



**Nassau County Building/Code
Enforcement Department**
96161 Nassau Place
Yulee, Florida 32097

Bulletin G-01-16

MEMORANDUM

Date: April 18, 2016
TO: Manufactured Home Permit Applicants and Installers
FROM: Michael Griffin, CBO, CFM, Building Official
SUBJECT: Florida Department of Highway Safety and Motor Vehicles Information

Attached is information provided by Andrew Ross, Safety Program Consultant, with the Florida Department of Highway Safety and Motor Vehicle Department (FDHSMVD). Recently there have been failed inspection throughout the State of Florida involving misinformation or misunderstandings related to the proper installation procedures of manufactured homes. The FDHSMVD, in an effort to assist local building departments and installers have provided the attached information.

Ten most repetitive installation violations seen in February 2016

As indicated, at the top of the list is *soil not compacted around anchors*. Please make sure when you call for inspections you have tested the compaction, too often this is missed. Loose side wall and strap anchors is another problem. Also, make sure piers are installed properly and are adequately supporting the structure frame and are not loose. Additionally, not on the list, supply and return ducts installed directly to the outside air must be a minimum R-8.

Oliver Technologies Adjustable Outrigger

Note the instructions for this anchor will only allow for installation at door and window openings. *The anchors are not to be installed as a substitute for piers*. The outriggers have been found to be used at improper locations causing the I-beam to rotate laterally placing stress on the interior floor joists.

RULE 15C- 1 & 2 Florida Administrative Code

Highlights of Rule 15C 1&2 Florida Administrative Code.

Please note the attached information and if you have questions, please let me know.

FERNANDINA
(904) 530-6250

TOLL FREE
1-800-948-3364

FAX
(904) 321-5763

March 22, 2016

Ten most repetitive Installation violations seen in February 2016..

1. Soil not compacted around anchors.

15C-1.0102 (4) Anchors may be installed in predrilled holes provided the anchor penetrates a minimum of two feet (2') into undisturbed soil beyond the predrilled hole. When the anchor manufacturer's installation instructions permit, the hole is then backfilled with soil and compacted in layers not exceeding six inches (6") .

2. Side wall and frame straps not tight.

15C-1.102(2) Installation of such anchors, piers and tie-down components shall be in accordance with the manufacturer's instructions used during the testing procedure. Testing installation instructions list the strap is to be tightened until taut.

3. Incorrect length auger anchors.

15C-1.0104 Requires anchors to be installed to the anchor manufacturer's installation instructions, A torque probe test of 276 inch pounds allows the use of four (4') foot anchors and 275 inch pounds or less require a five (5') foot anchor.

4. Incorrect size of column/shearwall supports at the mate line.

15C-1.0102 (1) requires new homes to be installed to the manufacturers installation instructions. Used homes to 15C-1.0103 (1) (c) openings greater than four (4') feet shall be provided with column piers.

5. Not affixing installer decal to home prior to installation.

15C-2.0073 (7) (d) requires the installer decal affixed to the home prior to the installation of the home.

6. Stabilizer plates not installed to the product manufacturer's installation instructions.

15C-1.012 (2) requires stabilizer plates to be installed to the manufacturer's instructions.

7. Vapor barrier torn, cut or not provided.

HUD 3285.204 requires a vapor retarder to be installed correctly under new homes. Vapor retarder minimum 6 mil polyethylene sheet.

8. Gaps between multi-section floors not filled or shimmed.

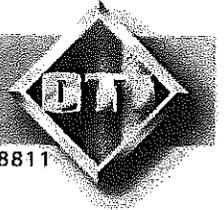
15 C-2.0073 (1) requires new home multi section's gap to be filled with wood filler.

9. Frame clamps not tight at I-beam connections. (Both system arms and frame straps.)

15C-1.0102 (2) requires all anchors, piers and tie down components used in the installation to be installed to the product manufacturer's installation instructions.

