TEXAS DEPARTMENT OF INSURANCE

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PRODUCT EVALUATION Effective Date: January 1, 2013
MU-17

*The following product has been evaluated for compliance with the wind loads specified in the **International Residential Code (IRC)** and the **International Building Code (IBC)**. This product shall be subject to reevaluation **January 2017**.*

This product evaluation is not an endorsement of this product or a recommendation that this product be used. The Texas Department of Insurance has not authorized the use of any information contained in the product evaluation for advertising, or other commercial or promotional purpose.

This product evaluation is intended for use by those individuals who are following the design wind load criteria in Chapter 3 of the IRC and Section 1609 of the IBC. The design loads determined for the building or structure shall not exceed the design load rating specified for the products shown in the limitations section of this product evaluation. This product evaluation does not relieve a Texas licensed engineer of his responsibilities as outlined in the Texas Insurance Code, the Texas Administrative Code and the Texas Engineering Practice Act.

Mulled Window Assemblies (Using Series 6100/8100/9100 Aluminum Mullions) for Vinyl Windows, Non-impact Resistant and Impact Resistant, manufactured by:

Ply Gem Window Group
433 North Main Street
Rocky Mount, Virginia 24151
Telephone: (800) 999 - 8400

will be acceptable in designated catastrophe areas along the Texas Gulf Coast when installed in accordance with the manufacturer's installation instructions and this product evaluation.

PRODUCT DESCRIPTION

This evaluation report is for mulled window assemblies (using Series 6100/8100/9100 aluminum mullions) for vinyl windows manufactured by Ply Gem Window Group. The mulled window assemblies evaluated in this report are for impact resistant and non-impact resistant windows.

This evaluation report is for mulled window assemblies using individual vinyl window products manufactured by Ply Gem Group Window Group that are currently listed in Texas Department of Insurance (TDI) product evaluation reports.

The mulled assembly consists of individual window units that are secured to the mullions described in this evaluation report. The mullions can be installed vertically (for side by side units) or horizontally (for stacked units). The mullion is secured directly to the rough opening of the window and can be attached to wood, concrete, masonry, aluminum, or steel substrates.

- Wood – minimum Spruce-Pine-Fir dimension lumber
- Concrete – minimum 2,700 psi compressive strength
- Masonry – Conforms to ASTM C-90, Grade N, Type 1 or greater
- Steel – minimum 18 gauge, 33 ksi
- Aluminum – 6063-T5 (minimum 0.092" thick); 6063-T6 (minimum 0.076" thick)

The frames of the individual window units are secured to the extruded aluminum mullion tube using minimum No. 10 x 1" self-drilling screws. Extruded aluminum mullion connector clips are used to secure the aluminum mullion tube to the wall framing.

LIMITATIONS

Design Drawings: The mulled window assembly shall be constructed and installed in accordance with the following design drawings:

- Drawing No. PGW080, sheets 1 through 3 of 3, titled "Ply Gem Windows Series 6100/8100/9100 Aluminum Vertical Mullion," dated February 15, 2012, signed and sealed by Alexis Spyrou, PE on February 20, 2012. The stated drawings will be referred to as "Approved Drawings" in this evaluation report. A copy of the approved drawings shall be available at the job site.

- Drawing No. PGW081, sheets 1 through 4 of 4, titled "Ply Gem Windows Series 6100/8100/9100 Aluminum Horizontal Mullion," dated February 15, 2012, signed and sealed by Alexis Spyrou, PE on February 20, 2012. The stated drawings will be referred to as "Approved Drawings" in this evaluation report. A copy of the approved drawings shall be available at the job site.

Design Pressure Rating: The design pressure rating for the mulled window assembly is dependant on the mullion load rating (based on the dimensions of the individual windows in the assembly and whether the mullion has steel reinforcement) and the design pressure rating for the individual windows in the mulled assembly. Refer to the approved drawings to determine the mullion load rating for the mulled assembly based on the configuration of the assembly.

Maximum Sizes: The height and width of each individual window in the mulled window assembly shall not exceed the maximum allowable height and width specified on the certification program labels for the individual windows. The maximum allowable dimensions for windows in the mulled window assembly shall be as specified on the approved drawings.

Vertical Mullions for Twin Windows: The following procedure should be used to determine the design pressure rating for the mulled window assembly:

1. Determine the individual window width and the window height (vertical mull span) for the mulled window assembly. Refer to the mullion configuration sketch on the approved drawing. NOTE: In no case shall the maximum allowable dimensions of the individual windows, as specified on the certification program labels and in the TDI product evaluation reports, exceed the window dimensions in the approved drawings.

2. Using the approved drawings, select the appropriate table. In the first column of the table, locate the window height (vertical mull span). In the first row of the table, locate the width of an individual window. At the intersection of the row containing the vertical mull span and the column containing the window width, read the mullion load rating (in PSF).

3. Review the design pressure rating on the certification program label and in the TDI product evaluation report for each individual window of the mulled assembly.

4. If the design pressure rating for each individual window of the mulled assembly is greater than the mullion load rating determined from the table in the approved drawing, then the design pressure rating of the mulled assembly is the design pressure capacity determined from the table in the approved drawing.

5. If the design pressure rating for any of the individual windows is less than the mullion load rating determined from the table in the approved drawing, then the design pressure rating of the mulled assembly shall be the design pressure rating of the lowest rated individual window in the assembly.

