

ounces per square foot of surface coated, and in accordance with the following:

(1) Slit or cut edges of zinc-coated steel strapping do not need to be zinc coated.

(2) Type 1, Finish B, Grade 1 steel strapping, 1-1/4 inches wide and 0.035 inches in thickness, certified by a registered professional engineer or architect as conforming with ASTM Standard Specification D3953-91, Standard Specification for Strapping, Flat Steel, and Seals.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 52 FR 4583, Feb. 12, 1987; 59 FR 2473, Jan. 14, 1994; 70 FR 72045, Nov. 30, 2005]

EFFECTIVE DATE NOTE: At 72 FR 59362, Oct. 19, 2007, §3280.306 was amended by revising paragraphs (b)(2)(iii) and (iv), effective Oct. 20, 2008. For the convenience of the user, the revised text is set forth as follows:

§ 3280.306 Windstorm protection.

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(b) * * *

(2) * * *

(iii) That ground anchors are to be embedded below the frost line, unless the foundation system is frost-protected in accordance with §§ 3285.312(b) and 3285.404 of the Model Manufactured Home Installation Standards in this chapter.

(iv) That ground anchors must be installed to their full depth, and stabilizer plates must be installed in accordance with the ground anchor listing or certification to provide required resistance to overturning and sliding.

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§ 3280.307 Resistance to elements and use.

(a) Exterior coverings shall be of moisture and weather resistive materials attached with corrosion resistant fasteners to resist wind, snow and rain. Metal coverings and exposed metal structural members shall be of corrosion resistant materials or shall be protected to resist corrosion. All joints between portions of the exterior covering shall be designed, and assembled to protect against the infiltration of air and water, except for any designed ventilation of wall or roof cavity.

(b) Joints between dissimilar materials and joints between exterior cov-

erings and frames of openings shall be protected with a compatible sealant suitable to resist infiltration of air or water.

(c) Where adjoining materials or assemblies of materials are of such nature that separation can occur due to expansion, contraction, wind loads or other loads induced by erection or transportation, sealants shall be of a type that maintains protection against infiltration or penetration by air, moisture or vermin.

(d) Exterior surfaces shall be sealed to resist the entrance of rodents.

§ 3280.308 Formaldehyde emission controls for certain wood products.

(a) Formaldehyde emission levels. All plywood and particleboard materials bonded with a resin system or coated with a surface finish containing formaldehyde shall not exceed the following formaldehyde emission levels when installed in manufactured homes:

(1) Plywood materials shall not emit formaldehyde in excess of 0.2 parts per million (ppm) as measured by the air chamber test method specified in § 3280.406.

(2) Particleboard materials shall not emit formaldehyde in excess of 0.3 ppm as measured by the air chamber test specified in § 3280.406.

(b) Product certification and continuing qualification. All plywood and particleboard materials to be installed in manufactured homes which are bonded with a resin system or coated with a surface finish containing formaldehyde, other than an exclusively phenol-formaldehyde resin system or finish, shall be certified by a nationally recognized testing laboratory as complying with paragraph (a) of this section.

(1) Separate certification shall be done for each plant where the particleboard is produced or where the plywood or particleboard is surface-finished.

(2) To certify plywood or particleboard, the testing laboratory shall witness or conduct the air chamber test specified in § 3280.406 on randomly selected panels initially and at least quarterly thereafter.

(3) The testing laboratory must approve a written quality control plan for

each plant where the particleboard is produced or finished or where the plywood is finished. The quality control plan must be designed to assure that all panels comply with paragraph (a) of this section. The plan must establish ongoing procedures to identify increases in the formaldehyde emission characteristics of the finished product resulting from the following changes in production.

(i) In the case of plywood:

(A) The facility where the unfinished panels are produced is changed;

(B) The thickness of the panels is changed so that the panels are thinner; or

(C) The grooving pattern on the panels is changed so that the grooves are deeper or closer together.

(ii) In the case of particleboard:

(A) The resin formulation is changed so that the formaldehyde-to-urea ratio is increased;

(B) The amount of formaldehyde resin used is increased; or

(C) The press time is decreased.

