

NOTES: 1. Table is based on maximum 90 in. sidewall height.

2. Table is based on maximum 4 in. inset for ground anchor head from edge of floor or wall.

3. Table is based on main rail (I-beam) spacing per given column.

4. Table is based on maximum 4 in. eave width for single-section homes and maximum 12 in. for multi-section homes.

5. Table is based on maximum 20-degree roof pitch (4.3/12).

6. All manufactured homes designed to be located in Wind Zone III must have a vertical tie installed at each diagonal tie location.

7. Table is based upon the minimum height between the ground and the bottom of the floor joist being 18 inches. Interpolation may be required for other heights from ground to strap attachment.

8. Additional tie downs may be required per the home manufacturer instructions.

9. Ground anchors must be certified by a professional engineer, or registered architect, or listed by a nationally recognized testing laboratory.

10. Ground anchors must be installed to their full depth, and stabilizer plates, if required by the ground anchor listing or certification, must also be installed in accordance with the listing or certification and per the ground anchor and home manufacturer instructions.

11. Strapping and anchoring equipment must be certified by a registered professional engineer or registered architect or must be listed by a nationally recognized testing agency to resist these specified forces, in accordance with testing procedures in ASTM D 3953-97, Standard Specification for Strapping, Flat Steel and Seals (incorporated by reference, see § 3285.4).

12. A reduced ground anchor or strap working load capacity will require reduced tie-down strap and anchor spacing.

13. Ground anchors must not be spaced closer than the minimum spacing permitted by the listing or certification.

14. Table is based on a 3,150 lbs. working load capacity, and straps must be placed within 2 ft. of the ends of the home.

15. Table is based on a minimum angle of 30 degrees and a maximum angle of 60 degrees between the diagonal strap and the ground.

16. Table does not consider flood or seismic loads and is not intended for use in flood or seismic hazard areas. In those areas, the anchorage system is to be designed by a professional engineer or architect.

§ 3285.403 Sidewall, over-the-roof, mate-line, and shear wall straps.

If sidewall, over-the-roof, mate-line, or shear wall straps are installed on

the home, they must be connected to an anchoring assembly.

§ 3285.404 Severe climatic conditions.

In frost-susceptible soil locations, ground anchor augers must be installed below the frost line, unless the foundation system is frost-protected to prevent the effects of frost heave, in accordance with acceptable engineering practice and § 3280.306 of this chapter and § 3285.312.

§ 3285.405 Severe wind zones.

When any part of a home is installed within 1,500 feet of a coastline in Wind Zones II or III, the manufactured home must be designed for the increased requirements, as specified on the home's data plate (refer to § 3280.5(f) of this chapter) in accordance with acceptable engineering practice. Where site or other conditions prohibit the use of the manufacturer's instructions, a registered professional engineer or registered architect, in accordance with acceptable engineering practice, must design anchorage for the special wind conditions.

§ 3285.406 Flood hazard areas.

Refer to § 3285.302 for anchoring requirements in flood hazard areas.

Subpart F—Optional Features

§ 3285.501 Home installation manual supplements.

Supplemental instructions for optional equipment or features must be approved by the DAPIA as not taking the home out of conformance with the requirements of this part, or part 3280 of this chapter, and included with the manufacturer installation instructions.

§ 3285.502 Expanding rooms.

The support and anchoring systems for expanding rooms must be installed in accordance with designs provided by the home manufacturer or prepared by a registered professional engineer or registered architect, in accordance with acceptable engineering practice.

§ 3285.503 Optional appliances.

(a) *Comfort cooling systems.* When not provided and installed by the home

manufacturer, any comfort cooling systems that are installed must be installed according to the appliance manufacturer's installation instructions.

(1) *Air conditioners.* Air conditioning equipment must be listed or certified by a nationally recognized testing agency for the application for which the unit is intended and installed in accordance with the terms of its listing or certification (see § 3280.714 of this chapter).

(i) *Energy efficiency.* (A) Site-installed central air conditioning equipment must be sized to meet the home's heat gain requirement, in accordance with Chapter 28 of the 1997 ASHRAE Handbook of Fundamentals (incorporated by reference, see § 3285.4) or ACCA Manual J, Residential Cooling Load, 8th Edition (incorporated by reference, see § 3285.4). Information necessary to calculate the home's heat gain can be found on the home's comfort cooling certificate.

(B) The BTU/hr. rated capacity of the site-installed air conditioning equipment must not exceed the air distribution system's rated BTU/hr. capacity as shown on the home's compliance certificate.

(ii) *Circuit rating.* If a manufactured home is factory-provided with an exterior outlet to energize heating and/or air conditioning equipment, the branch circuit rating on the tag adjacent to this outlet must be equal to or greater than the minimum circuit amperage identified on the equipment rating plate.

(iii) *A-coil units.* (A) A-coil air conditioning units must be compatible and listed for use with the furnace in the home and installed in accordance with the appliance manufacturer's instructions.

(B) The air conditioner manufacturer instructions must be followed.

(C) All condensation must be directed beyond the perimeter of the home by means specified by the equipment manufacturer.

