40.1, Gas-Fired Absorption Summer Air Conditioning Appliances, 1996. ANSI Z 21.47, Gas-Fired Central Furnaces (Except	AAMA 1503.1, Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors, and Glazed Wall Sections, 1988 edition. ANSI Z 21.1, Household Cooking Gas Appliances, 1996. ANSI Z 21.5.1, Gas Clothes Dryers Volume I Type 1 Clothes Dryers, 1995. ANSI Z 21.10.1, Gas Water Heaters, Volume I, Storage Water Heaters with Input/Ratings of 75,000 Btu per Hour or Less, 1993. ANSI Z 21.15, Manually Operated Gas Valves for Appliances, Appliance Connector Valves and Hose End Valves, **1997**. ANSI Z 21.19, Refrigerators Using Gas Fuel, 1990. ANSI Z 21.20, Automatic Gas Ignition Systems and Components, **1997**. ANSI Z 21.21, Automatic Valves for Gas Appliances, **1995**. ANSI Z 21.23, Gas Appliance Thermostats, 1993. ANSI Z 21.24, Metal Connectors for Gas Appliances, **1997**. ANSI Z 21.40.1, Gas-Fired Absorption Summer Air Conditioning Appliances, **1996**. ANSI Z 21.47, Gas-Fired Central Furnaces (Except	508 AAMA 1503.1, Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors, and Glazed Wall Sections, 1988 edition. 707 ANSI C72.1, Electric Storage Water Heaters, 1972 703 Minimum Standards ANSI Z 21.1, Household Cooking Gas Appliances, 1996. ANSI Z 21.5.1, Gas Clothes Dryers Volume I Type 1 Clothes Dryers, 1995. ANSI Z 21.10.1, Gas Water Heaters, Volume I, Storage Water Heaters with Input/Ratings of 75,000 Btu per Hour or Less, 1993. ANSI Z 21.15, Manually Operated Gas Valves for Appliances, Appliance Connector Valves and Hose End Valves, 1992. ANSI Z 21.19, Refrigerators Using Gas Fuel, 1990. ANSI Z 21.20, Automatic Gas Ignition Systems and Components, 1993. ANSI Z 21.21, Automatic Valves for Gas Appliances, 1993. ANSI Z 21.23, Gas Appliance Thermostats, 1993. ANSI Z 21.24, Metal Connectors for Gas Appliances, 1993. ANSI Z 21.40.1, Gas-Fired Absorption Summer Air Conditioning Appliances, 1981. ANSI Z 21.47, Gas-Fired Central Furnaces

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
	Direct Vent Central Furnaces), 1995. ~~ANSI Z 21.64, Direct Vent Central Furnaces, 1990.~~	Direct Vent Central Furnaces), **1995**.	(Except Direct Vent Central Furnaces), 1993. ANSI Z 21.64, Direct Vent Central Furnaces, 1990.
97d ROP con't	**11.1.2.10 ARI Publications** ARI 210/240, Unitary Air-Conditioning and Air-Source Heat Pump Equipment, 1989.	ARI 210/240, Unitary Air-Conditioning and Air-Source Heat Pump Equipment, 1989.	703 Minimum Standards ARI 210/240, Unitary Air-Conditioning and Air-Source Heat Pump Equipment, 1989.
	11.1.2.12 ASHRAE Publications ASHRAE Handbook of Fundamentals, 1997.	ASHRAE Handbook of Fundamentals, **1997**.	508 ASHRAE Handbook of Fundamentals, 1989.
