

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

PRODUCT EVALUATION DR-276

Effective October 1, 2007

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 3 years after the effective date.

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.

**6'8" "Smooth Star", "Fiber Classic", "Classic Craft" and "Classic Craft Rustic" Opaque Fiberglass Single & Double Doors with and without Sidelites, Impact, Inswing / Outswing, manufactured by Therma-Tru Corporation
118 Industrial Drive
Edgerton, OH 43517
Tel. (419)298-1740**

will be acceptable in designated catastrophe areas along the Texas Gulf Coast when installed in accordance with engineering drawings TX-3165, TX-3166, TX-3167, TX-3168, TX-3169, and TX-3170 (dated 12-15-06), signed & sealed by Wendell W. Haney, P.E. on 2-14-07, manufacturer's installation instructions, and this product evaluation report.

PRODUCT DESCRIPTION

This product consists of opaque fiberglass side hinged doors hung in wood frames. This product evaluation report is for door assemblies based on tested constructions to provide the following assemblies:

General Description:

Assembly	Description	Label Rating
1	3'0"x6'8" Opaque Fiberglass Single Door, Radius Top, Inswing / Outswing; (X)	Inswing +90 / -95 PSF Outswing +90 / -95 PSF
2	3'0"x6'8" Opaque Fiberglass Single Door, Inswing / Outswing; (X)	Classic Craft Inswing +100 / -100 PSF Classic Craft Outswing +100 / -100 PSF Classic Craft Rustic Inswing +90 / -90 PSF Classic Craft Rustic Outswing +90 / -90 PSF Fiber Classic Inswing +75 / -75 PSF Fiber Classic Outswing +80 / -80 PSF Smooth Star Inswing +75 / -75 PSF Smooth Star Outswing +80 / -80 PSF
3	4'2"x6'8" Opaque Fiberglass Single Door with Sidelite, Inswing / Outswing; (XO, OX)	Inswing +65 / -65 PSF Outswing +65 / -65 PSF
4	5'4"x6'8" Opaque Fiberglass Single Door with Sidelites, Inswing / Outswing; (OXO)	Inswing +65 / -65 PSF Outswing +65 / -65 PSF
5	6'0"x6'8" Opaque Fiberglass Double Door, Inswing / Outswing; (XX)	Inswing +70 / -70 PSF Outswing +70 / -70 PSF
6	8'4"x6'8" Opaque Fiberglass Double Door with Sidelites, Inswing / Outswing; (OXXO)	Inswing +70 / -70 PSF Outswing +70 / -70 PSF

Product Dimensions:

Assembly	Overall Frame Assembly Size	Fixed/Operable Panel Sizes
1	37 ³ / ₄ " x 82 ¹ / ₄ "	Door 35 ¹⁵ / ₁₆ " x 79 ¹ / ₄ "
2	37 ³ / ₄ " x 82 ¹ / ₄ "	Door 35 ¹⁵ / ₁₆ " x 79 ¹ / ₄ "
3	54 ³ / ₄ " x 82 ¹ / ₄ "	Door 35 ¹⁵ / ₁₆ " x 79 ¹ / ₄ " Sidelite 13 ³ / ₄ " x 79 ¹ / ₄ "
4	71 ³ / ₄ " x 82 ¹ / ₄ " (inswing) 68 ³ / ₄ " x 82 ¹ / ₄ " (outswing)	Door 35 ¹⁵ / ₁₆ " x 79 ¹ / ₄ " Sidelite 13 ³ / ₄ " x 79 ¹ / ₄ "
5	74 ⁵ / ₁₆ " x 82 ¹ / ₄ "	Door 35 ¹⁵ / ₁₆ " x 79 ¹ / ₄ "
6	105 ⁵ / ₁₆ " x 82 ¹ / ₄ "	Door 35 ¹⁵ / ₁₆ " x 79 ¹ / ₄ " Sidelite 13 ³ / ₄ " x 79 ¹ / ₄ "

Glazing Description:

Assembly	Glass Construction ¹	Glazing Method ²
3	IG-1 for Classic Craft IG-2 for Fiber Classic IG-3 for Smooth Star	GM-1 for Classic Craft GM-2 for Fiber Classic GM-3 for Smooth Star
4	IG-1 for Classic Craft IG-2 for Fiber Classic IG-3 for Smooth Star	GM-1 for Classic Craft GM-2 for Fiber Classic GM-3 for Smooth Star
6	IG-1 for Classic Craft IG-2 for Fiber Classic IG-3 for Smooth Star	GM-1 for Classic Craft GM-2 for Fiber Classic GM-3 for Smooth Star

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

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

Glazing Description Key:

IG-1: ³/₄" overall thick sealed insulating glass unit. The ³/₄" thick sealed insulating glass units are comprised of an interior lite of double strength (¹/₈" thick sheet of tempered glass and an exterior lite of double strength (¹/₈" tempered glass separated by a swiggle spacer system.

IG-2: 1" overall thick sealed insulating glass unit. The 1" thick sealed insulating glass units are comprised of an interior lite of double strength (¹/₈" thick sheet of tempered glass and an exterior lite of double strength (¹/₈" tempered glass separated by a swiggle spacer system.

IG-3: ¹/₂" overall thick sealed insulating glass unit. The ¹/₂" thick sealed insulating glass units are comprised of an interior lite of double strength (¹/₈" thick sheet of tempered glass and an exterior lite of double strength (¹/₈" tempered glass separated by a swiggle spacer system.

Glazing Method Key:

GM-1: The glass is set against silicone glazing compound backbedding on the interior and exterior lites. The lite frame is integrally formed into the sidelite skin.

GM-2: The glass is set from the interior side against silicone glazing compound backbedding on the interior and exterior lites. The PVC lite frame is screwed together with #9 self threading screws.

Glazing Method Key (cont.):

GM-3: The glass is set from the interior side against silicone glazing compound backbedding on the interior and exterior lites. The PVC lite frame is screwed together with #6 wood screws.

Frame Construction: The frame head, sill, and jambs consist of fingerjoint pine wood members. The frame corners are dado-cut and fastened together with (4) ½" crown, 2" long 16 ga. staples per corner at the head and sill.

Door Panel Construction:

"Smooth Star": The panel members consist of 0.070" minimum thickness fiberglass skins with PVC composite top & bottom rail, wood hinge stile and a LVL with oak cap latch stile. The door panel is filled with polyurethane foam, 2.0 lbs/ft³ minimum density. Embedded in the polyurethane foam is a perforated steel sheet with maximum perforated open area of 28.86%.

"Fiber Classic": The panel members consist of 0.070" minimum thickness fiberglass skins with PVC composite top & bottom rail, wood hinge stile and a LVL with oak cap latch stile. The door panel is filled with polyurethane foam, 2.0 lbs/ft³ minimum density. Embedded in the polyurethane foam is a perforated steel sheet with maximum perforated open area of 28.86%.

"Classic Craft": The panel members consist of 0.090" minimum thickness fiberglass skins with wood top rail and PVC composite bottom rail, LVL with oak cap hinge stile and a LVL with oak cap latch stile. The door panel is filled with polyurethane foam, 2.0 lbs/ft³ minimum density. Embedded in the polyurethane foam is a perforated steel sheet with maximum perforated open area of 28.86%.

"Classic Craft Rustic": The opaque panel members consist of 0.090" minimum thickness fiberglass skins with wood top rail, PVC composite bottom rail, LVL with oak cap hinge and latch stiles. The door panel is filled with polyurethane foam, 2.0 lbs/ft³ minimum density. Embedded in the polyurethane foam is a perforated steel sheet with maximum perforated open area of 28.86%.

Sidelite Panel Construction:

"Smooth Star": The panel members consist of 0.070" minimum thickness fiberglass skins with wood top & bottom rail, wood hinge stile and latch stile. The sidelite panel is filled with polyurethane foam, 2.0 lbs/ft³ minimum density. Sidelite panels are glazed with IG-3 glazing construction and GM-3 glazing method.