(2) *Heat pumps.* Heat pumps must be listed or certified by a nationally recognized testing agency for the application for which the unit is intended and installed in accordance with the terms of its listing or certification. (See § 3280.714 of this chapter).

(3) *Evaporative coolers.* (i) A roof-mounted cooler must be listed or certified by a nationally recognized testing agency for the application for which the unit is intended and installed in accordance with the terms of its listing (see § 3280.714 of this chapter).

(A) Any discharge grill must not be closer than three feet from a smoke alarm.

(B) Before installing a roof-mounted evaporative cooler on-site, the installer must ensure that the roof will support the weight of the cooler.

(C) A rigid base must be provided to distribute the cooler weight over multiple roof trusses to adequately support the weight of the evaporative cooler.

(ii) An evaporative cooler that is not roof-mounted is to be installed in accordance with the requirements of its listing or the equipment manufacturer's instructions, whichever is the more restrictive.

(b) *Fireplaces and wood-stoves.* When not provided by the home manufacturer, fireplaces and wood-stoves including chimneys and air inlets for fireplaces and wood stoves must be listed for use with manufactured homes and must be installed in accordance with their listings.

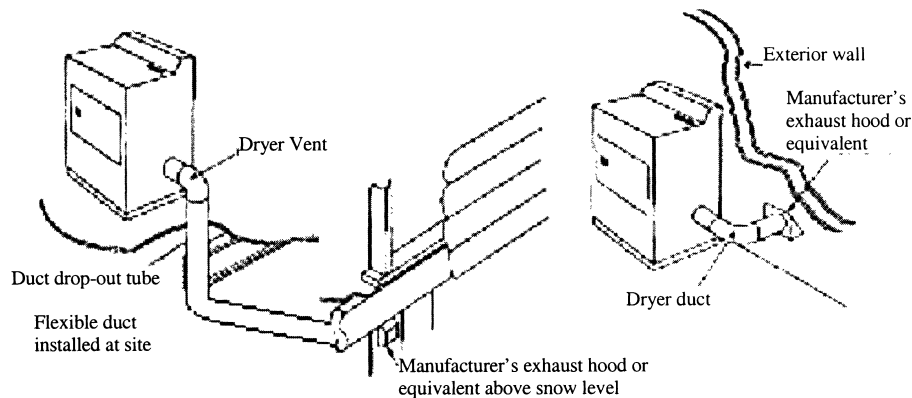
(c) *Appliance venting.* (1) All fuel burning heat producing appliances of the vented type except ranges and ovens must be vented to the exterior of the home.

(2) Upon completion, the venting system must comply with all requirements of §§ 3280.707(b) and 3280.710 of the Manufactured Home Construction and Safety Standards in this chapter.

(3) When the vent exhausts through the floor, the vent must not terminate under the home and must extend to the home's exterior and through any skirting that may be installed.

(d) *Clothes dryer exhaust duct system.* A clothes dryer exhaust duct system must conform with and be completed in accordance with the appliance manufacturer instructions and § 3280.708 of this chapter. The vents must exhaust to the exterior of the home, beyond any perimeter skirting installed around it, as shown in Figure to § 3285.503.

Figure A to § 3285.503 Dryer Exhaust System.



NOTES:

1. Installation of the exhaust system must be in accordance with the dryer manufacturer instructions.
2. Dryer exhaust system must not contain reverse slope or terminate under the home.

§ 3285.504 Skirting.

(a) Skirting, if used, must be of weather-resistant materials or provided with protection against weather deterioration at least equivalent to that provided by a coating of zinc on steel of not less than 0.30 oz./ft.² of surface coated.

(b) Skirting must not be attached in a manner that can cause water to be trapped between the siding and trim or forced up into the wall cavities trim to which it is attached.

(c) All wood skirting within 6 inches of the ground must be pressure-treated in accordance with AWP Standard U1 (incorporated by reference, see §3285.4) for Use Category 4A, Ground Anchor Contact Applications, or be naturally resistant to decay and termite infestations.

(d) Skirting must not be attached in a manner that impedes the contraction and expansion characteristics of the home's exterior covering.

§ 3285.505 Crawlspace ventilation.

(a) A crawlspace with skirting must be provided with ventilation openings. The minimum net area of ventilation

openings must not be less than one square foot (ft.²) for every 150 square feet (ft.²) of the home's floor area. The total area of ventilation openings may be reduced to one square foot (ft.²) for every 1,500 square feet (ft.²) of the home's floor area, where a uniform 6-mil polyethylene sheet material or other acceptable vapor retarder is installed, according to §3285.204, on the ground surface beneath the entire floor area of the home.

(b) Ventilation openings must be placed as high as practicable above the ground.

(c) Ventilation openings must be located on at least two opposite sides to provide cross-ventilation.

(d) Ventilation openings must be covered for their full height and width with a perforated corrosion and weather-resistant covering that is designed to prevent the entry of rodents. In areas subject to freezing, the coverings for the ventilation openings must also be of the adjustable type, permitting them to be in the open or closed position, depending on the climatic conditions.

(e) Access opening(s) not less than 18 inches in width and 24 inches in height and not less than three square feet (ft.²) in area must be provided and must be located so that any utility connections located under the home are accessible.