



PITTSBURGH CORNING™

Glass Block Installation Instructions

Pittsburgh Corning provides two ways to install glass block. One is for the DIYer and is called ProVantage Installation System and the other is the Mortar Installation System which is geared more for the more advanced DIYer and the professional contractor. Instructions for both are enclosed.

ProVantage Installation System: This is the easiest way to install glass block. It is used for the Premiere Series (4" thick) Glass Block and utilizes a vinyl track system and glass block sealant. This system provides you with your choice of an all clear glass look or the traditional grid look when using ProVantage Grout.

Mortar Installation System: This system utilizes glass block mortar and mortar spacers. This system provides you with the traditional grid look with clean consistent ¼" mortar joints.



PITTSBURGH CORNING®

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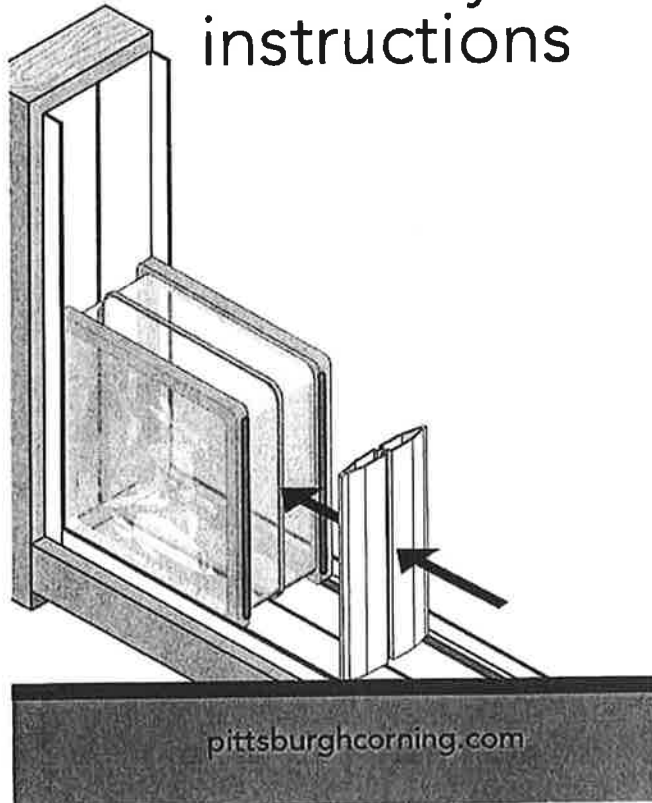
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PITTSBURGH CORNING™

**ProVantage®
Glass Block
Installation System**

assembly
instructions



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Pittsburgh Corning ProVantage® Glass Block Installation System Assembly Instructions

Introduction:

The ProVantage® Glass Block Installation System is the easiest way to install Pittsburgh Corning Premiere Series (4" thick) Glass Block, and get professional results.

ProVantage® I Installation System (Channel Construction):

- This method is used to install straight walls in 4-sided openings.
- In this method, glass block panels are installed in perimeter channel.
- The maximum opening size for exterior panels is 50 square feet.
- The maximum opening size for interior panels is 85 square feet.
- The joints of these panels can be finished with ProVantage® Glass Block Surface Grout or Pittsburgh Corning Glass Block Sealant. Sealant finishing is not recommended for wet environments.

ProVantage® II Installation System (Anchor Construction):

- This method is used to install straight and 90° angled walls and straight walls framed on at least two sides.
- In this method, glass block panels are secured to the wall using special wall anchors.
- The maximum opening size for exterior panels is 50 square feet, framed on all four sides.
- The maximum opening size for interior panels is 85 square feet, framed on at least two sides.
- The joints of these panels can be finished with ProVantage® Glass Block Surface Grout. Sealant finishing can only be used on straight walls in 4-sided openings, and it is not recommended for wet environments.
- All glass block panels are non-load bearing, so adequate provisions must be made for support of construction around the panel.