	11.1.2.13 ASME Publications ASME B 1.20.1, Pipe Threads, General Purpose (Inch), 1983. ASME, Boiler and Pressure Code, 1998	ASME B 1.20.1, Pipe Threads, General Purpose (Inch), 1983. ASME, Boiler and Pressure Code, **1998**	604/704 ASME B 1.20.1, Pipe Threads, General Purpose (Inch), 1983. ASME Boiler and Pressure Vessel Code, 1986
	11.1.2.15 ASTM Publications ASTM A 539, Standard Specification for Electric-Resistance-Welded Coiled Steel Tubing for Gas and Fuel Oil Lines, 1990. ASTM B 280, Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service, A-95.	ASTM A 539, Standard Specification for Electric-Resistance-Welded Coiled Steel Tubing for Gas and Fuel Oil Lines, 1990. ASTM B 280, Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service, A-95.	703 Minimum Standards ASTM A 539, Standard Specification for Electric-Resistance-Welded Coiled Steel Tubing for Gas and Fuel Oil Lines, 1990. ASTM B 280, Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service, A-95.
	ASTM E 96, Standard Test Methods for Water Vapor Transmission of Materials, 1995.	ASTM E 96, Standard Test Methods for Water Vapor Transmission of Materials, 1995.	504 ASTM E 96, Standard Test Methods for Water Vapor Transmission of Materials, 1995.
	11.1.2.21 HUD-USER Publications PNL 8006, HUD User No. 0005945, "Overall U-values and Heating/Cooling Loads - Manufactured Homes.", 1992	PNL 8006, HUD User No. 0005945, "Overall U-values and Heating/Cooling Loads - Manufactured Homes.", 1992	508 PNL 8006, HUD User No. 0005945, "Overall U-values and Heating/Cooling Loads - Manufactured Homes.", 1992

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
97d ROP con't	**11.1.2.22 IAPMO Publications** IAPMO TSC 9, Material and Property Standard for Diversion Tees and Twin Waste Elbows, 1984.	IAPMO TSC 9, Material and Property Standard for Diversion Tees and Twin Waste Elbows, 1984.	703 Minimum Standards IAPMO TSC 9, Material and Property Standard for Diversion Tees and Twin Waste Elbows, 1984.
	11.1.2.23 IAS Publications No. 3-87, AGA Requirements for Gas Connectors for Connection of Fixed Appliances for Outdoor Installation, Park Trailers and Manufactured (Mobile) Homes to the Gas Supply.	No. 3-87, AGA Requirements for Gas Connectors for Connection of Fixed Appliances for Outdoor Installation, Park Trailers and Manufactured (Mobile) Homes to the Gas Supply.	703 Minimum Standards No. 3-87, AGA Requirements for Gas Connectors for Connection of Fixed Appliances for Outdoor Installation, Park Trailers and Manufactured (Mobile) Homes to the Gas Supply.
	11.1.1 NFPA Publications NFPA 31, Standard for the Installation of Oil-Burning Equipment, 1997 edition. NFPA 54, National Fuel Gas Code, 1996 edition. NFPA 58, Standard for the Storage and Handling of Liquefied Petroleum Gases, 1995 edition. NFPA 90B, Standard for the Installation of Warm Air Heating and Air Conditioning Systems, 1996 edition.	NFPA 31, Standard for the Installation of Oil-Burning Equipment, 1997 edition. NFPA 54, National Fuel Gas Code, 1996 edition. NFPA 58, Standard for the Storage and Handling of Liquefied Petroleum Gases, 1995 edition. NFPA 90B, Standard for the Installation of Warm Air Heating and Air Conditioning Systems, 1996 edition.	703 Minimum Standards NFPA 31, Standard for the Installation of Oil-Burning Equipment, 1997 edition. NFPA 54, National Fuel Gas Code, 1996 edition. NFPA 58, Standard for the Storage and Handling of Liquefied Petroleum Gases, 1995 edition. NFPA 90B, Standard for the Installation of Warm Air Heating and Air Conditioning Systems, 1996 edition.
	11.1.2.30 SAE Publications SAE J533b, Flares for Tubing, 1992.	SAE J533b, Flares for Tubing, 1992.	703 Minimum Standards SAE J533b, Flares for Tubing, 1992.
