

# TEXAS DEPARTMENT OF INSURANCE

Engineering Services / MC 103-3A 333 Guadalupe Street P.O. Box 149104 Austin, Texas 78714-9104  
Phone No. (512) 322-2212 Fax No. (512) 463-6693 TDI website: www.tdi.state.tx.us

---

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

Name: Engineering Staff \_\_\_\_\_ Date: June 14, 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:** 1504.1.1, 1609.5.2, Chapter 35, 1507.2.7 \_\_\_\_\_  
**Table:** 1504.2.1 \_\_\_\_\_  
**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.

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

**Item Number:** \_\_\_\_\_  
BCAC Form 100-99 Amended January 1, 2005

**Page 1 of 5**

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

---

- 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.*

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

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

BCAC Form 100-99 Amended January 1, 2005

**Page**   2   **of**   5

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

---

**Modify test as follows:**

**1504.1.1 Wind resistance of asphalt shingles.** Asphalt shingles shall be installed in accordance with Section 1507.2.7. For roofs located where the basic wind speed in accordance with Figure 1609 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 1504.1.1.1.1, 1609.5.2.

1504.1.1.1 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 1504.1.1.1.

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 buildings less than 60 feet (18 288 mm) high 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 1504.1.1.1 and reference UL 2390/ASTM D 6381 or ASTM D 7158.

**1504.2 Wind resistance of clay and concrete tile.** Clay and concrete tile roof coverings shall be connected to the roof deck in accordance with Chapter 16.

~~1504.2.1 Alternative test method.~~ ~~Testing the acceptability of special fastening methods using the methodology in this section is permitted. 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. Shingles passing this test shall be considered suitable for roofs located where the basic wind speed per Figure 1609 is as given in Table 1504.2.1.~~

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

~~Classification by this method applies to buildings less than 60 feet (18 288) high 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 and reference UL 2390/ASTM D 6381.~~

**TABLE 1504.2.1  
ROOF COVERING CLASSIFICATION  
USING ALTERNATIVE METHOD**

<b>Maximum Basic Wind Speed (mph)</b>	<b>ASTM D 6381 Classification</b>
90	Class D
120	Class G
150	Class H

**Add table as follows:**

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

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

**Page**  3  **of**  5

**TABLE 1504.1.1.1**  
**ROOF COVERING CLASSIFICATION**  
**USING ALTERNATIVE TEST METHODS**

<u>TDI Construction Zone</u>	<u>ASTM D 6381/UL 2390 or ASTM D 7158 Wind Classification</u> <sup>1</sup>
<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 ~~test text~~ as follows:**

1507.2.7 Attachment. Asphalt shingles shall have the minimum number of fasteners required by the manufacturer and Section 1504.1. 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 21 units vertical in 12 units horizontal (175 percent slope), asphalt shingles shall be installed in accordance with the manufacturer's printed installation instructions for steep-slope application.

**1609.5.2 Roof coverings.** Rover coverings shall comply with Section 1609.5.1.

**Exception:** Rigid tile roof coverings that are air permeable and installed over a roof deck complying with Section 1609.5.1 are permitted to be designed in accordance with Section 1609.5.3.

~~Asphalt shingles installed over a roof deck complying with Section 1609.5.1 shall be tested to determine the resistance of the sealant to uplift forces using ASTM D 6381.~~

~~Asphalt shingles installed over a roof deck complying with Section 1609.5.1 are permitted to be designed using UL 2390 to determine appropriate uplift and force coefficients applied to the shingle.~~

**CHAPTER 35**  
**REFERENCED STANDARDS**

**ASTM**

D 7158-05 Standard Test Method for Wind Resistance of Sealed Asphalt Shingles (Ulpift Force/Uplift Resistance Method).....1504.1.1.1

Reason for Texas Revision:

The proposal accomplishes several objectives. First, in Section 1504.1.1, the proposal clarifies that shingles tested in accordance with ASTM D 3161 Class F, are applicable to installations in the Inland II, Inland I, and Seaward Zone. Also in Section 1504.1.1, 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 1504.1.1.1, the proposal provides for alternative test methods. This section was incorrectly placed in Section 1504.2.1 of the IBC, which is a subsection of clay and concrete roof tiles. The incorrectly placed section has been deleted and moved to the correct section under 1504.1.1 for shingles. 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

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

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

**Page**  4  **of**  5

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

---

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 reference Table 1504.1.1.1. Table 1504.1.1.1 replaces Table 1504.2.1. 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.GuideInfo "Prepared Roof Covering Materials, Asphalt Shingle Wind Resistance"; See attached sheet). Finally, the proposal deletes the reference to Section 1609.5.2 originally located in Section 1504.1.1 and also deletes the test criteria for shingles specified in Section 1609.5.2. This was done since the new section 1504.1.1.1 specifies the alternative test criteria for shingles, which would have simply been repeated in Section 1609.5.2. Section 1507.2.7 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), shingles shall be installed as required by the manufacturer.

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

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

BCAC Form 100-99 Amended January 1, 2005

**Page**   5   **of**   5