The materials required for ProVantage® glass block installation are:

- Pittsburgh Corning Premiere Series (4" thick) Glass Block
- ProVantage® Horizontal Spacers
- ProVantage® Vertical Spacers
- Pittsburgh Corning Glass Block Sealant
- ProVantage® Glass Block Surface Grout (grout finish only)
- Grout Sealer (grout finish only)
- #6 x 1" Flat Head Galvanized Screws

ProVantage® I Installation also requires:

- Perimeter Channel
- White Touch-Up Paint

ProVantage® II Installation also requires:

- ProVantage® Anchors
- Expansion Strips (cut to length)

Tools required for installing the glass block are a utility knife, screwdriver, 2-foot level, tape measure, caulk gun, rubber mallet, electric drill, fine tooth saw, spoon shaped finishing tool and razor blade.

For Grout Finishing you will also need a rubber float, bucket, tile/grout sponge, cheesecloth and small paint brush.

ProVantage® I

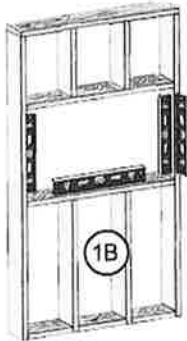
1. Prepare The Opening

- A. Make sure the opening is the correct size.
Use the table below to find the correct dimensions for a straight wall with two jambs using channels.

ProVantage® I Perimeter Channel Construction Using 8" High Glass Block			
Number of Blocks	Rough Opening Width and Height (Inches)		
	4"	6"	8"
1	4-1/4	6-1/4	8-1/4
2	8-1/8	12-1/8	16-1/8
3	12	18	24
4	15-7/8	23-7/8	31-7/8
5	19-3/4	29-3/4	39-3/4
6	23-5/8	35-5/8	47-5/8
7	27-1/2	41-1/2	55-1/2
8	31-3/8	47-3/8	63-3/8
9	35-1/4	53-1/4	71-1/4
10	39-1/8	59-1/8	79-1/8
11	43	65	87
12	46-7/8	70-7/8	94-7/8

Note: Blocks are available in 4" x 8", 6" x 8", and 8" x 8" sizes

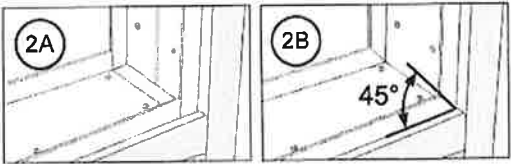
- B. Use a level to make sure the opening is level and plumb.



Note: If there are any problems with the opening, adjust it before proceeding.

2. Install Perimeter Channel

- A. Cut the channel to fit the perimeter of the opening.
The channel ends may be cut straight or mitered.

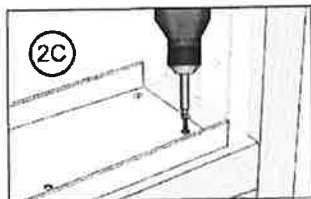


- B. Install the bottom channel:
- Apply two 1/4" beads of sealant on underside of channel horizontally 1/2" from both sides. Insert two screws in each end of the channel.

Note: If the predrilled holes at the ends were trimmed off when cutting the channel to length, drill new ones at the ends of the cut piece.

- C. Install the side channels in the same manner making sure they are plumb before attaching with screws.

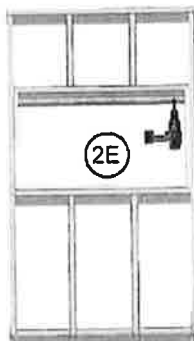
- D. Cut the top channel in half lengthwise with a utility knife. Score the center groove with the knife and break the channel in half.



Note: Cutting the top channel in half will allow the top row of blocks to be installed.

- E. Install the top channel:

- Place the half channel in the top of the opening making sure it is aligned with the side channels.
- Attach the channel to the opening by inserting #6 x 1" flat head galvanized screws through the predrilled holes in the channel. Insert a screw at each end of the channel.



- F. Paint all of the screw heads white to reduce their visibility.

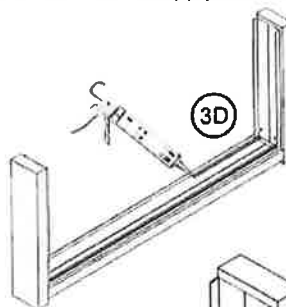
3. Install The First Row

- A. Cut the horizontal spacers for each course to fit inside the vertical perimeter channels.