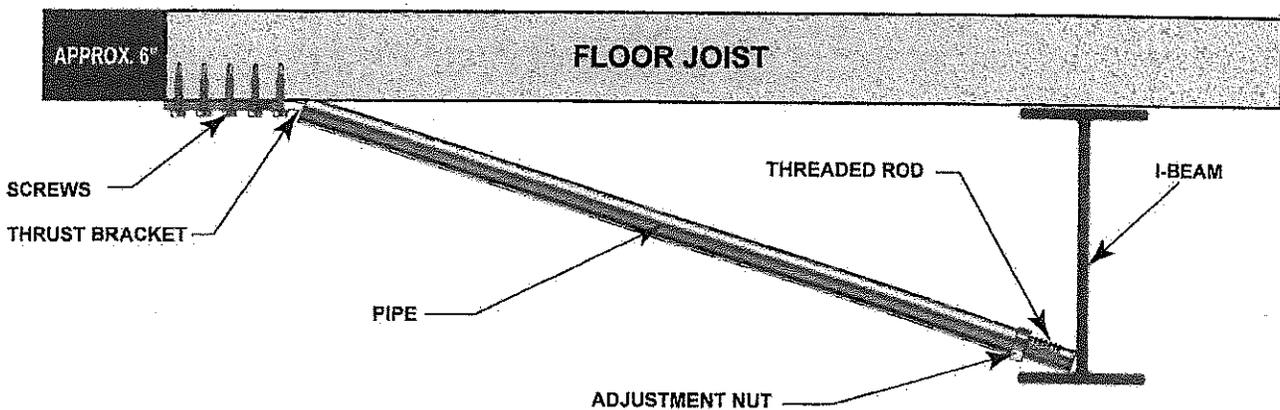
10. Exposed utilities below floor at mate line.

15C-1.0102 (1) requires new and used homes to be installed to the manufacturer's installation instructions when available and to 15C when unavailable.



OLIVER TECHNOLOGIES, INC. Adjustable Outrigger Installation Instructions MODEL # 1055-11

1. Locate the floor joist that requires support.
2. Mark the I-Beam directly under the floor joist to align the outrigger.
3. Adjust the nut on the threaded rod so it clears the frame flange for easy adjustment.
4. Set the threaded rod in the pipe and against the frame.
5. Set the notched end of the thrust bracket into the end of the pipe and secure it with 5 # 12 x 2" screws to the floor joist. The thrust bracket should be approximately 6" from the outside rim joist.
6. Bottom board and insulation should be between the bracket and the joist.
7. For minor adjustments align the door and window openings by tightening or loosening the adjustment nut. For all other adjustments use a hydraulic jack to raise the floor joist before installation of the outrigger.



NOTES:

*REMOVE OUTRIGGER WHEN HOME IS BEING TRANSPORTED

*SPECIFY WIDTH OF HOME WHEN ORDERING OUTRIGGER. PIPE MAY BE CUT TO FIT

*THE ADJUSTABLE OUTRIGGERS SHALL ONLY BE USED ON HOMES FOR OPENINGS UP TO:

8' ON 20 LB ROOF LOAD

4' ON 30 LB ROOF LOAD

3' ON 40 LB ROOF LOAD

*WHEN ADJUSTABLE OUTRIGGERS ARE USED FOR DOOR AND WINDOW SUPPORTS, THEY MUST BE INSTALLED ON THE CLOSEST FLOOR JOIST UP TO 16" FROM THE OUTSIDE EDGE OF THE OPENING

*DO NOT INSTALL ADJUSTABLE OUTRIGGER AT LOCATIONS WHERE THE HOME MANUFACTURER INDICATES A LOAD IN EXCESS OF 1,700 LBS.

*THE ADJUSTABLE OUTRIGGER MUST BE USED ON A MINIMUM 10" I-BEAM AND BE PLACED WITHIN 4" OF A MAIN FRAME SUPPORT PIER OR FRAME CROSSMEMBER.

