

Rule 5.06.9: Installation Instructions for ABS Pads

A. The purpose of this section is to emphasize that **the ground under the ABS pads must be leveled, evenly compacted, and cleared of all vegetation and debris before the placement of the pads and all pads are to be installed flat side down, ribbed side up.**

B. Note that if the pad deflects more than 5/8 of an inch when installed, pier spacing is incorrect for the existing soil conditions. The maximum deflection in a single pad is 5/8 of an inch measured from the highest point to the lowest point of the top.

C. Installation Instructions for ABS Pads B 26X 26 Inch Pad Configuration.

1. All pads are to be installed flat side down, ribbed side up.
2. The ground under the pads should be leveled as smooth as possible with all vegetation removed. Pads are not to be placed on natural grade unless otherwise permitted by the local building authority.
3. Pier and pad spacing will be determined by the Factory-Built home manufacturer's written set up instructions. In the absences of home manufacturer's written set up instructions and written set up instructions from the pad manufacturer, the pier and pad spacings shall be no greater than 6 ft. apart for Wind Zone I areas and no greater than 4 ft. for Wind Zone II areas.
4. The open cells between the ribbings on the upper side of the pads may be filled with soil or sand after installation to prevent any accumulation of stagnant water in the pads.
5. A pocket penetrometer may be used to determine the actual soil bearing value. If soil testing equipment is not available, an assumed soil bearing capacity value of 1000 lbs./square foot (psf) may be used.
6. All pad sizes shown are nominal dimensions and may vary to 1/8 of an inch.
7. The maximum deflection in a single pad is 5/8 of an inch measured from the highest point to the lowest point of the top face. (Please review Table V and Figures 6 and 7).

TABLE V – SIZE AND LOAD

PAD SIZE	PAD AREA	1000 LB.SOIL	2000 LB.SOIL	3000 LB.SOIL
16" X 16"	256 sq. in.	1,780 lbs.	3,560 lbs.	5,333 lbs.
18.5" X 18.5"	342 sq. in.	2,375 lbs.	4,750 lbs.	7,125 lbs.
20" X 20"	400 sq. in.	2,750 lbs.	5,500 lbs.	8,250 lbs.

- a. Any configuration above may be used to replace a home manufacturer's recommended concrete or wood base pad.
- b. The maximum load at any intermediate solid value may be determined as the average of the next lower and next higher soil values given in the above table.
- c. Pad sizes shown are nominal dimensions and may vary up to 1/8 inch.
- d. Pad loads are the same when using single stack or double stack blocks.

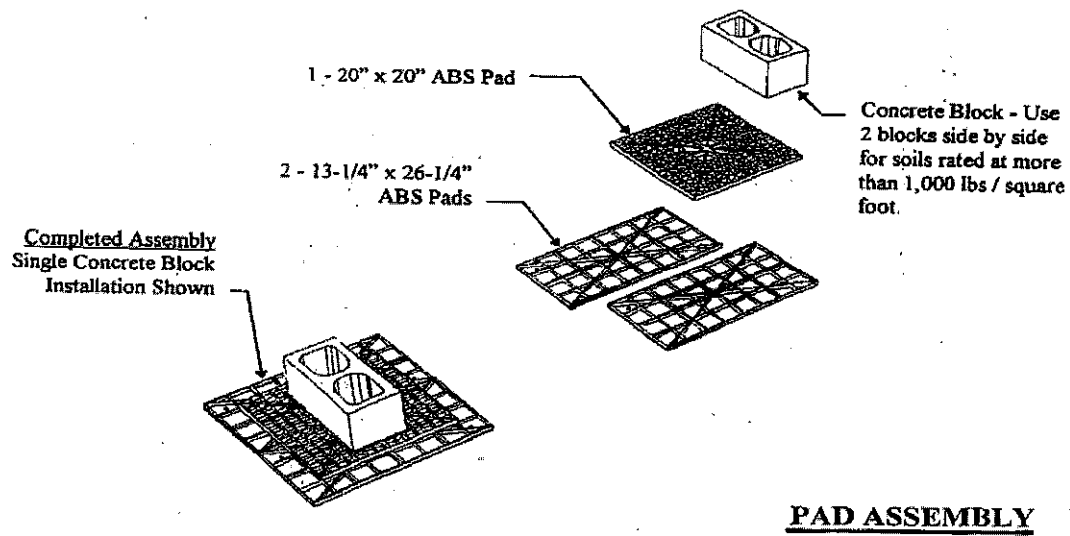


Figure 6. ABS pad assembly installation instructions for a 26"x 26" configuration

