

### 15C-1.0104 Installation Standards for Anchors and Tie-downs.

These specifications are standards set by the Department of Highway Safety and Motor Vehicles for new and used mobile/manufactured homes or park trailers.

#### (1) Anchors:

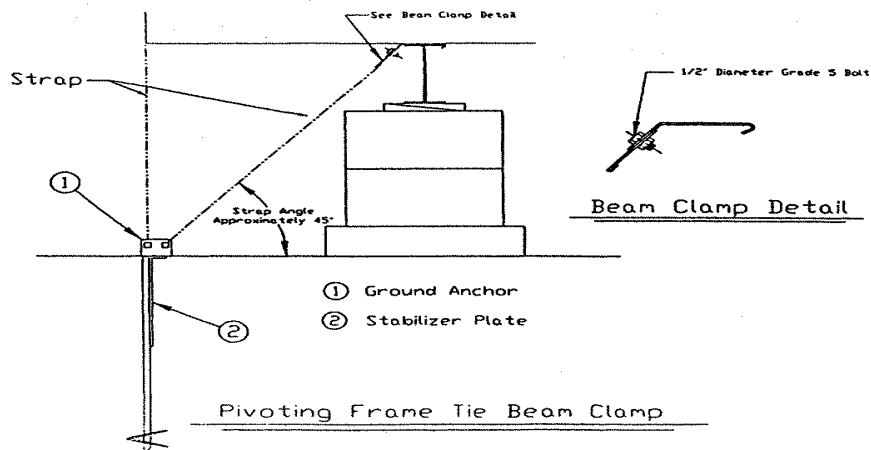
(a) Type I anchor holding power for homes manufactured before July 13, 1994, shall be tested to a working load of three thousand one hundred and fifty (3,150) pounds, with an ultimate load of four thousand seven hundred twenty-five (4,725) pounds.

(b) Type II anchor holding power for homes manufactured after July 13, 1994, shall be tested to a working load of four thousand (4,000) pounds, with an ultimate load of six thousand (6,000) pounds.

#### (2) Frame Ties:

(a) All frame ties for new and used mobile/manufactured homes must have a factory fabricated strap connected at the top of the I-beam to an I-beam clamp approved by the department pursuant to Rules 15C-1.0105 and 15C-1.0107, F.A.C.

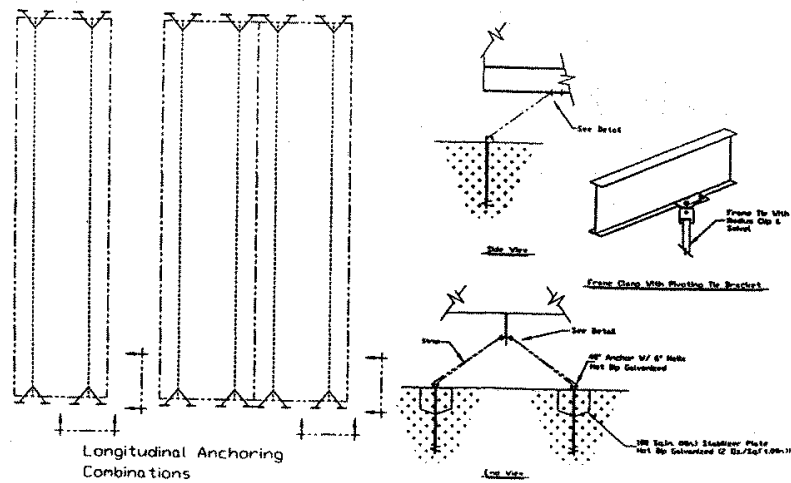
(b) Diagonal tie-downs for new and used mobile/manufactured homes, in all wind zones, shall be spaced no farther apart than five feet four inches (5'4") on center with anchors placed within two feet (2') of each end. Note: Where sidewall strap separation is greater, they must be tied individually. Each frame tie shall be installed to the component manufacturer's instructions. (Refer to below drawing)



(3) Longitudinal Tie-downs. All new and used mobile/manufactured homes, installed sixty (60) days after the effective date of this rule, must have longitudinal tie-downs or other approved longitudinal stabilizing systems meeting the specifications of Rules 15C-1.0105, 15C-1.0107 and 15C-1.0108, F.A.C., and designed to resist horizontal wind loads in the long direction of the home (i.e.: wind load applied to each end of the home). The longitudinal tie-downs are in addition to the anchoring systems required along the exterior side walls and/or marriage walls of the mobile/manufactured home.