Listing # 1055-11

Patent # 6.334.279

RULE 15C - 1 & 2

FLORIDA ADMINISTRATIVE CODE

PERMITS

Rule 15C-2.0073(8) requires correct permits to be pulled prior to the home being moved to site.

Rule 15C-2.0073(8) requires a drawing of pier locations, pad sizes and soil bearing capacity and requires the installation to follow the information provided in the permit.

DECALS

Rule 15C-2.0073(7)(d) requires the installation of installer's decal prior to the home being installed.

Rule 15C-2.0073(7)(e) requires the decal to be placed next to HUD label or rear end of home.

SITE PREPARATION

Rule 15C-1.0102(3) requires the under-home grade to be cleaned of all vegetation & organic materials; i.e., stumps, roots, etc. except grass not exceeding 3 inches in height.

Rule 15C-1.0102(3) requires the site to be prepared for proper drainage so that no water will accumulate under the home.

INSTALLATION

Rule 15C-1.0102(1) requires new home installation to be to the manufacturer's installation manual unless otherwise specified in the Rules.

Rule 15C-1.0102(1) requires used home installation to be to Rule 15C-1 & 2 unless the manufacturer's installation manual is available.

LISTED

Rule 15C-1.0102(2) requires anchors, piers and tie down components to be listed & installed to the manufacturer's installation instructions.

Footers and Piers

FOOTERS

Rule 15C-1.0102(3) requires footers to be installed on stable soil to a depth equal to their height, except on clear compacted fill dirt.

Rule 15C-1.0102(2) requires ABS pads be installed to the manufacturer's installation instructions.

Rule 15C-1.0103(1)(a) requires pier footers for new homes to carry the weight as shown in the manufacturer's installation manual.

CONCRETE BLOCKS

Rule 15C-1.0102(6) requires concrete blocks to meet the Standard Specification for Load Bearing Concrete Masonry Units, ASTM C-90

PIERS SINGLE

Rule 15C-1.0103(1)(a) requires piers be centered under the I-beam

Rule 15C-1.0103(1)(b) requires piers be perpendicular to the I-beam and open cells vertical.

Rule 15C-1.0103(1)(a) requires I-beam piers within 2' on either end of the home & not exceed 8 ft. spacings.

Rule 15C-1.0102(6) requires a single blocked pier to carry a weight not to exceed 8000 lbs.

Rule 15C-1.0103(1)(d) requires a single blocked pier not to exceed 36" in height - corner piers not to exceed 24" in height.