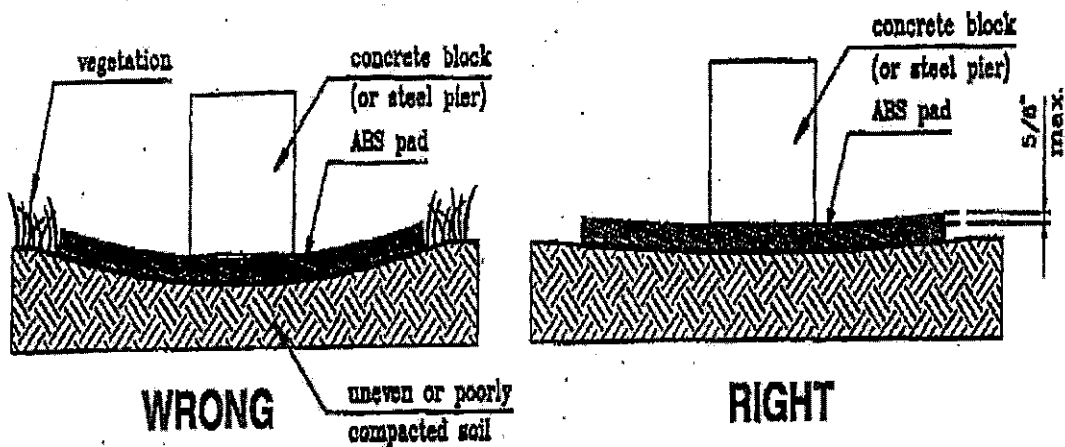


Figure 7. Maximum allowable deflection in a single ABS pad

Source: *Miss. Code Ann.* §§ 75-49-1, et seq.; 75-49-11 (Supp. 2015).

Rule 5.06.10: Tie-downs

Factory-Built homes with provisions for installation of anchor systems, including instructions, in accordance with Federal Manufactured Home Construction & Safety Standards, Section 24 CFR 3280.306 shall be installed in accordance with the manufacturer's instructions. Factory-Built homes not provided with such installation instructions, or Factory-Built homes not provided with instructions for the zone (wind or non-wind) in which they are being installed shall comply with the following:

Source: *Miss. Code Ann.* §§ 75-49-1, et seq.; 75-49-11 (Supp. 2015).

Rule 5.06.10-1: Single-wide Factory-Built Homes

- A. The number of tie-downs for single wide (10 ft., 12 ft., 14 ft., or 16 ft.) Factory-Built homes shall comply with Tables VI and Table VII.
- B. All used Factory-Built homes shall be tied down in accordance with Table VI and Table VII unless the anchoring system is designed and approved by a registered professional engineer (as per manufacturer's installation instructions).
- C. Single section Factory-Built homes shall have diagonal and vertical ties and anchors in accordance with Table VI and Table VII unless the manufacturer's installation instructions are utilized.

TABLE VI - MINIMUM NUMBER OF TIEDOWNS FOR WIND ZONE II*

Length of Factory-Built home, excluding draw bar (ft.)	Number of vertical ties**	Number of diagonal ties, each side	Total required anchors per home
0-40	5	5	10
41-60	7	7	14
61-84	9	9	18

TABLE VII - MINIMUM NUMBER OF TIEDOWNS FOR WIND ZONE I*

Length of Factory-Built home, excluding draw bar (ft.)	Number of vertical ties***	Number of diagonal ties, each side	Total required anchors per home****
0-40	0	4	8
41-60	0	6	12
61-84	0	8	16

* These tables are based on a minimum working load per tie of 3,150 lbs. with a 50 % overload (4,725 lbs. total).

** The Federal Manufactured home construction and safety standards require all Factory-Built homes designed to be located in wind Zone II and III to have a diagonal tie installed at each vertical tie location.

*** If existing vertical tie down straps or brackets are present on the home, vertical straps and anchors must be installed at these locations.

**** If the maximum support pier height is over 24 inches, an additional diagonal tie must be added, per side, for every additional 12 inches of pier height or a portion thereof for **Wind Zone I homes only**.

Source: *Miss. Code Ann.* §§ 75-49-1, et seq.; 75-49-11 (Supp. 2015).

Rule 5.06.10-2: Multi-Sectional Factory-Built Homes

A. All used multi-sectional Factory-Built homes shall have diagonal ties and anchors as required above for single-wide Factory-Built homes as listed in Tables VI and VII above. The number of anchors and straps along the mate line of the multi-sectional Factory-Built home shall be one/half of the required number for one side of a single wide unit having the same length. A minimum of two of the anchor and straps are to be placed within 2 ft. of the end of each section of the home.

B. The installation of anchors and diagonal ties will be required along the mate line on all used multiple section Factory-Built homes unless the manufacturers installation manual for the home is available and specifies that these stabilizing devices are optional.

C. All new multi-sectional Factory-Built homes are to be secured at the centerline with straps and anchors to the specifications in the manufacturer's installation manual or at the locations designated on the home. In addition to centerline ties specified by the manufacturer, a centerline tie must be attached within two (2) feet of each end of each section of the Factory-Built home. Where necessary, an approved bracket shall be installed by the installer/transporter.

D. All multi-sectional homes shall be lagged and sealed together in accordance with the manufacturer's installation instructions. If no manufacturer's installation instructions are available, the instructions provided in this regulation shall be followed.

Source: *Miss. Code Ann.* §§ 75-49-1, et seq.; 75-49-11 (Supp. 2015).

