

TEXAS DEPARTMENT OF INSURANCE

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Proposed Change to Windstorm Building Requirements or Procedures in the Texas Windstorm Insurance Association Plan of Operation

Name: Engineering Staff _____ Date: May 2, 2006 _____
Organization/Company: Texas Department of Insurance _____ Telephone: (512) 322-2212 _____
Address: 333 Guadalupe _____ Fax No.: (512) 463-6693 _____
City, State, Zip: Austin, TX 78714 _____

**Please complete the following for each proposed change:
(A separate form must be submitted for each proposed change.)**

1. Proposed change to the following building requirement or procedure:

Refer to attached pages.

2. Proposed change is to:

Document: 2006 International Building Code _____
Section: 1609.1.2 _____
Table _____
Figure _____
Appendix _____

3. Please use the following format to present the proposed change:

~~LINE THROUGH LANGUAGE TO BE DELETED~~ UNDERLINE NEW LANGUAGE TO BE ADDED

4. Proposed Change. Please specify change. Attach additional sheets if needed.

Refer to attached pages.

5. Reason for Change. Please state purpose and reason for change. Attach additional sheets if needed.

Refer to attached pages.

For Texas Department of Insurance use only:

Item Number: _____
BCAC Form 100-99 Amended January 1, 2005

- 6. Attach supporting written or printed information, including, but not limited to, test data, structural calculations, and/or documentation that the proposed change complies with the minimum wind load criteria and design standards specified in the building requirements adopted by the Texas Department of Insurance. Attach supporting written or printed information relating to the proposed changes to the building requirements or procedures contained in the Texas Windstorm Insurance Association Plan of Operation.**

Pursuant to Article 21.49, §6C of the Insurance Code, this proposal form must be complete and submitted to the address specified above not later than the 30th day before the date of a scheduled advisory committee meeting for the proposal to be considered at that meeting.

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1609.1.2 Protection of openings. For structures located in the Inland II area as adopted by the Texas Department of Insurance, protection of exterior openings from windborne debris is not required. For structures located in the Inland I area as adopted by the Texas Department of Insurance, glazed exterior openings in buildings shall be impact resistant or protected with an impact-resistant covering. For structures located in the Seaward area, as adopted by the Texas Department of Insurance, all exterior openings in windborne debris regions, glazing in buildings shall be impact resistant or protected with an impact-resistant covering. Exterior openings shall include exterior windows, exterior doors, garage doors, and skylights. Exterior opening protection for windborne debris shall meeting the requirements of an approved impact-resisting standard or ASTM E 1996 and of ASTM E 1886 referenced therein as follows:

1. ~~GlazedExterior~~ openings located within 30 feet (9144 mm) of grade shall meet the requirements of the Large Missile Test of ASTM E 1996.
2. ~~GlazedExterior~~ openings located more than 30 feet (9144 mm) above grade shall meet the provisions of the Small Missile Test of ASTM E 1996.

Exterior opening protection shall be installed in accordance with the manufacturer's approved installation instructions for the manner in which they were tested for uniform static wind pressure resistance and for windborne debris resistance. Removable windborne debris protection shall have installation instructions provided.

Exceptions:

1. For structures located in the Inland I area, Wood structural panels with a minimum thickness of $\frac{7}{16}$ inch (11.1 mm) and a maximum span of 8 feet (2438 mm) shall be permitted for opening protection in one- and two-story buildings. Panels shall be pre-cut so that they shall be attached to the buildings framing surrounding the opening containing the product with the glazed opening. Panels shall be installed on the exterior side of the building. Panels shall be labeled or marked to identify the proper installation location on the building. Panels shall be secured with the attachment hardware provided. Installation instructions shall be provided. Attachments shall be designed to resist the components and cladding loads determined in accordance with the provisions of ASCE 7. Attachment in accordance with Table 1609.1.2 is permitted for buildings with a mean roof height of 33 feet (10 058 mm) or less where wind speeds do not exceed 130 mph (57.2 m/s).
2. ~~Glazing in Occupancy Category I buildings as defined in Section 1604.5, including greenhouses that occupied for growing plants on a production or research basis, without public access shall be permitted to be unprotected.~~
2. Glazing in Occupancy Category II, III, or IV buildings located over 60 feet (18 288 mm) above the ground and over 30 feet (9 144 mm) above aggregate surface roofs located within 1,500 feet (458 m) of the building shall be permitted to be unprotected.