PIERS DOUBLE
Rule 15C-1.0103(1)(d) requires piers over 36" and corner piers over 24" to be double blocked with blocks interlocked.
Rule 15C-1.0103(1)(e) requires double stacked piers over 52" to comply with local authority (engineering).
CENTERLINE PIERS
Rule 15C-1.0103(1)(c) requires centerline piers on each end of the home and spaced at 8 ft. on center except in open spans and installed perpendicular.
Rule 15C-1.0103(1)(c) requires openings in the centerline, 4 ft or greater to have piers on either side of the openings and within 6" of the openings column supports and installed correctly.
Rule 15C-1.0103(1)(c) requires centerline openings greater than 15' to get the equivalent of three (3), 4" x 16" x 16" footers. The equivalent is a 24 X 24 plastic pad.
Rule 15C-1.0102(1) requires new home installation to be to the manufacturer's installation manual as it relates to centerline or centerline shearwall blocking.
PERIMETER PIERS
Rule 15C-1.0103(1)(c) requires perimeter piers on either side of doors, fireplaces, bay windows and any opening greater than 48".
Rule 15C-1.0103(1)(c) requires perimeter openings greater than 15' to get the equivalent of three (3), 4" x 16" x 16" footers.
Rule 15C-1.0103(1)(c) requires 14' wide units or greater with an I-beam spread of less than 82" to have perimeter piers at 8' o.c.
Rule 15C-1.0103(1)(c) requires 12' wide units with an I-beam spread of less than 75 1/2" to have perimeter piers at 8' o.c.
Rule 15C-1.0102(1) requires new home installation to be to the manufacturer's installation manual as it relates to perimeter or perimeter shearwall blocking.
PIER SPACING
Rule 15C-1.0103(1)(a) requires piers to be installed in accordance with Table A (footing size chart) for used homes and manufacturer's installation instructions for new homes.
Rule 15C-1.0102(6) requires load bearing supports or devices to be installed to evenly distribute the load.
PIER HEIGHT
Rule 15C-1.0103(1)(d) defines pier height as the measurement from top of the footer to the top of the cement block stack.
HOME HEIGHT
Rule 15C-1.0103(1)(h) requires the min. height between the finished grade and the bottom of the I-beam to be 18". Except 25% of home may be below 18", but not below 12" (ground to I-beam).
CAPS
Rule 15C-1.0103(1)(b) requires cap blocks to be either 4 in. solid concrete or 2 x 8 pressure treated wood block and completely cover the top of the pier.
SHIMS
Rule 15C-1.0103(1)(b) requires shims to be centered and driven tight from both sides.
Rule 15C-1.0103(1)(b) requires shims between the I-beam and 4" concrete cap blocks.
Rule 15C-1.0103(1)(b) requires the shims to be between 1/4" to 1 1/2" thick by 3 1/2" wide

Anchors, Ties and Stabilizer Plates

ANCHORS

Rule 15C-1.0102(4) requires anchors to be installed to the anchor manufacturer's installation instructions (4 ft - torque reading of 276 or higher) or (5 ft - torque reading of 275 or lower).

Rule 15C-1.0102(4) requires anchors to be in 2' of undisturbed soil (min.) with remaining soil compacted in 6" layers.

Rule 15C-1.0102(1) requires new home installation to be to the manufacturer's installation manual as it relates to anchor lengths.

FRAME TIES

Rule 15C-1.0104(2) requires frame ties at 5' 4" on center & within 2' of each end of home correctly installed.

Rule 15C-1.0102(2) requires frame clamps to be properly installed to the top of the I-beam.

Rule 15C-1.0102(2) requires frame ties to be 45 degrees (40 -50 degrees) or to the inside I-beam.

Rule 15C-1.0102(1) requires new home installation to be to the manufacturer's installation manual as it relates to centerline frame ties.

Rule 15C-1.0102(2) requires a frame tie at each lateral arm location and be correctly installed.

LONGITUDINAL SYSTEMS

Rule 15C-1.0102(2) requires all new and used homes to have longitudinal tie-downs or other approved longitudinal stabilizing devices(LSD) and correctly installed.

Rule 15C-1.0102(2) requires LSD systems to have two per section of home and correctly installed.

Rule 15C-1.0102(2) requires LSD systems to tightly fitted to the galvanized pan and the I-beam.

Rule 15C-1.0102(2) requires LSD systems to have the proper number of self tapping screws.

Rule 15C-1.0102(2) requires LSD system' galvanized base pan embedded/staked into the ground.

Rule 15C-1.0102(2) requires LSD systems longitudinal arms to have the correct angle.

LATERAL ARM SYSTEMS

Rule 15C-1.0102(2) requires lateral arm systems to have the proper number of arms per the home length.

Rule 15C-1.0102(2) requires lateral arm systems to be tightly fitted to the galvanized pan & I-beam.

Rule 15C-1.0102(2) requires lateral arm systems to have the proper number of self tapping screws.

Rule 15C-1.0102(2) requires lateral arm system's galvanized base pan embedded into the ground.

Rule 15C-1.0102(2) requires lateral arm's centerline anchors to be sized to torque probe test.

Rule 15C-1.0102(2) requires frame ties at each lateral arm location.

Rule 15C-1.0102(2) requires lateral arms be used only when sidewall ties are spaced at 5'4".