- B. Open the sealant as instructed on the tube. Cut the nozzle at a 45° angle at the 1/4" mark.

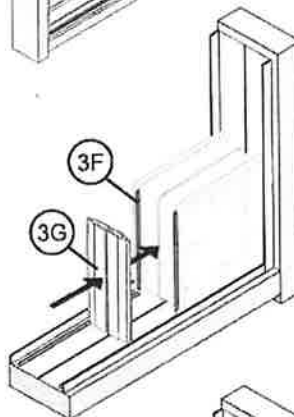
- C. One tube of sealant will install 7 blocks. Sealant will skin over in 15-17 minutes. Do not apply sealant to more blocks than can be installed in 10 minutes.

- D. In the bottom channel apply two beads of sealant the full length of the channel 1/4" in from each side.



- E. Place a glass block in the side channel and slide it into the bottom channel.

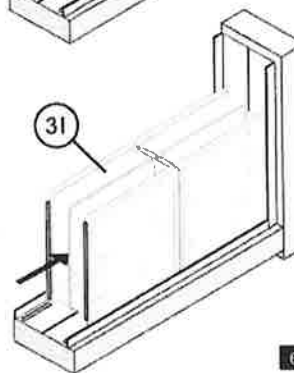
- F. Apply two 1/4" beads of sealant behind the raised edge of glass block.



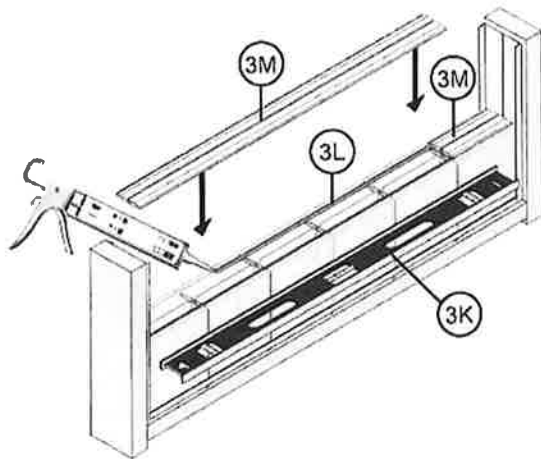
- G. Press a vertical spacer into place next to the block.

- H. Apply two 1/4" beads of sealant behind the raised edge of the next glass block to be inserted.

- I. Insert this next block tight against the vertical spacer and apply two 1/4" beads of sealant behind the raised edge of block.



- J. Continue inserting spacers and blocks in this manner to complete the row. Do not apply sealant to the side of the last block and last spacer. Insert the last block in the side channel and slide it into the bottom channel.



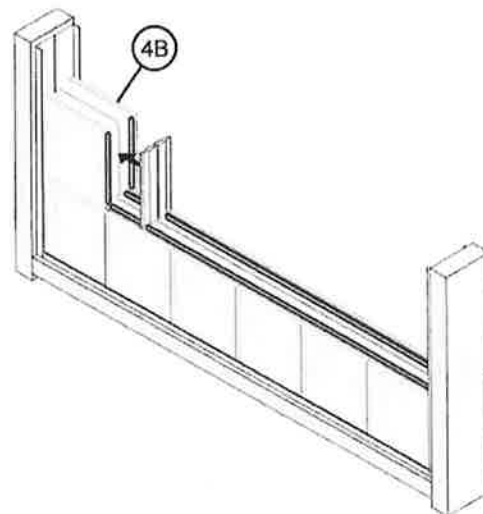
- K. Check the first row for alignment of spacers and blocks. Make sure all the blocks are sitting completely in the channel and the joints are tight.
- L. Apply two 1/4" beads of sealant to the top of the row of blocks just behind the raised edges.
- M. Place a horizontal spacer on top of the first row of blocks. If more than one section of horizontal spacer is required, be sure to lay them end to end with the joint directly above a vertical spacer. Stagger these joints on each following row.
- N. Remove any excess sealant. If necessary, adjust the size of the sealant beads to prevent squeeze out on the following rows. The joint areas must be kept clean of sealant.