"Fiber Classic": The panel members consist of 0.070" minimum thickness fiberglass skins with wood top & bottom rail, wood hinge stile and latch stile. The sidelite panel is filled with polyurethane foam, 2.0 lbs/ft³ minimum density. Sidelite panels are glazed with IG-2 glazing construction and GM-2 glazing method.

"Classic Craft": The panel members consist of 0.090" minimum thickness fiberglass skins with wood top & bottom rail, wood hinge stile and latch stile. The sidelite panel is filled with polyurethane foam, 2.0 lbs/ft³ minimum density. Sidelite panels are glazed with IG-1 glazing construction and GM-1 glazing method (the lite frame is integrally formed into the sidelite skin).

Reinforcement:

Combination Mullion

On Inswing units only; the sidelite jamb to single door jamb combination mullion is reinforced with a 2X, Spruce-Pine-Fir minimum.

Hardware:

<u>Description</u>	<u>Location</u>
Kwikset 600 Series Deadbolt	38 1/2" from top of active panel.
Kwikset 200 Series Passage Lock	44" from top of active panel.
4" Butt Hinges	10 1/2" from top of active panel to centerline of top hinge and maximum 29 1/4" centerline to centerline.

Product Identification: A label will be affixed to the assembly. The label includes the manufacturer's name, size and configuration along with the design pressure rating of the assembly.

LIMITATIONS

Design pressures (DP):

Assembly	Overall Width (in.)	Overall Height (in.)	Design Pressure (psf)
1	37 3/4"	82 1/4"	Inswing +90 / -95 PSF Outswing +90 / -95 PSF
2	37 3/4"	82 1/4"	Classic Craft Inswing +100 / -100 PSF Classic Craft Outswing +100 / -100 PSF Classic Craft Rustic Inswing +90 / -90 PSF Classic Craft Rustic Outswing +90 / -90 PSF Fiber Classic Inswing +75 / -75 PSF Fiber Classic Outswing +80 / -80 PSF Smooth Star Inswing +75 / -75 PSF Smooth Star Outswing +80 / -80 PSF
3	54 3/4"	82 1/4"	Inswing +65 / -65 PSF Outswing +65 / -65 PSF
4	68 3/4" (inswing) 68 3/4" (outswing)	82 1/4" (inswing/outswing)	Inswing +65 / -65 PSF Outswing +65 / -65 PSF
5	74 5/16"	82 1/4"	Inswing +70 / -70 PSF Outswing +70 / -70 PSF
6	105 5/16"	82 1/4"	Inswing +70 / -70 PSF Outswing +70 / -70 PSF

Impact Resistance: The door panels satisfy the Texas Department of Insurance's criteria for protection from windborne debris in both the **Inland I zone** and the **Seaward zone**. The sidelite panels do not meet the Texas Department of Insurance's criteria for protection from windborne debris. The door panels will not need to be protected with an impact protective system but the sidelite panels must be protected with an impact protective system. The door systems may be installed at any height on the structure as long as the design pressure rating for the systems is not exceeded.

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

INSTALLATION INSTRUCTIONS

Assembly #1: 3068 Single Door, Opaque - Radius Top; X

Wall Framing: Minimum Spruce-Pine-Fir (SPG \geq 0.42).

Fasteners: Head, Sill and jambs: Minimum No. 10 x 2 $\frac{1}{2}$ " long PFH wood screws.

Attachment: Install in accordance with engineering drawing TX-3165 (dated 12-15-06), signed & sealed by Wendell W. Haney, P.E. on 2-14-07. The doors shall be mounted to the wood framing members. The fasteners shall penetrate through the door frame and into the wood framing members. If the sill is secured to a concrete foundation, then minimum $\frac{1}{4}$ " diameter concrete anchors shall be used. The concrete anchors shall embed a minimum of 1 $\frac{3}{8}$ " into the concrete.

Assembly #2: 3068 Single Door, Opaque; X

Wall Framing: Minimum Spruce-Pine-Fir (SPG \geq 0.42).