CENTERLINE TIES

Rule 15C-1.0104(4)(b) requires centerline ties where specified by the manufacturer or where designated on the home. Brackets cannot be bent up or left with no strap/anchor.

Rule 15C-1.0104(4)(b) requires centerline ties within 2' of each end of each section of the home on new and used units. Where necessary, an approved bracket shall be added by the installer.

SIDEWALL (ROOF) TIES
Rule 15C-1.0104(5) requires sidewall ties on all homes at locations specified by the manufacturer, regardless of their location. Brackets cannot be bent up out of the way - straps cannot be cut off.
Rule 15C-1.0104(4)(d) requires strapping to be looped through bracket slots with 2 crimps evenly spaced and with radius clips installed. Must be tight.
Rule 15C-1.0104(5)(g) requires vertical ties and/or roof ties to be anchored to the ground.
LACING
Rule 15C-1.0104(4)(d) does not allow straps to be laced through bracket slots.
RADIUS CLIP
Rule 15C-1.0104(4)(d) requires radius clips at all attachments to brackets
STRAPS
Rule 15C-1.0104(5)(g) requires damaged, cut off or removed straps, to be lengthened with a replacement strap. A 12" overlap with 2 crimping seals each having 2 crimps evenly spaced is required.
Rule 15C-1.0102(4) requires straps to anchor bolts to be properly wrapped.
Rule 15C-1.0107(4)(b) requires straps to brackets to have on seal with two crimps.
BOLTS
Rule 15C-1.0102(4) requires all anchor bolts to be properly seated in anchor head's square hole.
STABILIZER PLATES
Rule 15C-1.0102(5) requires stabilizer plates and to be a minimum of 180 sq. in.
Rule 15C-1.0102(5) requires stabilizer plates be installed flush with ground.
Rule 15C-1.0102(2) requires stabilizer plates to be installed to the Mfr's instructions.
MISCELLANEOUS
GASKET AND GAP FILLER
Rule 15C-2.0073(6) requires a gasket to be installed between multi section homes - a weather sealing requirement.
Rule 15C-1.0102(1) requires new home multi section home's gap to be filled with wood filler.
WEATHER SEALING
Rule 15C-2.0073(6) requires the complete weather sealing of the home which includes vinyl/metal siding.
Rule 15C-2.0073(6) requires the complete weather sealing of the home which includes fascia and soffit.
Rule 15C-2.0073(6) requires the complete weather sealing of the home which includes roofing.
BB SEALING
Rule 15C-2.0073(6) requires the bottomboard to be sealed and/or repaired; weather sealing requirement.
FASTENING MULTI-SECTIONS
Rule 15C-1.0102(1) requires new homes to be fastened together according to the manufacturer's installation instructions.
Rule 15C-1.0104(6) requires used homes to be fastened 24" o.c. at the floor or to installation instructions if available.
Rule 15C-1.0104(6) requires new homes to be fastened at the endwalls to the manufacturer's installation instructions - if it is not addressed in the manual every 24" o.c.
Rule 15C-1.0104(6) requires used homes to be fastened 24" o.c. at the endwalls or to manufacturer's installation instructions if available.
Rule 15C-1.0104(6) requires used homes to be fastened 24" o.c. at the roof and a 30 gauge metal strip 8" wide (the length of the home) with roofing nails fastened at 2" o.c. on both sides.