4. Install The Second Through Next To Last Row

- A. Apply two 1/4" beads of sealant to the edges of the horizontal spacer, 1/4" in from edge of spacer.

- B. Install the second row:

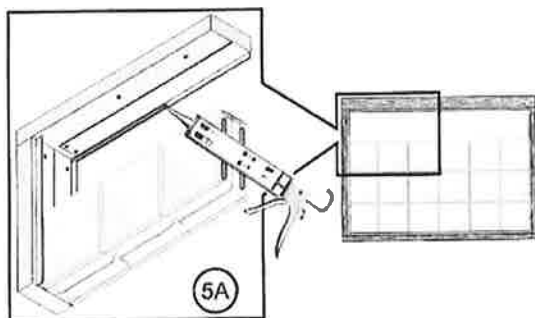
- Start the row from the opposite end. For example, if you installed the first row from left to right, install the second from right to left.
- Continue to install blocks and vertical spacers with sealant as illustrated.



- C. Install the remaining rows in this manner until you reach the last row. Check each row for alignment vertically and horizontally.

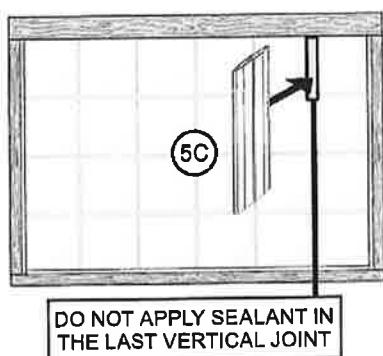
5. Install The Last Row

- A. Apply a 1/4" bead of sealant horizontally along the top inside leg of the half channel at the top of the opening, where the faces of the blocks will contact the channel.

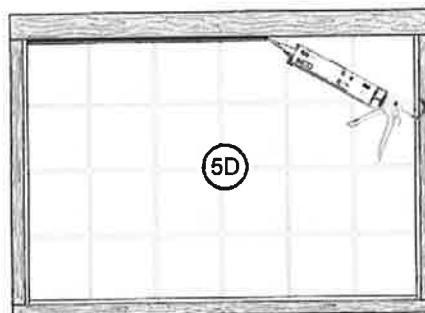


- B. Slide one block with sealant applied into the right jamb and one block into the left jamb.

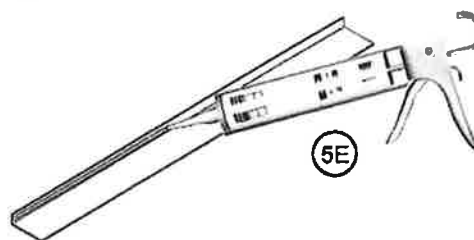
- C. Install the remaining blocks in the same manner as before, except do not apply sealant in the last vertical joint. Insert the last spacer after installing the last block.



- D. Apply a 1/4" bead of sealant horizontally across the top of the opening 1/2" from the face of the glass blocks. This sealant line will be used to secure the second half of the top channel.



- E. Apply a 1/4" bead of sealant along the top inside leg of the second half channel.



- F. Slide the half channel into place between the blocks and the top of the opening. If necessary, temporarily apply a piece of tape to the channel to hold it in place until the sealant sets.

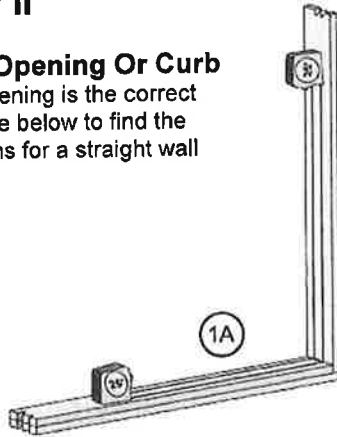
- G. Wait 24 hours before finishing the joints to allow the sealant to cure.

Note: Please go to page 18 for joint finishing instructions to complete your project.

ProVantage® II

1. Prepare The Opening Or Curb

A. Make sure the opening is the correct size. Use the table below to find the correct dimensions for a straight wall with two jambs.