Horizontal Mullions for Single Windows with Transom: The following procedure should be used to determine the design pressure rating for the mulled window assembly:

1. Determine the window height, the transom height, and the window width (horizontal mull span) for the mulled window assembly. Refer to the mullion configuration sketch on the approved drawing. NOTE: In no case shall the maximum allowable dimensions of the individual windows, as specified on the certification program labels and in the TDI product evaluation reports, exceed the window dimensions in the approved drawings.

2. Using the approved drawings, select the appropriate table. In the first two columns of the table, locate the window height and the transom. In the first row of the table, locate the width of the window (horizontal mull span). At the intersection of the row containing the window height and transom height and the column containing the window width (horizontal mull span), read the mullion load rating (in PSF).

3. Review the design pressure rating on the certification program label and in the TDI product evaluation report for each individual window of the mulled assembly.

4. If the design pressure rating for each individual window of the mulled assembly is greater than the mullion load rating determined from the table in the approved drawing, then the design pressure rating of the mulled assembly is the design pressure capacity determined from the table in the approved drawing.

5. If the design pressure rating for any of the individual windows is less than the mullion load rating determined from the table in the approved drawing, then the design pressure rating of the mulled assembly shall be the design pressure rating of the lowest rated individual window in the assembly.

Horizontal Mullions for Twin Windows with Transom: The following procedure should be used to determine the design pressure rating for the mulled window assembly:

1. Determine the window height, the transom height, and the twin window width (horizontal mull span) for the mulled window assembly. Refer to the mullion configuration sketch on the approved drawing. NOTE: In no case shall the maximum allowable dimensions of the individual windows, as specified on the certification program labels and in the TDI product evaluation reports, exceed the window dimensions in the approved drawings.

2. Using the approved drawings, select the appropriate table. In the first two columns of the table, locate the window height and the transom. In the first row of the table, locate the width of the twin window (horizontal mull span). At the intersection of the row containing the window height and transom height and the column containing the twin window width (horizontal mull span), read the mullion load rating (in PSF).

3. Review the design pressure rating on the certification program label and in the TDI product evaluation report for each individual window of the mulled assembly.

4. If the design pressure rating for each individual window of the mulled assembly is greater than the mullion load rating determined from the table in the approved drawing, then the design pressure rating of the mulled assembly is the design pressure capacity determined from the table in the approved drawing.

5. If the design pressure rating for any of the individual windows is less than the mullion load rating determined from the table in the approved drawing, then the design pressure rating of the mulled assembly shall be the design pressure rating of the lowest rated individual window in the assembly.

Impact Resistance: The mullions can be used with either non-impact resistant or impact resistant windows.

If the mullions are used with non-impact resistant windows, then the mulled window assemblies will need to be protected with an impact protective system when installed in areas where windborne debris protection is required.

If the mullions are used with impact resistant windows, then the mulled window assemblies will not need to be protected with an impact protective system. Refer to the TDI evaluation reports for each of the windows in the mulled assembly to determine the locations where the mulled window assemblies can be used (ex. Inland I zone only or Inland I and Seaward zones).

Product Identification: A certification program label (NAMI) will be affixed to each individual window of the mulled window assembly. Refer to the TDI evaluation report for each individual window in the mulled window assembly for the information that must be specified on the certification program label. These certification program labels are for the performance characteristics of the individual windows in the mulled window assembly. The design pressure rating for the mulled window assembly is based upon the lowest common design pressure amongst the windows and mullions that are a part of the mulled window assembly.

INSTALLATION INSTRUCTIONS

General: The mulled window assembly shall be installed in accordance with the manufacturer's installation instructions, the approved drawings, and this evaluation report. Detailed drawings and installation instructions are available from the manufacturer.

Attachment of Window Frames to Mullions: The window frames shall be anchored to the aluminum mullions with minimum No. 10 x 1" self-drilling screws. The fasteners shall penetrate through the window frame and into and through the aluminum mullion. The fasteners shall be long enough such that a minimum of three (3) threads protrude through the opposite wall of the aluminum mullion. The spacing of the fasteners shall be as specified on the approved drawings.

Attachment of Vertical Mullions to Horizontal Mullions: Vertical mullions shall be secured to horizontal mullions with two (2) No. 10 x 1" TEK screws through the screw splines. Refer to the detail in the approved drawings.

Attachment of Mulled Assembly to Wall Framing: The requirements for the wall framing shall be as specified in the TDI evaluation reports for the individual windows and as specified on the approved drawings. The mulled window assembly shall be secured to the wall framing using the type, size, quantity, and spacing of fasteners as specified in the TDI evaluation reports for the individual windows. As a point of reference for locating fasteners at window corners, where a window unit joins with a mullion shall be considered a corner location for a window.

Attachment of Mullions to Wall Framing: The mullions shall be secured to the wall framing using the mullion clips as shown in the approved drawings. The mullion clips shall be secured to the mullion and to the wall framing as specified on the approved drawings.

Note: The manufacturer's installation instructions shall be available on the job site during installation. The approved drawings shall be available on the job site during installation. All fasteners shall be corrosion resistant as specified in the International Residential Code (IRC), the International Building Code (IBC), and the Texas Revisions.