PLUMBING
Rule 15C-2.0072 (4)(b) requires the proper connection of all drainage under the home to an existing tap.
Rule 15C-2.0072 (4)(c) requires the proper connection of the water to the home from an existing tap. Crossover water lines must not be exposed.
Rule 15C-1.0102(1) requires water heater drip pan/ pressure relief to be installed to manufacturer's installation manual on new homes.
ELECTRICAL
Rule 15C-2.0072 (4)(a) requires the proper connection of electric connections between the sections of the home and includes the bonding wire. Electrical wires must not be exposed.
LEVEL
Rule 15C-2.0073(6) requires the home to maintain its level for up to one year. Installation warranty.
HVAC
HUD 3280.715 (a) (7) Requires duct exposed to outside air be R-8. (New Homes Only)
Rule 15C-1.0102(1) requires new homes HVAC ducts to be installed properly.
FIREPLACE
Rule 15C-1.0102(1) requires new home's fireplace to be installed to manufacturer's installation manual.
VAPOR BARRIER
Rule 15C-1.0102(1) requires a vapor barrier to be installed correctly under new homes.
DRYER DUCT
Rule 15C-1.0102(1) requires new home's dryer ducts to be installed correctly and terminate outside of the skirting.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 58 FR 55018, Oct. 25, 1993; 70 FR 72051, Nov. 30, 2005; 78 FR 73989, Dec. 9, 2013]

§3280.715 Circulating air systems.

(a) *Supply system.* (1) Supply air ducts, fittings, and any dampers contained therein must be made of galvanized steel, tin-plated steel, or aluminum, or must be listed as Class 0 or Class 1 air ducts and air connectors in accordance with UL 181-2003, Factory-Made Air Ducts and Air Connectors (incorporated by reference, see §3280.4). Class 1 air ducts and air connectors must be located at least 3 feet from the furnace bonnet or plenum. Air connectors must not be used for exterior manufactured home duct connection. A duct system integral with the structure must be of durable construction that can be demonstrated to be equally resistant to fire and deterioration as required by this section. Furnace supply plenums must be constructed of metal that extends a minimum of 3 feet from the heat exchanger measured along the centerline of airflow. Ducts constructed from sheet metal must be in accordance with the following table:

Minimum Metal Thickness for Ducts¹

Duct type	Diameter 14 in. or less	Width over 14 in.
Round	0.013	0.016
Enclosed rectangular	.013	.016
Exposed rectangular	.016	.019

¹When "nominal" thicknesses are specified, 0.003 in. shall be added to these "minimum" metal thicknesses.

(2) *Sizing of ducts for heating.* (i) Ducts shall be so designed that when a labeled forced-air furnace is installed and operated continuously at its normal heating air circulating rate in the manufactured home, with all registers in the full open position, the static pressure measured in the casing shall not exceed 90% of that shown on the label of the appliance. For upflow furnaces the static pressure shall be taken in the duct plenum. For external heating or combination heating/cooling appliances the static pressure shall be taken at the point used by the agency listing or certifying the appliance.

(ii) When an evaporator-coil specifically designed for the particular furnace is installed between the furnace and the duct plenum, the total static pressure shall be measured downstream of the coil in accordance with the appliance label and shall not exceed 90 percent of that shown on the label of the appliance.

(iii) When any other listed air-cooler coil is installed between the furnace and the duct plenum, the total static pressure shall be measured between the furnace and the coil and it shall not exceed 90 percent of that shown on the label of the furnace.

(iv) The minimum dimension of any branch duct shall be at least 1½ inches, and of any main duct, 2½ inches.

(3) *Sizing of ducts.* (i) The manufactured home manufacturer shall certify the capacity of the air cooling supply duct system for the maximum allowable output of ARI certified central air conditioning systems. The certification shall be at operating static pressure of 0.3 inches of water or greater. (See §3280.511).

(ii) The refrigerated air cooling supply duct system including registers must be capable of handling at least 300 cfm per 10,000 btuh with a static pressure no greater than 0.3 inches of water when measured at room temperature. In the case of application of external self contained comfort cooling appliances or the cooling mode of combination heating/cooling appliances, either the external ducts between the appliance and the manufactured home supply system shall be considered part of, and shall comply with the requirements for the refrigerated air cooling supply duct system, or the connecting duct between the external appliance and the mobile supply duct system shall be a part of the listed appliance. The minimum dimension of any branch duct shall be at least 1½ inches, and of any main duct, 2½ inches.