ProVantage® II Wall Anchor Construction Using 8" High Glass Block				
Number of Blocks	Rough Opening Width (Inches)			Rough Opening Height (Inches)
	4" Block Width	6" Block Width	8" Block Width	
1	4-1/4	6-1/4	8-1/4	8-1/2
2	8-1/8	12-1/8	16-1/4	16-1/8
3	12	18	24-1/8	23-7/8
4	15-7/8	23-7/8	32	31-7/8
5	19-3/4	29-3/4	39-7/8	39-3/4
6	23-5/8	35-5/8	47-5/8	47-1/2
7	27-1/2	41-1/2	55-1/2	55-1/2
8	31-3/8	47-3/8	63-1/4	63-1/4
9	35-1/4	53-1/8	71-1/8	71-1/8
10	39-1/8	59	79	79
11	43	64-7/8	86-7/8	86-7/8
12	46-7/8	70-3/4	94-3/4	94-7/8

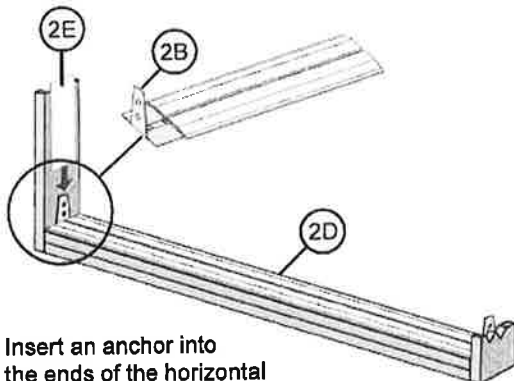
**Note: 4" x 8", 6" x 8", and 8" x 8" blocks are all nominally 6" high.*

B. If installing glass block with angled wall sections follow these steps:

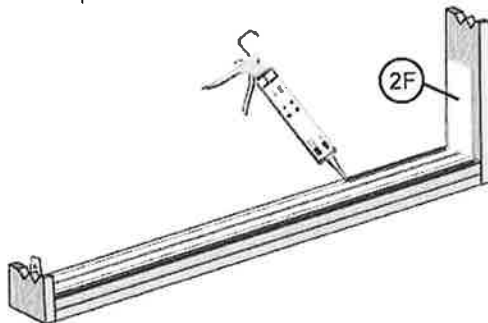
- For walls with angles it is recommended that you layout your wall before constructing a curb.
- Make sure the angled sections of your opening or curb are configured correctly.
- The curb must be as wide as, or wider than, the glass block thickness (4" or wider).
- Apply finish material to the curb. The curb will be visible through the glass blocks. If installing the glass blocks in a wet environment, take steps to ensure that the curb is waterproof.
- Use a level to make sure the opening is level and plumb.
- If there are any problems with the opening or curb, adjust it before proceeding.

2. Install The Anchors

- A. Cut the horizontal spacers for each course to fit the opening.



- B. Insert an anchor into the ends of the horizontal spacers where they meet a jamb.
- C. Apply two 1/4" beads of sealant to the edges of the horizontal spacers 1/4" in from edge of spacer. Place spacer sealant side down.



- D. Then apply two 1/4" beads of sealant to this same horizontal spacer, 1/4" in from edge of spacer.
- E. Attach anchor to jamb with screws. Cut expansion strip to 7-1/2" length (for 8" high glass block).
- F. Place expansion strip over the anchor and against the jamb.

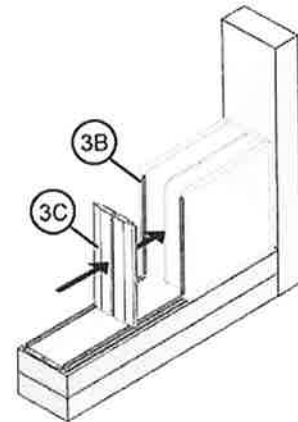
3. Install The Glass Block

- A. Place a glass block in the opening against jamb.

- B. Apply two 1/4" beads of sealant behind the raised edge of glass block.

