

MEMO



Construction Services Department

To: Construction Services Staff, Contractors and Owner Builders
Date: April 10, 2006
From: Neil K. Melick, Building Official
Subject: Implementation Standard for Wind-Borne Debris Impact Protection for the Florida Building Code, 2004 Edition.

IMPLEMENTATION STANDARD FOR WIND-BORNE DEBRIS IMPACT PROTECTION

**Effective Immediately for use with the Florida Building Code, 2004 Edition as amended
and replaces all previous versions.**

AUTHORITY

Florida Building Code, Building, 2004 Edition as amended, Sections 104.11, 1609.1.4, 1714.5;
Florida Building Code, Residential, 2004 Edition as amended, Sections R101.2 and R613; and
Florida Building Code, Existing Building, 2004 Edition as amended, Sections 507.3 and 507.4.

SCOPE

To establish the guidelines for the implementation of standards relating to permitting, installation, and inspection of hurricane missile impact protection devices and/or assemblies (windows, shutters, doors, garage doors and skylights) in the City of West Palm Beach. Conditions described herein apply to all removable or permanently affixed impact protection devices and/or systems required by the Florida Building Code.

GENERAL CONDITIONS

Manufacturers of impact protection devices and/or assemblies intending to market, sell, and/or install products in the City of West Palm Beach shall meet the requirements of ASTM E 1886 and ASTM E 1996, or Miami-Dade TAS 201, 202, and 203. Evidence of compliance shall be provided pursuant to the Florida Administrative Code, Rule 9B-72.

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Hurricane missile impact protection shall be provided for all exterior glazed openings including, but not limited to, windows, doors, storefronts, skylights, and garage doors.

Exceptions:

1. Glass unit masonry, complying with Section 2110, Florida Building Code, Building, 2004 Edition.
2. Buildings that are designed as open or partially enclosed (see definitions, FBC 1609.2 and Section 1609.1.4.1).
3. Storage sheds that are not designed for human habitation and that have a floor area of 720 square feet or less.
4. Openings in sunrooms, enclosed balconies and enclosed porches constructed under existing roofs or decks provided the spaces are separated from the building interior by a wall and all openings in the separating wall are protected in accordance with 1609.1.4 of the Florida Building Code, Building. Such spaces shall be permitted to be designed as either partially enclosed or open structures (See Florida Building Code, Building, Section 1609.1.4(4) and Florida Building Code, Existing Building, Section 507.4.).
5. For one and two-family dwellings constructed under codes other than the Florida Building Code, the replacement of garage doors and exterior doors with glazing, sliding glass doors, glass patio doors, skylights, and operable and inoperable windows within any 12 month period shall not be required to have opening protection provided when the aggregate area of the glazing in the replaced components does not exceed 25 percent of the aggregate area of the glazed openings in the dwelling or dwelling unit (See Florida Building Code, Existing Building, Section 507.3).

PROCEDURES

- I. Permit applications and plans submitted shall include the appropriate compliance reports as herein specified. Said plans shall identify by specification or graphic representation the approved device/assembly providing glazing protection from wind-borne debris impact. Details of building construction systems at all exterior glazed openings shall be provided to indicate that suitable supports or substrate conditions have been considered for the installation of the fasteners (spacing and type) for the impact device/assembly.

A complete installation schedule summarizing and identifying opening sizes, story heights, unit mark numbers, unit spans/widths, unit storm bar reinforcing requirements, wall pressure zones, slat types, etc., shall be submitted at time of permit application to facilitate plan review and permit issuance.

- II. Approved glazing protective devices/assemblies shall be completely installed and verified to confirm proper anchoring, attachment, fit, tolerance, and operability in accordance with the device/assembly compliance report.

All products shall be labeled in accordance with the Florida Administrative Code, Rule 9B-72.

REFERENCE STANDARD

- Florida Building Code, Building, 2004 Edition as amended.
- Florida Building Code, Existing Building, 2004 Edition as amended.
- Florida Building Code, Residential, 2004 Edition as amended.

QUESTIONS & ANSWERS

Further developments in impact standards, products, and practices may warrant revisions to this standard. This format of questions and answers is provided as a convenient commentary and method for addressing such related issues and developments.