(4) *Airtightness of supply duct systems.* A supply duct system shall be considered substantially airtight when the static pressure in the duct system, with all registers sealed and with the furnace air circulator at high speed, is at least 80 percent of the static pressure measured in the furnace casing, with its outlets sealed and the furnace air circulator operating at high speed. For the purpose of this paragraph and §3280.715(b) pressures shall be measured with a water manometer or equivalent device calibrated to read in increments not greater than 1/10 inch water column.

(5) *Expandable or multiple manufactured home connections.* (i) An expandable or multiple manufactured home may have ducts of the heating system installed in the various units. The points of connection must be so designed and constructed that when the manufactured home is fully expanded or coupled, the resulting duct joint will conform to the requirements of this part.

(ii) The manufacturer must provide installation instructions for supporting, mechanically fastening, sealing, and insulating each crossover duct. The instructions must indicate that no portion of the crossover duct is to be in contact with the ground, and must describe the means to support the duct without compressing the insulation and restricting airflow.

(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.

(7) Unless installed in a basement, 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, must be insulated with material having a minimum thermal resistance of R-8 in all Thermal Zones. All such insulating materials must have a continuous vapor barrier retarder having a perm rating of not more than 1 perm. Where ducts are exposed underneath the manufactured home, they must comply with paragraph (a)(5)(ii) of this section, and shall be listed for exterior use.

(b) *Return air systems—(1) Return air openings.* Provisions shall be made to permit the return of circulating air from all rooms and living spaces, except toilet room(s), to the circulating air supply inlet of the furnace.

(2) *Duct material.* Return ducts and any diverting dampers contained therein shall be in accordance with the following:

(i) Portions of return ducts directly above the heating surfaces, or closer than 2 feet from the outer jacket or casing of the furnace shall be constructed of metal in accordance with §3280.715(a)(1) or shall be listed Class 0 or Class 1 air ducts.

(ii) Return ducts, except as required by paragraph (a) of this section, shall be constructed of one-inch (nominal) wood boards (flame spread classification of not more than 200), other suitable material no more flammable than one-inch board or in accordance with §3280.715(a)(1).

(iii) The interior of combustible ducts shall be lined with noncombustible material at points where there might be danger from incandescent particles dropped through the register or furnace such as directly under floor registers and the bottom return.

(iv) Factory made air ducts used for connecting external heating, cooling or combination heating/cooling appliances to the supply system and return air system of a manufactured home shall be listed by a nationally recognized testing agency. Ducts applied to external heating appliances or combination heating/cooling appliances supply system outlets shall be constructed of metal in accordance with §3280.715(a)(1) or shall be listed Class 0 or Class 1 air ducts for those portions of the duct closer than 2 feet from the outer casing of the appliance.

(v) Ducts applied to external appliances shall be resistant to deteriorating environmental effects, including but not limited to ultraviolet rays, cold weather, or moisture and shall be resistant to insects and rodents.

(3) *Sizing.* The cross-sectional areas of the return air duct shall not be less than 2 square inches for each 1,000 Btu per hour input rating of the appliance. Dampers shall not be placed in a combination fresh air intake and return air duct so arranged that the required cross-sectional area will not be reduced at all possible positions of the damper.

(4) *Permanent uncloseable openings.* Living areas not served by return air ducts or closed off from the return opening of the furnace by doors, sliding partitions, or other means shall be provided with permanent uncloseable openings in the doors or separating partitions to allow circulated air to return to the furnace. Such openings may be grilled or louvered. The net free area of each opening shall be not less than 1 square inch for every 5 square feet of total living area closed off from the furnace by the door or partition serviced by that opening. Undercutting doors connecting the closed-off space may be used as a means of providing return air area. However, in the event that doors are undercut, they shall be undercut a minimum of 2 inches and not more than 2¹/₂ inches, as measured from the top surface of the floor decking to the bottom of the