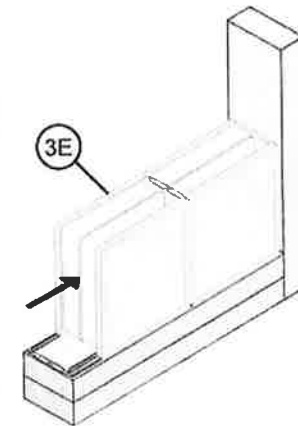
- C. Press a vertical spacer into place next to the block.

- D. Apply two 1/4" beads of sealant behind the raised edge of the next glass block to be inserted.



- E. Insert this next block tight against the vertical spacer and apply two 1/4" beads of sealant behind the raised edge of block.

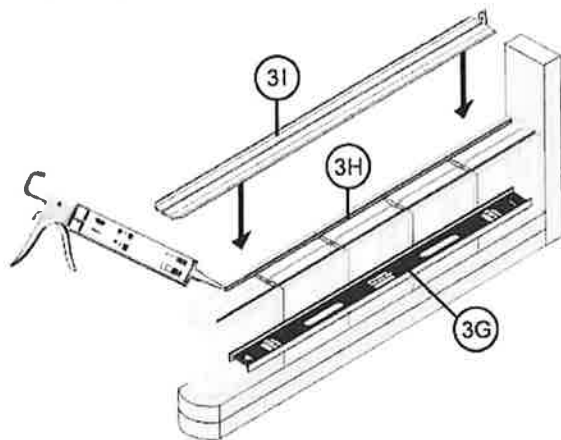
- F. Continue inserting spacers and blocks in this manner to complete the row.



- G. Check the first row for alignment of spacers and blocks. Make sure all the blocks are level and the joints are tight.

H. Apply two 1/4" beads of sealant to the top of the row of blocks just behind the raised edges.

I. Place a horizontal spacer with anchors installed on top of the first row of blocks. If more than one section of horizontal spacer is required, be sure to lay them end to end with the joint directly above a vertical spacer. Stagger these joints on each following row.



J. Remove any excess sealant. If necessary, adjust the size of the sealant beads to prevent squeeze out on the following rows. The joint areas must be kept clean of sealant.

K. Install the remaining rows of glass blocks, spacers, anchors and expansion strips in this manner. Check each row for alignment.

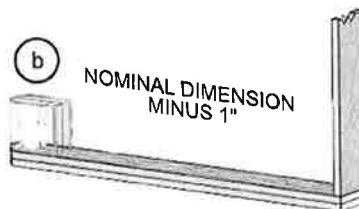
NOTES:

For Straight Blocks and Finishing Units

a. For walls with angles it is recommended that you layout your wall before constructing a curb.

Note: If it is necessary to have a joint in the horizontal spacer, to extend it to fit the width of the section, make sure the joint will align with a vertical spacer. Stagger these joints on each following row.

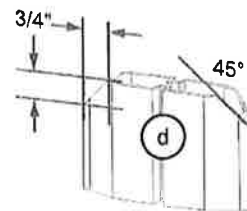
b. For straight sections between one jamb and an EndBlock™, cut the horizontal spacer 1" shorter than the nominal dimension.



c. For straight sections between a shaped block and an EndBlock™, cut the horizontal spacer 3/4" shorter than the nominal dimension.



d. For EndBlock™, trim the end of the spacer to fit the shape by cutting the two corners at a 45° angle 3/4" from each corner.

