

TEXAS DEPARTMENT OF INSURANCE

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PRODUCT EVALUATION WIN-63

Effective October 1, 2010

*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 **February 2011**.*

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.

Glass Block Mortar Systems, Non-impact and Impact Resistant, manufactured by:

Pittsburgh Corning Corporation
800 Presque Isle Drive
Pittsburgh, Pennsylvania 15239-2799
Telephone: (800) 545-5001

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 glass block window systems evaluated in this report are site built window assemblies using a traditional mortar installation method. The glass block mortar system windows evaluated in this report are individual windows. The THICKSET 90 and the VISTABRIK systems listed in this evaluation report are impact resistant. The PREMIER system listed in this evaluation report is non-impact resistant. The following glass block mortar systems are applicable to this evaluation report:

General Description:

Description	Patterns	Impact Resistant
PREMIER	All Patterns	No
THICKSET 90	All Patterns	Yes
VISTABRIK	All Patterns	Yes

Product Dimensions:

Description	Nominal Block Dimensions	Face Thickness
PREMIER	12" x 12 x 4" and all other smaller face sizes	0.250" (0.375" for 12" x 12" x 4")
THICKSET 90	8" x 8" x 4" and all other smaller face sizes	0.750"
VISTABRIK	8" x 8" x 3" and all other smaller face sizes	3.00"

PREMIER and THICKSET 90 Glass Block Mortar System:

Mortar: The glass blocks shall be laid on Type S mortar joints per ASTM C 270.

Reinforcement: Ladder type, 9 gauge, 2" wide with butt-welded cross wires at 16 inches on center. Reinforcement shall be either hot dipped galvanized or stainless steel, available from Pittsburgh Corning Corporation. Placement is at horizontal joints only and at a spacing of no more than 16 inches on center vertically. NOTE: Placement of reinforcing for 12" x 12" x 4" glass block is at every horizontal joint.

Panel Anchors: The anchors shall be hot dipped galvanized 20 gauge perforated steel strips, 24" long by 1 3/4" wide, or stainless steel 22 gauge perforated strips, 16 inches long by 1 3/4" wide, both available from Pittsburgh Corning Corporation. Placement is at both side jambs and at the head.

Channels: The channels are 2" x 4 1/2" x 1/8" aluminum from Julius Blum & Co., Inc. or equivalent.

Expansion Material: Polyethylene type, 3/8" thick, available from Pittsburgh Corning Corporation. Placed at both the jamb and the head location.

Sealant: Silicone type sealant. The sealant is placed at the side jambs and at the head on both the exterior and interior sides.

Asphalt Emulsion: A water-based asphalt emulsion.

VISTABRIK Glass Block Mortar System:

Mortar: The glass blocks shall be laid on Type S mortar joints per ASTM C 270.

Reinforcement: Ladder type, 9 gauge, 1 5/8" wide with butt-welded cross wires at 16 inches on center. Reinforcement shall be either hot dipped galvanized or stainless steel, available from Pittsburgh Corning Corporation. Placement is at horizontal joints only and at a spacing of no more than 16 inches on center vertically.

Panel Anchors: The anchors shall be hot dipped galvanized 20 gauge perforated steel strips, 24" long by 1 3/4" wide, or stainless steel 22 gauge perforated strips, 16 inches long by 1 3/4" wide, both available from Pittsburgh Corning Corporation. Placement is at both side jamb and at the head.

Channels: The channels are 1 1/2" x 4" x 1/8" aluminum from Julius Blum & Co., Inc. or equivalent.

Expansion Material: Polyethylene type, 3/8" thick, available from Pittsburgh Corning Corporation. Placed at both the jamb and the head location.

Sealant: Silicone type sealant. The sealant is placed at the side jambs and at the head on both the exterior and interior sides.

Asphalt Emulsion: A water-based asphalt emulsion.

Product Identification: As the glass block windows are assembled at the site, there will not be a label affixed to the window assembly. Products shall be identified by the cartons in which the individual glass blocks were packaged.

LIMITATIONS

Design pressures:

Description	Maximum Width (in.)	Maximum Height (in.)	Design Pressures (psf)
PREMIER	48	48	± 120
PREMIER	72	240	± 75
THICKSET 90	72	240	± 75
VISTABRIK	48	96	± 80

Impact Resistance:

PREMIER: These window assemblies do not satisfy the Texas Department of Insurance's criteria for protection from windborne debris. These window assemblies will need to be protected with an impact protective system when installed in areas where windborne debris is required.

THICKSET 90 and VISTABRIK: These window assemblies satisfy the Texas Department of Insurance's criteria for protection from windborne debris. The window assemblies passed the equivalent of Missile Level A specified in ASTM E 1996-04 and may be installed in the **Inland I** and **Seaward** zones on structures at a height greater than 30 feet above grade 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 at the minimum required height above grade. When installed at heights less than 30 feet above grade and in the Inland I and Seaward areas, the assemblies will need to be protected with an impact protective system.

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

INSTALLATION INSTRUCTIONS

General: The glass block mortar system shall be assembled and installed in accordance with the manufacturer's installation instructions, Section 2110 of the International Building Code, and this product evaluation report.

Installation: The glass block assemblies shall be installed using either the Panel Anchor Method or the Channel Restraint Method.

Panel Anchor Method:

Wall Framing: The glass block mortar system shall be mounted to minimum Southern Yellow Pine dimension wood wall framing members; cast-in-place concrete wall systems (minimum compressive strength of 2,000 psi); concrete masonry block wall systems (minimum compressive strength of 1,500 psi); steel wall framing (minimum 20 gauge steel).