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TABLE 1609.1.2
 WINDBORNE DEBRIS PROTECTION FASTENING SCHEDULE
 FOR WOOD STRUCTURAL PANELS USED IN THE INLAND I AREA ^{a,b,c,d}

FASTENER TYPE	FASTENER SPACING		
	Panel span ≤ 4 foot	4 foot < panel span ≤ 6 foot	6 foot < panel span ≤ 8 foot
2-1/2" #6 Wood screws	16"	12"	9"
2-1/2" #8 Wood screws	16"	16"	12"

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound = 4.4 N, 1 mile per hour = 0.44 m/s

- a. This table is based on a maximum wind speed (3 second gust) of 130 mph and a 33-foot mean roof height.
- b. Fasteners shall be installed at opposing ends of the wood structural panel. Fasteners shall be located a minimum of 1" from the edge of the panel.
- c. Fasteners shall be long enough to penetrate through the exterior wall covering and a minimum of 1 3/4" into wood wall framing; a minimum of 1 1/4" into concrete block or concrete; or into steel framing by at least three threads. Fasteners shall be located a minimum of 2 1/2" from the edge of concrete block or concrete.
- d. Where screws are attached to masonry or masonry/stucco, they shall be attached utilizing vibration-resistant anchors having a minimum ultimate withdrawal capacity of 490 pounds.

3. For structures located in the Seaward area, wood structural panels with a minimum thickness of 15/32" (11.9 mm) shall be permitted for exterior opening protection in one- and two-story buildings. Panels shall be pre-cut so that they shall be attached to the buildings framing surrounding the opening containing the exterior opening product. Panels shall be secured with the attachment hardware provided. Installation instructions shall be provided. The panels and their attachment to the structure shall meet the requirements of the Large Missile Test using either an approved impact resisting standard or ASTM E 1996 and ASTM E 1886 referenced therein. The panels shall be installed in accordance with the manner in which they were tested for uniform static wind pressure resistance and for windborne debris resistance.

Reason for Texas Revision:

The Texas Revision states that windborne debris protection is not required for buildings located in the Inland II area, which is consistent with the definition of windborne debris regions in the 2006 International Building Code (IBC) and the basic wind speed requirements along the Texas Gulf Coast. For construction located in the Inland I area, only glazed exterior openings require windborne debris protection. This is consistent with the windborne debris requirements specified in the IBC. For construction located in the Seaward area, windborne debris protection is consistent with the windborne debris criteria the TDI established prior to the adoption of the IBC.

For wood structural panels used in the Inland I area, the Texas Revision clarifies that the panels be secured to the building framing surrounding the opening containing the glazed opening product. This assures that the fasteners are penetrating into wood wall framing, concrete block, or concrete. As written in the IBC, the fasteners used to secure the panels may be misinterpreted as being able to be secured

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directly to the exterior opening product, which may not be constructed of materials capable of providing the required withdrawal resistance.

For wood structural panels used in the Seaward area, the Texas Revision states that the panels and their attachment must be based on results from the uniform static load testing and windborne debris testing. This requirement is consistent with the windborne debris criteria the TDI established prior to the adoption of the IBC.

A statement has been added requiring installation instructions to be provided when either wood structural panel or other types of removable windborne debris protection systems are used. Since most building owners will not have a copy of the IBC, Texas Revisions, or product evaluation reports, providing them with installation instructions will give them access to the proper method of installing the systems when it is time to do so.

Exception 2 in the IBC has been deleted. This exception would permit certain structures with glazing to be designed without exterior opening protection. Damage to a building's interior as well as to its interior contents is a major portion of the losses associated with buildings located in hurricane prone regions.

Exception 3 in the IBC has not been deleted. Glazing in buildings located over 60 feet above the ground and over 30 feet above aggregate surface roofs located within 1,500 feet of the building represent a low probability that the exterior openings will be damaged by windborne debris.

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