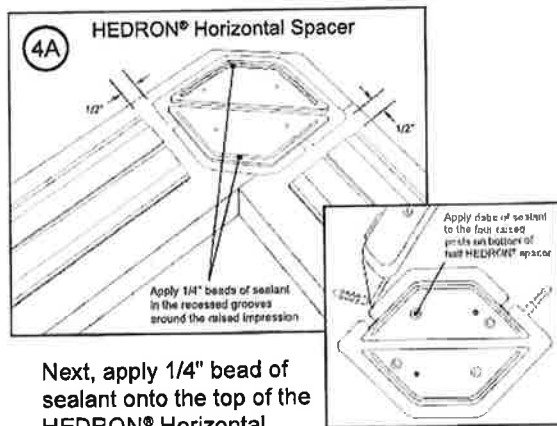


4. When Installing HEDRON® Corner Block for a 90° Angle Wall Section:

A. 90° angled wall sections:

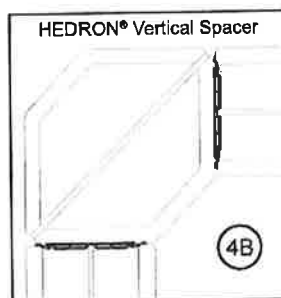
For the first row, use a half HEDRON® horizontal spacer. Remove the barbed tabs and apply 4 dabs of sealant to the protruding posts on the bottom of the half HEDRON® spacer as shown in the inset drawing below. Attach it to the opening with sealant side down and centered under the HEDRON® block location. There should be a 1/2" gap between straight sections of spacer and the shaped spacer.

For all other rows, use a whole HEDRON® horizontal spacer.



Next, apply 1/4" bead of sealant onto the top of the HEDRON® Horizontal Spacer and place HEDRON® Corner Block on spacer.

- B. The vertical spacers for HEDRON® blocks are flat. See diagram for proper placement of vertical spacers. These vertical spacers should be installed by putting a 1/4" bead of sealant on the side that will be attached to a glass block.



Grout Finishing

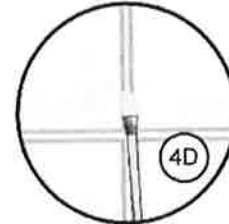
IMPORTANT: The ProVantage® Surface Grout was designed and tested for this application - DO NOT SUBSTITUTE!



CAUTION: Avoid contact with skin. Safety glasses and impervious gloves are recommended to minimize skin and eye contact.

Do not finish the joints until sealant has cured for 24 hours.

- Remove any sealant squeezed out from the joints with a utility knife.
- Follow directions on the ProVantage® Surface Grout container for grout application.
- Grout is applied between glass blocks only, not at perimeter.
- For applications in wet environments, wait 72 hours and apply sealer to the grout lines with a paint brush. Immediately wipe sealer off glass surfaces to prevent it from adhering to the glass.



- Apply a second coat of sealer once the first coat is dry.
- After the grout has cured for 72 hours, caulk all perimeter joints with a bead of sealant.

Sealant Finishing of Exterior Joints

IMPORTANT: Not recommended for shower applications.

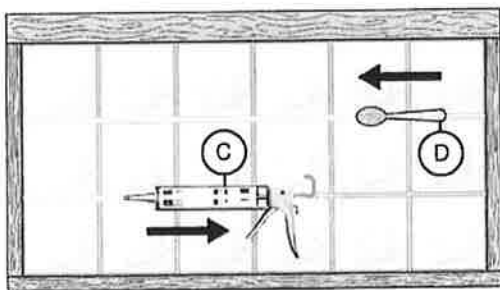


CAUTION: Avoid contact with skin. Safety glasses and impervious gloves are recommended to minimize skin and eye contact. Provide sufficient mechanical ventilation.

Do not finish the joints until sealant has cured for 24 hours.

Note: If you are installing blocks in a moist environment or if your wall is not framed on all four sides, grout finish is recommended.

- A. Remove any sealant squeezed out from the joints with a utility knife.
- B. Open the sealant as instructed on the tube. Coverage rate is one tube per 16 blocks. Do not seal more joints than you can tool in 15 minutes.
- C. Seal the horizontal joints first by placing the nozzle of the tube in the joint at the perimeter on a 45° angle. Pull the tube along the joint while laying a bead of sealant. Slightly overfill the joints.



D. Push the spoon shaped finishing tool over the joints at a 45° angle to collect the excess sealant and seal the joint. Periodically wipe the sealant from the finishing tool.

E. Seal the vertical joints in the same manner. Carefully work the joint intersections to create a smooth finish.

F. Let the sealant cure for 48 hours before putting any stress on the panel.

G. Seal the perimeter joints with sealant.

Maintenance

An important part of the functional beauty of Pittsburgh Corning Glass Block products is that they are virtually maintenance free! There's nothing to rot, rust, peel or paint. All that is needed is an occasional wiping with a damp, soft cloth on interior panels or a hosing on exterior panels. With minimal attention, your Pittsburgh Corning Glass Block will remain sparkling and beautiful for years!

