

# 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 the attached pages.

**2. Proposed change is to:**

**Document:** 2006 International Residential Code \_\_\_\_\_  
**Section:** R301.2.1.2 \_\_\_\_\_  
**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 the attached pages.

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

Refer to the 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 30<sup>th</sup> day before the date of a scheduled advisory committee meeting for the proposal to be considered at that meeting.*

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**R301.2.1.2 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, ~~Windows in buildings located in windborne debris regions~~ shall have glazed exterior openings protected from windborne debris. For structures located in the Seaward area as adopted by the Texas Department of Insurance, buildings shall all exterior openings protected from windborne debris. Exterior openings shall include exterior windows, exterior doors, garage doors, and skylights. ~~Glazed Exterior~~ opening protection for windborne debris shall meet the requirements of the Large Missile Test using either an approved impact resisting standard or of ASTM E 1996 and ~~of~~ ASTM E 1886 referenced therein and 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 to cover the glazed openings with the attachment hardware provided. Installation instructions shall be provided. Attachments shall be designed to resist the component and cladding loads determined in accordance with either Table R301.2(2) or ASCE 7-Section 1609.6.5 of the International Building Code. Attachment in accordance with Table R301.2.1.2 is permitted for buildings with a mean roof height of 33 feet (10 058 mm) or less where wind speeds do not exceed 130 miles per hour (58 m/s). If attachments are determined in using component and cladding loads, then the following limitations shall apply:
  - a) Panel span and fastener spacing shall be in accordance with Table R301.2.1.2.
  - b) Attachment hardware shall comply with the footnotes of Table R301.2.1.2.
  - c) Attachment hardware shall be secured to the wall framing only (wood or steel wall framing, concrete, or masonry block). Attachment hardware shall not be secured to exterior coverings or brick veneer unless the entire assembly is tested in accordance with R301.2.1.2.

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TABLE R301.2.1.2  
 WINDBORNE DEBRIS PROTECTION FASTENING SCHEDULE  
 FOR WOOD STRUCTURAL PANELS USED IN THE INLAND I AREA <sup>a,b,c,d</sup>

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 = 4.448 N, 1 mile per hour = 0.447 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 ¼" into wood wall framing and a minimum of 1 ¼" into concrete block or concrete, and into steel framing a minimum of 3 exposed threads. Fasteners shall be located a minimum of 2 ½" 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.

2. For structures located in the Seaward area, wood structural panels with a minimum thickness of 15/32 inch (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 load 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 Residential Code (IRC) 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 2006 IRC. 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 IRC.

For wood structural panels used in the Inland I area, the Texas Revision clarifies that the panels be secured to the 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 IRC, the fasteners used to secure the panels may be misinterpreted as being able to be secured directly to the

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

Reference to attachments designed to resist components and cladding loads using Section 1609.6.5 of the International Building Code (IBC) has been deleted. This reference was deleted since there is no Section 1609.6.5 in the IBC. Instead, reference is made to ASCE 7, which is referenced in the IRC. One can still use Table R301.2(2) of the IRC to determine components and cladding loads for attachments.

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 IRC.

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 IRC, 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.

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