	11.1.2.33 UL Publications UL 94, Standard for Safety Tests for Flammability of Plastic Materials for Parts in Devices and Appliances, 1996.	UL 94, Standard for Safety Tests for Flammability of Plastic Materials for Parts in Devices and Appliances, **1996**.	715 Tests for Flammability of Plastic Materials for Parts in Devices and Appliances, UL 94-Fourth Edition-1991.
	UL 103, Standard for Safety Chimneys, Factory-Built, Residential Type and Building Heating Appliance, 1995 with revision 2/96. UL 109, Standard for Safety Tube Fittings for Flammable and Combustible Fluids, Refrigeration Service, and Marine Use, 1997.	UL 103, Standard for Safety Chimneys, Factory-Built, Residential Type and Building Heating Appliance, **1995 with revision 2/96**. UL 109, Standard for Safety Tube Fittings for Flammable and Combustible Fluids, Refrigeration Service, and Marine Use, **1997**.	703 Minimum Standards Chimneys, Factory-Built Residential Type and Building Heating Appliance--UL 103-Seventh Edition--1989 With Revision February 23, 1989. Tube Fittings for Flammable and Combustible Fluids, Refrigeration Service, and Marine Use--UL 109-Fifth Edition-1993.

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
97d ROP con't	UL 127, Standard for Safety Factory-Built Fireplaces, 1996 with revision 6/98.	UL 127, Standard for Safety Factory-Built Fireplaces, **1996 with revision 6/98**.	Factory-Built Fireplaces--UL 127-Sixth Edition With Revisions January 4, 1989, June 10, 1991, June 29, 1992.
	UL 174, Standard for Safety Household Electric Storage Tank Water Heaters, 1996, with revision 11/97.	UL 174, Standard for Safety Household Electric Storage Tank Water Heaters, **1996, with revision 11/97.**	Household Electric Storage Tank Water Heaters--UL 174-Seventh Edition-1989 With Revisions May 8, 1990 and January 22, 1991.
	UL 181, Standard for Safety Factory-Made Air Ducts and Air Connectors, 1998.	UL 181, Standard for Safety Factory-Made Air Ducts and Air Connectors, **1998**.	Factory-Made Air Ducts and Connectors--UL 181-Seventh Edition-1990, With Revision November 20, 1990.
	UL 181A, Standard for Safety Closure Systems for use with Rigid Air Ducts abd Air Connectors, 1994, with revision 12/98	**UL 181A, Standard for Safety Closure Systems for use with Rigid Air Ducts abd Air Connectors, 1994, with revision 12/98**	
	UL 181A, Standard for Safety Closure Systems for use with Flexible Air Ducts and Air Connectors, 1995, with revision 12/98	**UL 181A, Standard for Safety Closure Systems for use with Flexible Air Ducts and Air Connectors, 1995, with revision 12/98**	
	UL 307A, Standard for Safety Liquid Fuel-Burning Heating Appliances for Manufactured Homes and Recreational Vehicles, 1995, with revision 9/98.	UL 307A, Standard for Safety Liquid Fuel-Burning Heating Appliances for Manufactured Homes and Recreational Vehicles, **1995, with revision 9/98.**	Liquid Fuel-Burning Heating Appliances for Manufactured Homes and Recreational Vehicle--UL 307A-Sixth Edition-1990, With Revisions through August 21, 1990.
	UL 307B, Standard for Safety Gas Burning Heating Appliances for Mobile Homes and Recreational Vehicles, 1995 with revision 9/98.	UL 307B, Standard for Safety Gas Burning Heating Appliances for Mobile Homes and Recreational Vehicles, **1995 with revision 9/98**.	Gas Burning Heating Appliances for Mobile Homes and Recreational Vehicles--UL 307B-First Edition-1982 With Revision May 18, 1987.