Fasteners: Head, Sill and jambs: Minimum No. 10 x 2 $\frac{1}{2}$ " long PFH wood screws.

Attachment: Install in accordance with engineering drawing TX-3166 (dated 12-15-06), signed & sealed by Wendell W. Haney, P.E. on 2-14-07. The doors shall be mounted to the wood framing members. The fasteners shall penetrate through the door frame and into the wood framing members. If the sill is secured to a concrete foundation, then minimum $\frac{1}{4}$ " diameter concrete anchors shall be used. The concrete anchors shall embed a minimum of 1 $\frac{3}{8}$ " into the concrete.

Assembly #3: 4268 Single Opaque Door with Sidelite; OX and XO

Wall Framing: Minimum Spruce-Pine-Fir (SPG \geq 0.42).

Fasteners: Head, Sill and jambs: Minimum No. 10 x 2 $\frac{1}{2}$ " long PFH wood screws.

Attachment: Install in accordance with engineering drawing TX-3167 (dated 12-15-06), signed & sealed by Wendell W. Haney, P.E. on 2-14-07. The doors shall be mounted to the wood framing members. The fasteners shall penetrate through the door frame and into the wood framing members. If the sill is secured to a concrete foundation, then minimum $\frac{1}{4}$ " diameter concrete anchors shall be used. The concrete anchors shall embed a minimum of 1 $\frac{3}{8}$ " into the concrete.

Assembly #4: 5468 Single Opaque Door with Sidelites; OXO

Wall Framing: Minimum Spruce-Pine-Fir (SPG \geq 0.42).

Fasteners: Head, Sill and jambs: Minimum No. 10 x 2 $\frac{1}{2}$ " long PFH wood screws.

Attachment: Install in accordance with engineering drawing TX-3168 (dated 12-15-06), signed & sealed by Wendell W. Haney, P.E. on 2-14-07. The doors shall be mounted to the wood framing members. The fasteners shall penetrate through the door frame and into the wood framing members. If the sill is secured to a concrete foundation, then minimum $\frac{1}{4}$ " diameter concrete anchors shall be used. The concrete anchors shall embed a minimum of 1 $\frac{3}{8}$ " into the concrete.

Assembly #5: 6068 Opaque Double Door; XX

Wall Framing: Minimum Spruce-Pine-Fir (SPG \geq 0.42).

Fasteners: Head, Sill and jambs: Minimum No. 10 x 2 $\frac{1}{2}$ " long PFH wood screws.

Attachment: Install in accordance with engineering drawing TX-3169 (dated 12-15-06), signed & sealed by Wendell W. Haney, P.E. on 2-14-07. The doors shall be mounted to the wood framing members. The fasteners shall penetrate through the door frame and into the wood framing members. If the sill is secured to a concrete foundation, then minimum $\frac{1}{4}$ " diameter concrete anchors shall be used. The concrete anchors shall embed a minimum of 1 $\frac{3}{8}$ " into the concrete.

I

Assembly #6: 8468 Opaque Double Door with Sidelites; OXXO

Wall Framing: Minimum Spruce-Pine-Fir (SPG \geq 0.42).

Fasteners: Head, Sill and jambs: Minimum No. 10 x 2 $\frac{1}{2}$ " long PFH wood screws.

Attachment: Install in accordance with engineering drawing TX-3170 (dated 12-15-06), signed & sealed by Wendell W. Haney, P.E. on 2-14-07. The doors shall be mounted to the wood framing members. The fasteners shall penetrate through the door frame and into the wood framing members. If the sill is secured to a concrete foundation, then minimum $\frac{1}{4}$ " diameter concrete anchors shall be used. The concrete anchors shall embed a minimum of 1 $\frac{3}{8}$ " into the concrete.

Note: The manufacturer's installation instructions and engineering drawings TX-3165, TX-3166, TX-3167, TX-3168, TX-3169, and TX-3170 (dated 12-15-06), signed & sealed by Wendell W. Haney, P.E. on 2-14-07, 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.