(iii) In the case of plywood or particleboard:

(A) The finishing or top coat is changed and the new finishing or top coat has a greater formaldehyde content; or

(B) The amount of finishing or top coat used on the panels is increased, provided that such finishing or top coat contains formaldehyde.

(4) The testing laboratory shall periodically visit the plant to monitor quality control procedures to assure that all certified panels meet the standard.

(5) To maintain its certification, plywood or particleboard must be tested by the air chamber test specified in §3280.406 whenever one of the following events occurs:

(i) In the case of particleboard, the resin formulation is changed so that the formaldehyde-to-urea ratio is increased; or

(ii) In the case of particleboard or plywood, the finishing or top coat is changed and the new finishing or top coat contains formaldehyde; or

(iii) In the case of particleboard or plywood, the testing laboratory determines that an air chamber test is nec-

essary to assure that panels comply with paragraph (a) of this section.

(6) In the event that an air chamber test measures levels of formaldehyde from plywood or particleboard in excess of those permitted under paragraph (a) of this section, then the tested product's certification immediately lapses as of the date of production of the tested panels. No panel produced on the same date as the tested panels or on any day thereafter may be used or certified for use in manufactured homes.

(i) Provided, however, that a new product certification may be obtained by testing randomly selected panels which were produced on any day following the date of production of the tested panels. If such panels pass the air chamber test specified in §3280.406, then the plywood or particleboard produced on that day and subsequent days may be used and certified for use in manufactured homes.

(ii) Provided further, that plywood or particleboard produced on the same day as the tested panels, and panels produced on subsequent days, if not certified pursuant to paragraph (b)(4)(i) of this section, may be used in manufactured homes only under the following circumstances:

(A) Each panel is treated with a scavenger, sealant, or other means of reducing formaldehyde emissions which does not adversely affect the structural quality of the product; and

(B) Panels randomly selected from the treated panels are tested by and pass the air chamber test specified in §3280.406.

(c) *Panel identification.* Each plywood and particleboard panel to be installed in manufactured homes which is bonded or coated with a resin system containing formaldehyde, other than an exclusively phenol-formaldehyde resin system, shall be stamped or labeled so as to identify the product manufacturer, date of production and/or lot number, and the testing laboratory certifying compliance with this section.

(d) *Treatment after certification.* If certified plywood or particleboard subsequently is treated with paint, varnish, or any other substance containing formaldehyde, then the certification is

no longer valid. In such a case, each stamp or label placed on the panels pursuant to paragraph (c) of this section must be obliterated. In addition, the treated panels may be recertified and reidentified in accordance with paragraphs (b) and (c) of this section.

[49 FR 32011, Aug. 9, 1984]

§ 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.

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 ¼ inch in size. The title shall be typed using letters at least ¾ 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).

[49 FR 32012, Aug. 9, 1984, as amended at 54 FR 46049, Nov. 1, 1989; 58 FR 55007, Oct. 25, 1993]

Subpart E—Testing

§ 3280.401 Structural load tests.

Every structural assembly tested shall be capable of meeting the Proof Load Test or the Ultimate Load Test as follows:

(a) *Proof load tests.* Every structural assembly tested must 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 must be conducted with loads applied and deflections recorded in ¼ design live load increments at 10-minute intervals until 1.25 times design live load plus dead load has been reached. Additional load shall then be applied continuously until 1.75 times design live load plus dead load has been reached. Assembly failure shall be considered as design live load deflection (or residual deflection measured 12 hours after live load removal) that is greater than the limits set in § 3280.305(d), rupture, fracture, or excessive yielding. Design live load deflection criteria do not apply when the structural assembly being evaluated does not include structural framing members. An assembly to be tested shall be of the minimum quality of materials and workmanship of the production. Each test assembly, component, or subassembly shall be identified as to type and quality or grade of material. All assemblies, components, or subassemblies qualifying under this test shall be subject to a continuing qualification testing program acceptable to HUD.

(b) *Ultimate load tests.* Ultimate load tests must be performed on a minimum of three assemblies or components to generally evaluate the structural design. Every structural assembly or component tested must 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