TEXAS DEPARTMENT OF INSURANCE

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PRODUCT EVALUATION May 1, 2011
DR-346

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 May 2015.

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.

Steel Edge Steel Doors, Inswing and Outswing, Hinged, Glazed, Impact Resistant, manufactured by

Masonite International
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Suite 950
Tampa, FL 33609
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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

General Description: The steel edge steel doors evaluated in this report are inswing and outswing, impact resistant, glazed, hinged doors. The doors may be installed with or without sidelites. This product evaluation report includes steel edge steel doors based on the following:

System	Product	Swing	Configuration	Skin Thickness (inches)	Overall Size (inches)	Design Pressure (psf)
1	Steel Glazed Double Doors w/ Sidelites	IS	OXXO	0.017	148 ½ x 81 ¾	+50.5/-50.5
2	Steel Glazed Double Doors w/ Sidelites	OS	OXXO	0.017	148 ½ x 80 ¾	+50.5/-50.5
3	Steel Glazed Double Doors w/ Sidelites	IS	OXXO	0.020	148 ½ x 97 ¾	+40/-45
4	Steel Glazed Double Doors w/ Sidelites	OS	OXXO	0.020	148 ½ x 96 ¾	+45/-40

Frame Construction:
The jambs and head are constructed of 4.5625" wide x 1.220" thick wood sections. The head and jamb corners are coped, butted, and fastened using three (3) 2" long wire staples with a 0.4375" crown at each corner. In cases where a center mullion is needed, the mullion is constructed by fastening the jambs back-to-back together using 1" x 0.5" corrugated fasteners placed 3 inches from each end and 7 inches on center. The mullion is mortised to receive the hinges. Out-swing units utilize an aluminum bumper threshold measuring 1" high minimum and kerfed to receive compression weather striping. In-swing units utilize an adjustable aluminum threshold measuring 1.25" high. Out-swing and in-swing thresholds are attached to the jambs with two (2) wood screws at each end. All units utilize a 0.625" aluminum astragal kerfed to receive weather stripping with 0.312" diameter slide bolts located at the top and at the bottom.

Panel Construction:
Panels are constructed of steel facings with a continuous roll-formed vertical edge for the latch and hinge stiles. The inner and outer door faces are interlocked together using a PVC thermal break. The hinge stile utilizes a 12 gauge steel reinforcement plate attached to the hinge side of the door. A wood top rail and composite bottom rail are utilized. The interior cavity includes a poured-in-place rigid polyurethane foam core with a 2.0 pcf density. Inactive doors utilize a wood particle lock reinforcement block in the lock area and the active door panels utilize a plastic lock ring at each lock bore.

Sidelite Slab Construction:
The door face material is constructed of steel with roll-formed edge to interlock with wood stile and rails forming the mechanical attachment. The sidelites are constructed from finger jointed stiles on both sides, a wood top rail, and a composite bottom rail. The door utilizes a poured-in-place polyurethane foam core with a 2.0 pcf density.

Component Dimensions of Assemblies:

Systems 1 & 2:

Doors:

Active Panel Size	Inactive Panel Size	Door Panel Glass Size
35 3/4" x 79 1/4"	36 3/8" x 79 1/4"	21" x 63"

Sidelites:

Sidelite Panel Size	Sidelite Panel Glass Size
35 3/4" x 79 1/4"	21" x 63"

System 3 & 4:

Doors:

Active Panel Size	Inactive Panel Size	Door Panel Glass Size
35 3/4" x 95 1/4"	36 3/8" x 95 1/4"	21" x 79"

Sidelites:

Sidelite Panel Size	Sidelite Panel Glass Size
35 3/4" x 95 1/4"	21" x 79"

Glazing Description:

System	Glass Construction [1]	Glazing Method [2]
1 through 4	IG-1	GM-1

Note: [1] See the "Glass Construction Key" for the glass construction.

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

Glass Construction Key:
IG-1: Sealed insulating glass units. The insulating glass units are comprised of a laminated glass unit and a double strength (1/8 ") fully tempered glass lite separated by a desiccant-filled metal spacer system. The laminated glass unit is comprised of two double strength (1/8 ") annealed glass lites with a 0.090 PVB interlayer. The glass thickness and type used in the insulating glass unit shall comply with ASTM E 1300-04.

Glazing Method Key:
GM-1: The insulating glass units are backbedded to a ASA-Polycarbonate glazing frame with Dow Corning 832 glazing sealant.

