

# 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: June 15, 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.

The proposed change is to add an additional requirement for testing of asphalt shingles to **ASTM D 6381 and UL 2390, or** ASTM D 7158 into the TDI version of the 2006 International Residential Code as an optional method of determining performance for certain types of shingles.

2. Proposed change is to:

Document 2006 International Residential Code \_\_\_\_\_  
Section R905.2.4.1, New R905.2.4.1.1, R905.2.6, Chapter 43 \_\_\_\_\_  
Table New Table R905.2.4.1 \_\_\_\_\_  
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.

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

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- 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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**Item Number:** \_\_\_\_\_

BCAC Form 100-99 Amended January 1, 2005

**Page**   2   **of**   4

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

Modify section:

**R905.2.4.1 Wind resistance of asphalt shingles.**

Asphalt shingles shall be installed in accordance with Section R905.2.6. ~~For roofs located where the basic wind speed in accordance with Figure R301.2(4) is 110 mph or greater (applicable to the Inland II, Inland I, and Seaward Zones), asphalt shingles shall be tested in accordance with ASTM D 3161, Class F (minimum 110 mph). Wrappers of shingle bundles that have been qualified using this method shall be labeled with ASTM D 3161, Class F. As an alternative, load and wind resistance of asphalt shingle roof coverings shall be determined in accordance with Section R905.2.4.1.1. Shingles classified using ASTM D 3161 are acceptable for use in wind zones less than 110 mph (49 m/s). Shingles classified using ASTM D 3161, Class F, are acceptable for use in all cases where special fastening is required.~~

Insert new section:

**R905.2.4.1.1 Alternative test methods.** ~~The wind-induced uplift force on the shingle shall be determined using the method in UL 2390. The resistance of the shingle to the uplift force shall be determined using ASTM D 6381. As an alternative, testing shall be conducted in accordance with ASTM D 7158, which references both ASTM D 6381 and UL 2390. Shingles passing these test criteria shall be considered suitable for roofs located as stated in Table 905.2.4.1.~~

~~Classification requires that the resistance of the shingle to wind uplift, measured using the method in ASTM D 6381, equal or exceed the calculated load imposed by wind in the applicable zone as determined using UL 2390.~~

~~Classification by this method applies to with Wind Exposures B and C only in an Occupancy Category of I or II. Wrappers of shingle bundles that have been qualified using this alternative method shall be labeled with the tested wind classification specified in Table 905.2.4.1 and reference UL 2390/ASTM D 6381 or ASTM D 7158.~~

**TABLE 905.2.4.1**  
**ROOF COVERING CLASSIFICATION**  
**USING ALTERNATIVE TEST METHODS**

<b><u>TDI Construction Zone</u></b>	<b><u>ASTM D 6381/UL 2390 or ASTM D 7158 Wind Classification<sup>1</sup></u></b>
<u>Inland II</u>	<u>Class G or Class H</u>
<u>Inland I</u>	<u>Class G or Class H</u>
<u>Seaward</u>	<u>Class H</u>

Note: <sup>1</sup>Class G is 120 mph. Class H is 150 mph

Modify section:

**R905.2.6 Attachment.** ~~Asphalt shingles shall have the minimum number of fasteners required by the manufacturer, but not less than four fasteners per strip shingle. For normal application, asphalt shingles shall be secured to the roof with not less than four fasteners per strip shingle or two fasteners per individual shingle. Where the roof slope exceeds 20-21 units vertical in 12 units horizontal (467-175 percent slope), special methods of fastening are required. asphalt shingles shall be installed in accordance with the manufacturer's printed installation instructions for steep slope applications. For roofs located where the basic wind speed per Figure R301.2(4) is 110 mph (49 m/s) or higher, special methods of fastening are required. Special fastening methods shall be tested in accordance with ASTM D 3161, Class F. Asphalt shingles wrappers shall bear a label indicating compliance with ASTM D 3161, Class F.~~

**For Texas Department of Insurance use only:**

Item Number: \_\_\_\_\_

Page 3 of 4

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

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**Add text as follows:**

**CHAPTER 43**  
**REFERENCED STANDARDS**

**ASTM**

D 6381-03b            Standard Test Method for Measurement of Asphalt Shingle Mechanical Uplift Resistance .....R905.2.4.1.1

D 7158-05            Standard Test Method for Wind Resistance of Sealed Asphalt Shingles (Uplift Force/Uplift Resistance Method) .....R905.2.4.1.1

**UL**

2390 (May 30, 2003) Standard for Tests for Wind Resistant Asphalt Shingles with Sealed Tabs .....R905.2.4.1.1

**Reason for Texas Revision:**

The proposal accomplishes several objectives. First, in Section R905.2.4.1, the proposal clarifies that shingles tested in accordance with ASTM D 3161 Class F, which is 110 mph requirement, are applicable to installations in the Inland II, Inland I, and Seaward Zone. Also in Section R905.2.4.1, the proposal requires that shingle wrappers state that the product was tested to ASTM D 3161 with a Class F rating. Note: The Class F designation, which is a 110 mph requirement, is specified in ASTM D 3161. Second, in Section R905.2.4.1.1, the proposal provides for alternative test methods. This section was not included in the 2006 International Residential Code. The proposed alternative test methods include testing the shingles to ASTM D 6381 and UL 2390, or testing to ASTM D 7158 which references both ASTM D 6381 and UL 2390. The option to test to either criteria is specified to provide options to the asphalt shingle manufacturers who may chose to label compliance with either ASTM D 3161/UL 2390 or simply ASTM D 7158. The alternative test method section references Table 905.2.4.1. The new table references the three construction zones that are a part of the TDI windstorm program and indicates the wind classification (either Class G, which is 120 mph or Class H, which is 150 mph) that the shingles must be tested to in order to be used in each construction zone. Note: The Class G and Class H designations are specified in ASTM D 7158 and in the UL Online Certifications Directory (TGAH.GuidelInfo "Prepared Roof Covering Materials, Asphalt Shingle Wind Resistance"; See attached sheet). Section R905.2.6 was modified to achieve consensus with the Asphalt Roofing Manufacturers Association (ARMA) guidelines, where roof slopes exceeding 21 units vertical in 12 units horizontal (175 percent slope) shall be installed as required by the manufacturer.

**For Texas Department of Insurance use only:**

**Item Number:** \_\_\_\_\_

**Page**   4   **of**   4