	UL 311, Standard for Safety Roof Jacks for Manufactured Homes and Recreational Vehicles, 1994 with revision 9/98.	UL 311, Standard for Safety Roof Jacks for Manufactured Homes and Recreational Vehicles, **1994 with revision 9/98**.	Roof Jacks for Manufactured Homes and Recreational Vehicles--UL 311- Seventh Edition-1990
	UL 441, Standard for Safety Gas Vents, 1996 with revision 10/97.	UL 441, Standard for Safety Gas Vents, **1996 with revision 10/97**.	Gas Vents--UL 441-Seventh Edition-1991.
	~~UL 465, Standard for Safety Central Cooling Air Conditioners, 1987~~. (see UL 1995)		Central Cooling Air Conditioners--UL 465-Seventh Edition-1987 With Revisions through December 24, 1987.
	UL 569, Standard for Safety Pigtails and Flexible Hose Connectors for LP-Gas, 1996 with revision 9/98.	UL 569, Standard for Safety Pigtails and Flexible Hose Connectors for LP-Gas, **1996 with revision 9/98.**	Pigtails and Flexible Hose Connectors for LP-Gas--UL 569-Sixth Edition-1990
	UL 737, Standard for Safety Fireplace Stoves, 1996 with revision 6/98.	UL 737, Standard for Safety Fireplace Stoves, **1996 with revision 6/98.**	Fireplace Stoves--UL 737--Sixth Edition--1988 With Revisions September 19, 1988, July 10, 1990

Ref	NFPA 501 reference	3280 reference as shown with changes	Current wording of 3280
97d ROP con't	~~UL 1025, Standard for Safety Electric Air Heaters, 1991~~. (see UL 2021) UL 1042, Standard for Safety Electric Baseboard Heating Equipment, 1994 with revision 9/98. UL 1482, Standard for Safety Room Heaters, Solid-Fuel Type, 1996 with revision 9/98. UL 1995, Standard for Safety , Heating and Cooling Equipment , 1995 (this supersedes UL 465, Standard for Safety Central Cooling Air Conditioners, 1987). UL 2021, Standard for Safety Fixed and Location-Dedicated Electric Room Heaters, 19977 with revision 7/98 (this supersedes UL 1025, Standard for Safety Electric Air Heaters, 1991.	UL 1042, Standard for Safety Electric Baseboard Heating Equipment, **1994 with revision 9/98**. UL 1482, Standard for Safety Room Heaters, Solid-Fuel Type, **1996 with revision 9/98**. UL 1995, Standard for Safety , Heating and Cooling Equipment , **1995** (this supersedes UL 465, Standard for Safety Central Cooling Air **UL 2021, Standard for Safety Fixed and Location-Dedicated Electric Room Heaters, 19977 with revision 7/98 (this supersedes UL 1025, Standard for Safety Electric Air Heaters, 1991**	and June 10, 1991. Electrical Air Heaters-UL 1025-Second Edition-1987 With Revisions July 13, 1989, February 6, 1990 and December 3, 1991. Electric Baseboard Heating Equipment--UL 1042-Third Edition-1987 With Revision July 15, 1993. Room Heaters Solid-Fuel Type--UL 1482--Third Edition--1988 With Revision September 13, 1988. Electric Central Air Heating Equipment--UL 1096-Fourth Edition-1986 With Revisions July 16, 1986 and January 30, 1988
97e ROP ROC	**11.1.1 NFPA Publications** NFPA 70, National Electrical Code, 1996 edition. **11.1.2.8 ANSI Publications** ANSI C73.17-1972 to National Electrical Manufacturers Association Wiring Device Dimensional Requirements, ANSI/NEMA WD-6 1997.	NFPA 70, National Electrical Code, **1996** edition. ANSI C73.17-1972 to National Electrical Manufacturers Association Wiring Device Dimensional Requirements, ANSI/NEMA WD-6 **1997**.	Subpart I NFPA 70, National Electrical Code, 1993 edition. American National Standard Dimensions of Caps, Plugs and Receptacles, Grounding Type (ANSI C73.17--1972).