- 1. Is a permit required for removable storm panels and/or permanently affixed glazing protection systems, windows, door(s), garage door(s) and skylights for new structures and renovations/additions to existing structures?**

Yes. When installed as part of new construction, renovations or additions and all required information is provided at the time of plan submittal, the primary permit for the renovation, addition or new construction will include this work. **If the information is not included and the permit is issued for the addition, renovation or new structure, a separate permit and fee shall be required for the installation of storm panels, windows, door(s), garage door(s), and skylights. No Certificate of Occupancy or Certificate of Completion will be issued until all required missile impact protection is installed and inspected for compliance.**

- 2. Will complete installation and inspection of permanently affixed (in-place systems) operable protection devices/assemblies be required for a certificate of completion or occupancy?**

Yes. In particular, single-family dwellings and smaller commercial structures require installation of permanently affixed assemblies to be in-place for final inspection. Large installations involving multi-story structures, or where exterior access is not readily available, may require phased, in-progress, or special inspections. Other installation conditions may also require in-progress inspections to verify placement of special support members and/or embedded components. In all cases, final inspections will include verification of mechanical operation, fit, reinforcing bar placement (if required), and

locking/securing mechanisms. Where power is not available for mechanical operation verification, then manual operation must be verified.

3. Will complete installation of removable storm panels/shutters be required for a certificate of completion or occupancy?

Yes, all removable storm panels/shutters including all mounting track and related installation hardware shall be completely in-place at time of inspection to ensure proper fit and tolerances. All installation fasteners, connectors, and accessories necessary for a complete installation shall be clean and serviceable for their intended purpose. (For example, the heads of screws for hanging and removing shutters shall not be clogged with paint. Key hole washers, where required, shall be in place for the inspection.) All panels shall be labeled pursuant to these implementation requirements and storage provided on premises within the building. All panels shall be labeled as to location on structure and placement (i.e., top, bottom, etc.)

Note: The manufacturer's instructions and installation schedule, together with the Notice of Acceptance and/or test report, shall be available at the time of final inspection.

4. Do the impact standards apply to replacement of windows/doors on existing structures, including partial replacements?

The Florida Building Code, Existing Building, Section 507.3 requires that, when garage doors, exterior doors, skylights, operative and inoperative windows are replaced, they shall be designed and constructed in accordance with Chapter 16 of the Florida Building Code.

Opening Protection Exception:

For one-and two-family dwellings constructed under codes other than the Florida Building Code and located in wind-borne debris regions, the replacement of garage doors and exterior doors with glazing, sliding glass doors, glass patio doors, skylights, and operable and inoperable windows within any 12 month period shall not be required to have opening protection, but shall be designed for wind pressures for enclosed buildings provided the aggregate area of the glazing in the replaced components does not exceed 25 percent of the aggregate area of the glazed openings in the dwelling or dwelling unit.

5. Are new additions to existing residential/commercial structures subject to the impact standards?

Yes. See Chapter 9, Florida Building Code, Existing Buildings, 2004 Edition as amended, for various restrictions and requirements.

6. Are wood structural panels considered an acceptable alternative?

Yes, provided the wood structural panels comply with the requirements of the Florida Building Code, Building, Section 1609.1.4 exception 1 and are designed to resist the components and cladding loads determined in accordance with the provisions of Section 1609.6.5 of the Florida Building Code, Building. Wood structural panels shall be designed by a State of Florida Licensed Engineer or Architect.

7. Where can I find listed products and relevant product approval documentation?

State or local product approval is required in accordance with the Department of Community Affairs, Florida Building Commission, Rule 9B-72. Go to www.floridabuilding.org to download State product approval. If the proposed product does not have State product approval, an application form for local product approval is available on the ONE STOP SHOP WEB SITE @ www.cityofwpb.com, or visit the Construction Services Department to secure a copy.

8. What are the licensing requirements for shutter installation contractors on commercial or multi-story buildings?

Revisions to county licensing for Aluminum Specialties Contractors contain parameters for residential, commercial and multi-story structures. Contact PBC Contractors Certification for scoping responsibilities.

