

FLORIDA BUILDING CODE 2007 (WITH 2009 SUPPLEMENTS)

RESIDENTIAL SECTION R4410.4 HIGH VELOCITY HURRICANE ZONES-

STORM SHUTTER – EXTERNAL PROTECTIVE DEVICES

R4410.4.1 GENERAL – Unless exterior wall components including but not limited to structural glazing, doors and windows of enclosed buildings have specific Product Approval to preserve the enclosed building envelope against impact loads as set forth in Section R4403, all such components shall be protected by product approved storm shutters. (See Section R4403 following Section R4410.4)

R4410.4.2 – The storm shutters shall be designed and constructed to insure a minimum of 1 inch (25 mm) separation deflection with components and frames of components they are to protect unless the components and frame are specifically designed to receive the load of storm shutters, and shall be designed to resist the wind pressures as set forth in Section R4403 by methods admitting of rational analysis based on established principles of design. Storm shutter shall also be designed to comply with the impact load requirements included within Section R4403. (See Section R4403 following Section R4410.4)

R4410.4.3 – The storm shutter design calculations and detailed drawings, including attachment to the main structure, shall be prepared by and bear the seal of a qualified Florida-registered delegated engineer, or if qualified to prepare such design, but the engineer or architect of record, which architect or engineer shall be proficient in structural design. The architect or engineer of record shall, in all instances, review and approve documents prepared by the delegated engineer.

R4410.4.4 - Storm shutters shall be approved by the product control section and shall bear the name of the company engraved in every section of the system.

R4410.4.5 – Deflection shall not exceed the limits set forth in Section R4403. (See Section R4403 following Section R4410.4)

R4410.4.6 – Unless storm shutters are permanently attached to the main structure, all such storm shutters shall, where practicable, be neatly stored at all times in a designated and accessible area within the building.

R4410.4.6.1 – Shutters used to protect openings above the first story of any building or structure must be permanently installed and closable from the inside of the building or structure unless such openings are accessible without the use of a ladder or lift, or shutters can be installed from the interior of the building or structure.

Exception: Group R3 detached single-family residences not exceeding two stories.

R4410.4.7 – Storm shutters must completely cover an opening in all directions.

R4410.4.7.1 – On any side of an opening, the maximum side clearance between the shutter and a wall or inset surface shall be  $\frac{1}{4}$  inch (6.4 mm). Any distance in excess of  $\frac{1}{4}$  inch (6.4 mm) shall require end closure or shutter overlap, where applicable.

R4410.4.7.2 – Shutter overlap shall be a minimum of one and one-half times the side clearance between the shutter and wall.

R4410.4.7.3 – End closures shall be designed to resist wind loads specified in Section R4403, based on rational analysis. (See Section R4403 following Section R4410.4)

## **SECTION R4403 HIGH VELOCITY HURRICANE ZONES – GENERAL**

### **R4403.1 General Requirements.**

R4403.1.1 – Any system, method of design or method of construction shall admit of a rational analysis in accordance with well-established principles of mechanics and sound engineering practices.

R4403.1.2 – Buildings, structures and all parts thereof shall be designed and constructed to be of sufficient strength to support the estimated or actual imposed dead, live, wind, and any other loads, both during construction and after completion of the structure, without exceeding the allowable materials stresses specified by this code.

R4403.1.3 – No building structure or part thereof shall be designed for live loads less than those specified in this section or ASCE 7 with commentary, except as otherwise noted in this code.

R4403.1.4 – The live loads set forth herein shall be assumed to include the ordinary impact but where loading involves unusual impact, provision shall be made by increasing the assumed live load.

R4403.1.5 – In the design of floors, not less than the actual live load to be imposed shall be used. Special provisions shall be made for machine or apparatus loads where applicable.

R4403.1.6 – Floor and roof systems shall be designed and constructed to transfer horizontal forces to such parts of the structural frame as are designed to carry these forces to the foundation. Where roofs or floors are constructed of individual prefabricated units and the transfer of forces to the building frame and foundation is totally or partially dependent on such units, the units and their attachments shall be capable of resisting applied loads in both vertical

and both horizontal directions. Where roofs or floors are construction of individual prefabricated units and the transfer of forces to the building frame and foundation is wholly independent of such units, the units and their attachments shall be capable of resisting applied loads normal to the surface, in and out.

**R4403.2 General design for specific occupancies and structures.**

**R4403.2.1 Fences.** Fences not exceeding 6 feet (1829 mm) in height from grade may be designed for 75 mph (33 m/s) fastest mile wind speed or 90 mph (40 m/s) 3-second gust.