Rule 5.06.10-3: Pan-Type Foundation Stabilizing Systems

1. Proprietary pan-type foundation stabilizing systems shall be installed in accordance with the pan system manufacturer's installation instructions provided with the product as it relates to the length of the home, single-wide or multi-sectional home, the maximum pier height and the pitch of the roof. The name of the manufacturer of the pan-type foundation stabilizing system shall be indicated on the Property Locator/Certificate of Installation form.

2. Prior to the selection and use of the pan-type foundation stabilizing system, it is the responsibility of the installer/transporter to check with the LAHJ to determine if any restrictions have been placed on the use of these types of stabilizing systems.

Source: *Miss. Code Ann.* §§ 75-49-1, et seq.; 75-49-11 (Supp. 2015).

Rule 5.06.10-4: Alternate Systems

The specifications listed above for the tie-downs are minimum standards. Other anchor systems may be approved by the Division or LAHJ provided that such designs are prepared by a registered professional Mississippi engineer or architect based on the criteria set forth in Federal Manufactured Home Construction & Safety Standards, Section 3280.306.

Source: *Miss. Code Ann.* §§ 75-49-1, et seq.; 75-49-11 (Supp. 2015).

Rule 5.06.10-5: Tie-Down Spacing and Sizes

The following specifications are the minimum standards for all tie-down spacing and sizes.

- A. Over the top tie-downs shall be positioned at stud and rafter locations near each end of the Factory-Built home. Others, if needed, may be positioned between them.
- B. A metal roof protector must be used with over-the-roof tie down straps.
- C. Wherever feasible, over the top tie-downs and frame ties directly beneath them may use the same anchors.
- D. All vertical side wall and shear wall tie down buckles existing on the home must be properly strapped and anchored.
- E. All tie-down straps, cables and devices must be tested and approved. All ties shall be fastened to ground anchors and drawn tight with turnbuckles, yoke type fasteners or other such tensioning devices listed with the ground anchor.
- F. All tie-down straps and devices must be attached to the Factory-Built home in accordance with the manufacturer's instructions for the specific types of straps and devices. All tie-down straps and devices must be tested and approved. Straps must be type I, finished B, grade 1 steel strapping, 1 ¼" wide and 0.035" thick conforming with Federal Specifications strapping steel and seals FS QQ-S-781H-1974.
- G. Tie down straps shall not be kinked or bent or otherwise abnormally stressed when installed. Straps must not be in contact with the support piers.
- H. The angle of the diagonal tie down strap shall not exceed 45 degrees between the strap and the ground. If the angle exceeds 45 degrees an additional strap must be installed and attached to the opposite support frame.
- I. All straps must be properly attached to the anchor head according to the manufacturer's installation instruction and properly tensioned. According to manufacturer specifications, the

winding of the strap on the anchor head bolt must contain a minimum of four to five complete turns.

J. Splices in the anchor straps must be installed in accordance with the manufacturer's instructions for straps and devices. If manufacturer instructions for splicing anchor straps are not available, the following instructions will apply. The ends of the straps must overlap a minimum of 6 inches and a maximum of 12 inches. Two (2) crimp seals must be installed in the overlap of the strap ends and each crimp seal must be double crimped.

K. Cables shall be either 7/32 inch diameter or greater (7x7) steel cable or 1/4 inch diameter or greater (7x19) aircraft cable. All cable ends shall be secured with at least two U bolt type cable clamps or other fastening device as approved by the building official.

L. Tie materials shall be capable of resisting an allowable working load of 3,150 lbs. with no more than 2% elongation and shall withstand a 50% overload [4,725 lbs. total]. Tie-downs exposed to weathering shall be resistant to weathering deterioration at least equivalent to that provided by a coating of zinc on steel of not less than 0.30 oz. per square foot of surface coated. Type I, Class B, Grade I, steel strapping 1 1/4 inches wide and 0.035 inch thick, conforming to Federal Specifications QQ S 781 F, is judged to conform to this section.

M. Materials used for ties must terminate with D-rings bolts, or other fastening devices, which will not cause distortion of the band or reduce its breaking strength of 4,725 lb. Please note that ties should be double wrapped (double looped) at top of beam, not at the bottom.

N. Connection of the cable frame tie to the I-beam (or other shape) main structural frame member should be by a 5/8 inch drop forged closed eye bolted through a hole drilled in the center of the I-beam web. A washer, or equivalent, shall be used so that the beam is sufficiently reinforced around the hole. If steel strap ties are used, care should be exercised to insure that minimum bending radius is adhered to so that the breaking strength of the strap is not reduced.

O. Frame ties shall connect the anchor and the steel I-beam (or other shape) main structural frame member which runs lengthwise under the Factory-Built home. Frame ties shall never be connected to any of the steel outrigger beams which fasten to and intersect the main I beam at right angles.

P. Ground anchors should be aligned with center of piers. Also, they should be situated immediately below the outer wall to accommodate over the top ties as well as frame ties.

Source: *Miss. Code Ann.* §§ 75-49-1, et seq.; 75-49-11 (Supp. 2015).