9. Is a permanent property address label necessary on removable storm shutters/panels?

No.

10. Does the impact standard apply to garage doors having glass panels?

Yes, glazed portions of the door would be subject to the impact test.

11. Does the impact standard apply to such products as solar shades, security burglar bars, and field installed safety films?

Any products represented and sold as glazing impact protection shall be tested and approved under the appropriate standard. This would include site applied safety films, anti-vandal screening, security bars, or any other product installed over glazing for the purpose of wind-borne debris impact resistance.

Section 1008.1.3.6 The temporary installation or closure of storm shutters, panels, and other approved hurricane protection devices shall be permitted on emergency escape and rescue openings in Group R occupancies during the threat of a storm. Such devices shall not be required to comply with the operational constraints of Section 1025.4. While such protection is provided, at least one means of escape from the dwelling or dwelling unit shall be provided. The means of escape shall be within the first floor of the dwelling or dwelling unit and shall not be located within a garage. Occupants in any part of the dwelling or dwelling unit shall be able to access the means of escape without passing through a lockable door not under their control.

Solar shades are not subject to impact testing and approval. However, full disclosure and notice shall be contained on all products, drawings, written estimates, bid proposals, sales contracts, promotions and advertising, etc., clearly stipulating that solar shades are not intended for storm or missile impact protection and must be removed or rolled-up and secured within twelve (12) hours of the official notification by the National Weather Service of a hurricane watch.

12. Are new window wall systems (window and sliding glass door enclosures) subject to the impact protection standards?

Yes. However, if the existing windows/sliding glass doors opening to patios/balconies are to remain in place and already contain shutters that meet code, or the main structure was designed as open or partially enclosed, additional impact tested products would not be required.

13. Recognizing such concerns as absentee owners, or cases where longer time and effort is necessary to secure shutters on large or multi-story buildings, what measures are being recommended or implemented to ensure that complete installation or securing is done sufficiently in advance of the hurricane event?

In matters concerning public safety, health, and general welfare not specifically addressed in the code, Section 104.6 of the Florida Building Code, Building, Chapter 1, Administration, 2004 Edition as amended by the City of West Palm Beach, provides the ability for the Building Official to implement requirements for ensuring stability, strength, and proper operation of existing buildings.

In order to assure the securing of shutters on large or multi-story buildings, or multiple buildings on the same property, pre-storm preparation plans must be submitted by the property owners or managing agents for review by the Construction Services Department. Any such plan shall include, at a minimum, on-site location of shutters, party responsible for securing the shutters (said parties must be located within Palm Beach County), total

number of openings to be protected and total time required to secure all openings. Protection of openings shall be accomplished within twelve (12) hours or less of the official notification by the National Weather Service of a hurricane watch.

Provisions in the building codes (and this standard) are not intended to prohibit the use of alternative materials and methods, and allow the Building Official to review and approve any alternate deemed equivalent in quality, strength, effectiveness, fire resistance, durability and safety prescribed by code. Based upon this code provision, acceptance of alternate materials and methods may be approved on a case-by-case basis and shall require sufficient evidence or proof to substantiate any claim made regarding the alternate.

14. Are removable storm panels appropriate for use on very large, mid or high-rise structures?

No, except on the ground floor. On commercial and multi-unit residential structures, above the first level, impact resistant glazing or permanently affixed protective devices shall be installed. Permanently affixed protective devices shall require the written approval of the Building Official.

15. Will professionally designed, custom (one-of-a-kind) impact resistant glazing for special applications be required to have an evaluation report?

No. These types of special applications (i.e. unique and/or large openings not covered by an evaluation and compliance report), when professionally designed and evaluated for impact resistance, may be specified for use under site specific conditions using the Department of Community Affairs, Florida Building Commission, Rule 9B-72.

16. Are master plans previously approved and on file with the Construction Services Department required to be changed to comply with impact standards?

Yes, unless the structure has been designed as open or partially enclosed.

17. Does the glazing installed in porch enclosures under existing roofs require impact protection?

No, as long as the existing glazed window/door units at the main structure are not removed and the porch was designed as an open or partially enclosed structure.