

TEXAS DEPARTMENT OF INSURANCE

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PRODUCT EVALUATION CWSF-07

Effective December 1, 2009

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 March 2012.

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.

IG500/IG600 Aluminum Window System, Storefront Framing System, Impact Resistant,
manufactured by

United States Aluminum Corporation
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Waxahachie, Texas 75165
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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

The IG500/IG600 window wall framing system is an aluminum frame system used for commercial storefront installations. The aluminum window wall framing system is comprised of different configurations of fixed windows. The IG500 uses laminated glass units. The IG600 used insulating glass units. The perimeter frame members are 2 ½" x 5" and the vertical and horizontal mullions are 2 ½" x 5". The aluminum window wall framing system evaluated in this report is an impact resistant storefront framing system. This product evaluation report is for an aluminum window wall framing system based on the following tested construction:

General Description:

System 1: IG500/IG600 Aluminum Window Wall Framing System; Comprised of three fixed window assemblies mullied together along their side jambs (vertical mull). Each window assembly is comprised of two fixed windows, stacked (horizontal mull), one with a daylight opening size of 57 ½" x 96" and the other with a daylight opening size of 57 ½" x 15 7/8". The overall dimension is 182" x 120".

Glazing Description:

System	Glass Construction ¹	Glazing Method ²
1	IG500: SG-1 IG600: IG-1	GM-1 or GM-2

Note: ¹ See the "Glass Construction Key" for the glazing construction.

² See the "Glazing Method Key" for the glazing method description.

Glass Construction Key:

SG-1: Single glazed with a laminated glass unit. The laminated glass unit is comprised of two $\frac{1}{4}$ " heat strengthened glass lites with a 0.090" DuPont SentryGlas Plus interlayer. The glass thickness used in the laminated glass unit of the tested assembly and in smaller assemblies shall comply with ASTM E 1300-04.

IG-1: Insulating glass units. The insulating glass unit is comprised of a $\frac{1}{4}$ " heat strengthened glass lite and a laminated glass unit with a desiccant-filled aluminum spacer system. The laminated glass unit is comprised of two $\frac{1}{4}$ " heat strengthened glass lites with a 0.090" DuPont SentryGlas Plus interlayer. The glass thickness used in the insulating glass unit of the tested assembly and in smaller assemblies shall comply with ASTM E 1300-04.

Glazing Method Key:

GM-1: The laminated glass units and the insulating glass units are dry glazed using EPDM gaskets at the interior and exterior side of the laminated glass units and the insulating glass units.

GM-2: The laminated glass units and the insulating glass units are set from the exterior on glazing blocks and against a rubber gasket. The laminated glass units and the insulating glass units are wet glazed from the interior with Dow 995 silicone sealant along the perimeter.

Frame Construction: The frame head, side jambs, and subsill consist of extruded aluminum with various wall thickness. The frame members are secured together with screws. The door sill and the fixed lite sill consist of extruded aluminum and are secured to the subsill with screws.

Vertical Mullions: The vertical mullions consist of extruded aluminum with various wall thickness. The vertical mullions are secured to the frame members with screws.

Horizontal Mullions: The horizontal mullions consist of extruded aluminum with various wall thickness. The horizontal mullions are secured to the frame members and to vertical mullions with screws.

Reinforcement: The vertical mullions are reinforced with a continuous steel channel. The steel channel is secured to the mullions with screws.

Hardware Options: N/A

Product Identification: A label, provided by the manufacturer, will be affixed to the assembly. The label includes the manufacturer's name; the product name: IG500/IG600 Store Front Door System; the design pressure rating +/-65 psf; and the applicable standards: ASTM E 330, ASTM E 1886, and ASTM E 1996.

LIMITATIONS

Allowable dimensions:

System 1:

Overall Assembly Dimensions: 182" x 120"

Maximum Vertical Mullion Length: 120"

Maximum Horizontal Mullion Length: 60"

Maximum Daylight Opening Size: 57 $\frac{1}{2}$ " x 96"

Design pressures (DP):

System 1: ± 65.0 psf

Impact Resistance: These assemblies satisfy the Texas Department of Insurance's criteria for protection from windborne debris in both the **Inland I** and **Seaward** zones. These assemblies have passed Missile Level D specified in ASTM E 1996-04. These assemblies may be installed at any height on the structure as long as the design pressure rating for the assembly is not exceeded. These assemblies will not need to be protected with an impact protective system when installed in areas where windborne debris protection is required.

Acceptance of Smaller Assemblies: Assemblies with dimensions equal to or smaller than those specified above are acceptable within the limitations specified in this report.

Acceptance of Combined Assemblies: The assemblies listed in this evaluation report may be combined with assemblies listed in the TDI evaluation report for the **IG500/IG600 Aluminum Outswing Entrance Doors with Transom and Sidelites, Storefront Framing System** as long as the allowable dimensions of the individual windows within the assembly are not exceeded.

INSTALLATION INSTRUCTIONS

General: The assembly shall be prepared and installed in accordance with the manufacturer's recommended installation instructions. Detailed installation instructions and drawings are available from the manufacturer.

Installation:

Wall Framing: The wall framing shall be either one of or a combination of the following:

- Wood: Minimum Southern Yellow Pine dimension lumber.
- Concrete: Pre-cast or cast-in-place. Minimum compressive strength of 3,000 psi.
- Concrete Masonry Units: Grout-filled, minimum 1,500 psi.
- Steel: Minimum 14 gauge.

Fasteners: The following anchors shall be used:

- Walls (Wood): $\frac{1}{4}$ " x $3\frac{1}{2}$ " flat head Tapcon. Minimum embedment depth of $1\frac{1}{2}$ inches.
- Walls (Concrete): $\frac{1}{4}$ " x $3\frac{1}{2}$ " flat head Tapcon. Minimum embedment depth of $1\frac{1}{4}$ inches.
- Walls (Concrete Masonry Units): $\frac{1}{4}$ " x $3\frac{1}{2}$ " flat head Tapcon. Minimum embedment depth of $1\frac{1}{4}$ inches.
- Walls (Steel): $\frac{1}{4}$ " x $2\frac{1}{2}$ " flat head Tek screw. Fastener must penetrate a minimum of 3 pitches of thread beyond the steel framing material.
- Sill (Concrete): $\frac{3}{8}$ " x $2\frac{1}{2}$ " Powerbolt. Minimum embedment depth of 2 inches.

System 1: The assembly shall be secured to the wall framing with the fasteners specified in this evaluation report using a single row of fasteners as follows:

- Sill:
 - Windows: A fastener shall be located approximately 6 inches from each corner and evenly spaced at approximately 13 inches on center.
 - Vertical mullion (intermediate between windows): One (1) fastener on either side, spaced 3 inches apart.
- Side Jamb: A fastener shall be located approximately 6 inches from each corner and evenly spaced at approximately 15 inches on center.

- Head:
 - Windows: A fastener shall be located approximately 6 inches from each corner and evenly spaced at approximately 13 inches on center.
 - Vertical mullion (intermediate member between the sidelite and doors): One (1) fastener on either side spaced approximately 6 inches apart.

Note: The manufacturer's installation instructions 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.