Installing the First Row: Treat the sill with an asphalt emulsion. Prepare the mortar as required by the instructions. For the first row, using a trowel, apply a mortar bed to the sill. Place the first row of blocks as required by the instructions. Apply the expansion material as required by the instructions.

Installing the Remaining Rows: Using a trowel, apply mortar to the top of the previous rows. Install panel anchors at both side jambs. Embedment of the panel anchors into the mortar joints shall be at least 12 inches. Press the reinforcement into the mortar bed along the entire length of the panel. The placement of the reinforcement is at horizontal joints only and is required along the same row as the panel anchors. The panel anchors are secured to the wall framing in the following manner:

Southern Yellow Pine Wood Wall Framing: Minimum No. 10 x 1 $\frac{3}{4}$ " wood screws. Two (2) screws are required for each panel anchor. The panel anchors are spaced a maximum of 16 inches on center. EXCEPTION: For 12" x 12" blocks, the panel anchors are spaced 12 inches on center (at every horizontal glass block joint).

Cast-in-Place Concrete and Concrete Masonry Block Wall Systems: Minimum $\frac{3}{16}$ " diameter Hilti Kwik Con II anchors. One (1) fastener is required for each panel anchor. The fasteners shall have a minimum embedment of 1 inch into the concrete or masonry block. The panel anchors are spaced a maximum of 16 inches on center. EXCEPTION: For 12" x 12" blocks, the panel anchors are spaced 12 inches on center (at every horizontal glass block joint).

Steel Wall Framing: Minimum No. 10 ITW Buildex 410 stainless steel Tekes, self-drilling screws. Two (2) screws are required for each panel anchor. The panel anchors are spaced a maximum of 16 inches on center. EXCEPTION: For 12" x 12" blocks, the panel anchors are spaced 12 inches on center (at every horizontal glass block joint).

Installing the Top Row: Install panel anchors along the head. Embedment of the panel anchors into the mortar joints shall be at least 12 inches. The horizontal reinforcement is not required at the head. Apply the expansion material as required by the instructions. The panel anchors are secured to the wall framing in the following manner:

Southern Yellow Pine Wood Wall Framing: Minimum No. 10 x 1 $\frac{3}{4}$ " wood screws. Two (2) screws are required for each panel anchor. The panel anchors are spaced a maximum of 16 inches on center. EXCEPTION: For 12" x 12" blocks, the panel anchors are spaced 12 inches on center (at every horizontal glass block joint).

Cast-in-Place Concrete and Concrete Masonry Block Wall Systems: Minimum $\frac{3}{16}$ " diameter Hilti Kwik Con II anchors. One (1) fastener is required for each panel anchor. The fasteners shall have a minimum embedment of 1 inch into the concrete or masonry block. The panel anchors are spaced a maximum of 16 inches on center. EXCEPTION: For 12" x 12" blocks, the panel anchors are spaced 12 inches on center (at every horizontal glass block joint).

Steel Wall Framing: Minimum No. 10 ITW Buildex 410 stainless steel Tekes, self-drilling screws. Two (2) screws are required for each panel anchor. The panel anchors are spaced a maximum of 16 inches on center. EXCEPTION: For 12" x 12" blocks, the panel anchors are spaced 12 inches on center (at every horizontal glass block joint).

Channel Restraint Method:

Wall Framing: The glass block mortar system shall be mounted to minimum Southern Yellow Pine dimension wood wall framing members, cast-in-place concrete wall systems, or concrete masonry block wall systems.

Installing the Perimeter Channel: Cut the channel to fit the side jambs and the head of the opening. A channel is not required at the sill. The channel shall be secured to the wall framing with the following fasteners:

Southern Yellow Pine Wood Wall Framing: Minimum No. 10 x 1 $\frac{3}{4}$ " wood screws. For PREMIER and THICKSET 90, the spacing of the fasteners shall not exceed 9 inches on center. For VISTABRIK, the spacing of the fasteners shall not exceed 14 inches on center.

Cast-in-Place Concrete and Concrete Masonry Block Wall Systems: Minimum $\frac{3}{16}$ " diameter Hilti Kwik Con II anchors. The spacing of the anchors shall not exceed 16 inches on center. The fasteners shall have a minimum embedment of 1 inch into the concrete or masonry block.

Steel Wall Framing: Minimum No. 10 ITW Buildex 410 stainless steel Tekes, self-drilling screws. For PREMIER and THICKSET 90, the spacing of the fasteners shall not exceed 12 inches on center. For VISTABRIK, the spacing of the fasteners shall not exceed 16 inches on center.

Installing the First Row: Treat the sill with an asphalt emulsion. Prepare the mortar as required by the instructions. For the first row, using a trowel, apply a mortar bed to the sill. Place the first row of blocks as required by the instructions. Apply the expansion material as required by the instructions.

Installing the Remaining Rows: Using a trowel, apply a mortar bed to the top of the previous rows. Set the first block and the last block of the next row into the side channels. Install the remaining blocks in the row in the same manner as the first row. Apply mortar to the blocks as required by the instructions. Press reinforcement into the mortar bed along the entire row of blocks. The placement of the reinforcement is at horizontal joints only and is required at a maximum vertical spacing of 16 inches on center. EXCEPTION: For 12" x 12" blocks, the vertical spacing shall be a maximum of 12 inches on center (at every horizontal glass block joint).

Installing the Top Row: Install the last row of blocks starting with a block in each top corner. Apply the remaining blocks, working towards the center. Apply mortar to the blocks as required by the instructions. The horizontal reinforcement is not required at the head. Apply the expansion material as required by the instructions.

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) and the International Building Code (IBC) and the Texas Revisions.