

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 Residential Code _____
Section: R613.9 _____
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.

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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 30th day before the date of a scheduled advisory committee meeting for the proposal to be considered at that meeting.

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R613.9 Mullions occurring between individual window and door assemblies.

R613.9.1 Mullions. Mullions or mulled fenestration assemblies shall be tested by an approved testing laboratory in accordance with either AAMA 450, or ASTM E 330, or shall be engineered in accordance with AAMA 450 using accepted engineering practice. Mullions tested as stand-alone units or qualified by engineering shall use performance criteria cited in Sections R613.9.2, R613.9.3 and R613.9.4. Mullions qualified by an actual test of an entire assembly shall comply with Sections R613.9.2 and R613.9.4.

R613.9.2 Load transfer. Mullions shall be designed to transfer the design pressure loads applied by the window and door assemblies to the rough opening substrate.

R613.9.3 Deflection. Mullions shall be capable of resisting the design pressure loads applied by the window and door assemblies to be supported without deflecting more than $L/175$, where L is the span of the mullion in inches.

R613.9.4 Structural safety factor. Mullions that are tested by an approved testing laboratory shall be capable of resisting a load of 1.5 times the design pressure loads applied by the window and door assemblies to be supported. ~~without exceeding the appropriate material stress levels. If tested by an approved laboratory,~~ the 1.5 times the design pressure load shall be sustained for 10 seconds, and the permanent deformation shall not exceed 0.4 percent of the mullion span after the 1.5 times design pressure load is removed. Mullions that are qualified by engineering shall be capable of resisting the design pressure loads applied by the window and door assemblies to be supported without exceeding the allowable stress of the mullion elements.

Reason for Texas Revision:

This Texas Revision accomplishes several things.

First, it permits a mulled window or door assembly to be evaluated in accordance with ASTM E 330. This provides an additional option to the product manufacturer. This option would be used if a manufacturer has already tested their individual window and or door assemblies and now wishes to have them mulled together. The test evaluates the structural performance of the mullion and measures the deflection of the mulled assembly to make sure it is within the limits specified in Section R613.9.4.

Second, in Section R613.9.4, it separates the applied load requirements for mulled assemblies that are tested in a laboratory from those required for mullions that are qualified by engineering. It also stipulates that mullions that are qualified by engineering be capable of resisting the applied load without exceeding the allowable stress levels. As currently written, mullions that are qualified by engineering are required to resist an applied load of 1.5 times the design pressure and must not exceed appropriate material stress levels. The phrase "appropriate material stress levels" is not clear. In AAMA 450-00, Section 8.5 provides guidelines for evaluating mullions by calculation. Section 8.5.4 indicates that the extreme fiber bending stress of the mullion be evaluated using the design pressure load....and shall be shown not to exceed the allowable fiber stress. In AAMA 103-05, Procedural Guide for Certification of Window and Door Assemblies, Section 2.9.3 states that the stress calculated shall not be greater than the allowable stress. Finally, the engineered mullion would simply be over-designed if the mullion had to resist the test load (1.5 times the design load) without exceeding the allowable stress. This section of the proposed change simply permits for a more economical mullion design when evaluated using calculations.

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