(a) When anchors and straps are used for stabilizing the home in the longitudinal direction the strap must connect to a clip welded onto the I-beam or other device connected mechanically. Unless factory installed, the connection device must be approved by the department pursuant to Rules 15C-1.0105 and 15C-1.0107, F.A.C. At least four (4) anchors and straps are required (i.e., 16 per double-wide home) at the end of each section of the mobile/manufactured home.

Example of Longitudinal Tie-down Placement



(4) Marriage Wall/Centerline Ridge Beam Column Ties, Shear Wall Ties and Frames Ties:

(a) Centerline ties are required for all new and used multiple section homes.

(b) Multiple section homes are to be secured at the centerline with straps to the specifications in the manufacturer's 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 feet (2') of each end of each section of the mobile/manufactured home. Where necessary, an approved bracket shall be added by the installer.

(c) Centerline tie connections must be designed to swivel where attached to the mobile/manufactured home and must be connected to the mobile/manufactured home by means of grade #5 bolts with a minimum diameter of one-half inch (1/2").

(d) As an alternate use with existing brackets or a manufacturer's welded device, the approved method for installing straps to sidewall and centerline brackets is to loop the strap using a crimp seal with two (2) crimps evenly spaced and protected by a radius clip or manufactured bent/formed radius protective tab. Note: Bracket lacing or field threading shall not be used.

(5) Roof Ties:

(a) Homes manufactured after June 15, 1976, without over-the-roof ties, but designated "Hurricane Resistant" per the Federal Manufactured Home Construction and Safety Standards, section 3280.305(c)(2), as hereby incorporated by reference, shall not require roof ties. All manufactured homes manufactured after July 13, 1994, shall require vertical and frame tie points.

(b) Homes manufactured before July 13, 1994, where factory installed roof ties are not evident and it cannot be determined that the mobile/manufactured home is "Hurricane Resistant" without such ties, then the number of roof ties, as required by the table below, shall be installed so as to not contact with the structure, except at adequately reinforced areas, where additional load will not damage the structure.

1. Single-wide homes less than or equal to sixty feet (60') – three (3) roof ties.
2. Single-wide homes greater than or equal to sixty-one feet (61') – four (4) roof ties.
3. Double-wide homes – roof ties required only if installed by the manufacturer.

(c) All new park trailers manufactured after January 2, 1995, shall have at least three (3) factory installed vertical tie points in

addition to the required frame ties.

(d) End roof ties or vertical ties shall be installed at not more than twenty-four inches (24") from the end of the structure or at the first stud and truss and attached to the same anchor as the frame tie. If the frame does not extend to the back end wall, then the roof tie shall be installed within six inches (6") of the end of the chassis.

(e) Intermediate roof ties or vertical ties shall then be located at midway or equally spaced between the end roof ties, as feasible.

(f) Double-wide homes manufactured before July 13, 1994, may not require roof ties, unless such ties are installed or provided by the manufacturer. However, additions or canopies may require such ties depending on the type of construction. All are subject to the same frame tie requirements as single-wide homes.

(g) Over-the-roof tie-down straps or tie points shall be connected to a ground anchor. If a strap has been damaged, cut off or removed, a replacement strap shall be installed or spliced using two (2) listed strap seals affixed to twelve inch (12") overlap of strap with two (2) crimps evenly spaced on the seal.

(h) Used homes designed and requiring over-the-roof tie-downs and having a permanent type structure adequate to provide structural rigidity and stability, meeting the design loads as required by the Standard Building Code, as hereby incorporated by reference, shall not be required to have over-the-roof ties in the area of the addition, but shall require one at each end.

(6) Center Line Fastening: Multiple section homes shall be mechanically fastened every twenty-four inches (24") at the bottom, end walls and roof. A minimum thirty (30) gauge, eight inches (8") wide, galvanized strip shall be centered over the peak and fastened with galvanized roofing nails at two inches (2") on center at both sides of center line.

*Rulemaking Authority 320.011, 320.8325(2) FS. Law Implemented 320.77(10), 330.822(12), 320.8285, 320.8325, 320.835(2) FS. History—New 1-10-94, Amended 10-2-95, 3-31-99.*