Reinforcements: N/A

Hardware:

Systems 1 and 2:

- Kwikset Series 400 lockset
- Kwikset Series 980 deadbolt
- Hager 4 inch butt type hinges; Three (3) per door; Secured to the door with four (4) No. 10 x 1/2 " screws and secured to the side jambs with two (2) No. 10 x 5/8 " screws and two (2) No. 10 x 2 1/2 " screws.

Systems 3 and 4:

- Kwikset Series 400 lockset
- Kwikset Series 980 deadbolt
- Hager 4 inch butt type hinges; Three (3) per door; Secured to the door with four (4) No. 10 x 1/2 " screws and secured to the side jambs with two (2) No. 10 x 5/8 " screws and two (2) No. 10 x 2 1/2 " screws.
- Don Jon 8" surface bolts; Two (2) required; Located at the top and bottom of the active door; For the outswing doors, four (4) No. 10 x 1 1/4 " screws in each surface bolt into the set bolt (3/8 " x 3/4 " nylon spacer used). For the inswing doors; four (4) No. 10 x 1" screws in each surface bolt into the set bolt.

Product Identification: A label by Masonite will be affixed to each assembly. The label includes the manufacturer's name; product name; design pressure ratings; maximum size tested; configurations; and that the product was tested to ASTM E 330, and ASTM E 1886 and ASTM E 1996, large missile impact rated.

LIMITATIONS

Design Pressures: See the table in the General Description section for limitations on maximum dimensions and the allowable design pressure ratings for each door assembly.

Impact Resistance:

Systems 1 through 4: These door assemblies satisfy the Texas Department of Insurance's criteria for protection from windborne debris in the **Inland I** and the **Seaward zone**. The door assemblies passed the equivalent of Missile Level D specified in ASTM E 1996-04. The door assemblies may be installed at any height on the structure as long as the design pressure rating for the assemblies is not exceeded. These door assemblies will not need to be protected with an impact protective system.

Acceptance of Smaller Systems: Door assemblies with dimensions equal to or smaller than those specified are acceptable within the limitations of this report.

INSTALLATION INSTRUCTIONS

General: The door assemblies shall be installed according to the manufacturer's installation instructions and this product evaluation. The wood framing members shall be minimum Southern Yellow Pine lumber (G≥0.55). Fasteners shall be long enough to penetrate a minimum of ½" into the wall framing.

Installation:

Systems 1 and 2 (Double Doors with Sidelites)

Frame:

Jambs: No. 10 x 2 ½" long wood screws located approximately 6 inches from each corner and approximately 14 inches on center for a total of (6) screws each jamb.

Head and sill: No. 10 x 2 ½" long wood screws in the following locations:

One (1) at 6 inches from each outside corner
One (1) at 3 inches and 6 inches on each side of the mullion
One (1) at 3 inches and 6 inches on each side of the astragal
One (1) at the centerline of the active door panels

NOTE: If the door frame is attached to concrete rather than wood framing members, then a 3/16" diameter flat head Tapcon concrete anchor may be substituted for the No. 10 x 2 ½" long screws noted above. The Tapcon anchor must have a minimum embedment of 1 ¼" into the concrete.

Astragal Strike:

Strike plate to head – Two (2) No. 10 x 2 ½" long screws

Sill retainer hole – drill through sill and into the structure deep enough for a 1 3/8 inch astragal retainer slide bolt throw.

Strikes:

Lockset – Two (2) No. 10 x 2" long wood screws
Deadbolt – Two (2) No. 10 x 2" long wood screws

Systems 3 and 4 (Double Doors with Sidelites)

Frame:

Jambs: No. 10 x 2 ½" long wood screws located approximately 6 inches from each corner and approximately 17 inches on center for a total of (6) screws each jamb.

Head and sill: No. 10 x 2 ½" long wood screws in the following locations:

One (1) at 6 inches from each outside corner
One (1) at 3 inches and 6 inches on each side of the mullion
One (1) at 3 inches and 6 inches on each side of the astragal
One (1) at the centerline of the active door panels

NOTE: If the door frame is attached to concrete rather than wood framing members, then a 3/16" diameter flat head Tapcon concrete anchor may be substituted for the No. 10 x 2 ½" long screws noted above. The Tapcon anchor must have a minimum embedment of 1 ¼" into the concrete.

Astragal Strike:

Strike plate to head – Two (2) No. 8 x 2 ½" long screws

Sill retainer hole – drill through sill and into the structure deep enough for a 1 3/8 inch astragal retainer slide bolt throw.

Strikes:

Lockset – Two (2) No. 8 x 2 ½ " long wood screws

Deadlock – Two (2) No. 8 x 2 ½ " long wood screws

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