If you need assistance

We hope these instructions are clear and answer your questions about the installation of Pittsburgh Corning Premiere Series Glass Blocks and Finishing Units with the ProVantage® Glass Block Installation System. For additional information on Pittsburgh Corning Glass Block visit our website at www.pittsburghcorning.com or call 1-800-624-2120.

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Pittsburgh Corning Corporation provides written warranties for many of its products, and such warranties take precedence over the statements contained herein. You may obtain a copy of the warranty for this product by contacting Pittsburgh Corning.



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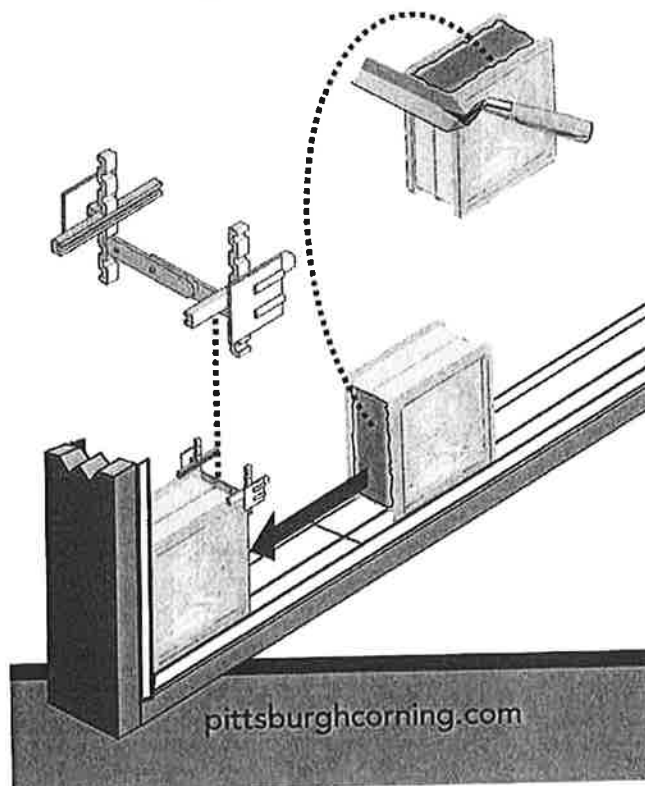
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PITTSBURGH CORNING

**Mortar
Glass Block
Installation System**

assembly
instructions



Pittsburgh Corning Mortar Glass Block Installation System Assembly Instructions

Introduction:

The **Mortar I System** utilizes Pittsburgh Corning perimeter channels on all four sides. You will also use Universal Mortar Spacers and glass block mortar to produce clean, consistent 1/4" joints and a traditional grid look.

The **Mortar II System** does not use the Pittsburgh Corning perimeter channels but instead utilizes expansion strips, panel reinforcing and panel anchors. You will also use Universal Mortar Spacers and glass block mortar to produce clean, consistent 1/4" joints and a traditional grid look.

Here is additional information about each method.

Mortar I: (page 3)

- This method is designed for use with Pittsburgh Corning Premiere (4" thick) and Thinline® (3" thick) Series Glass Block.
- The installation recommendations are for small residential panels of 25 sq. ft. or less.
- Not for use in constructing curved glass block walls.
- Interior and exterior panels must be framed on all four sides.

Note: This instruction is not to be used in constructing curved glass block applications. All glass block panels are non-load bearing, so adequate provisions must be made for support of construction around the panel.

Mortar II: (page 14)

- This method is designed for use with Pittsburgh Corning Premiere (4" thick) and Thinline® (3" thick) Series Glass Block.
- The installation recommendations are for interior or exterior residential panels larger than 25 sq. ft.
- This method may be used to install projects framed on two, three, or four sides.
- Premiere Series - Panel size limitations - Interior (250 sq. ft. max) and *Exterior (144 sq. ft. max.).
- Thinline® Series - Panel size limitations - Interior (150 sq. ft. max.) and *Exterior (85 sq. ft. max.).

* Exterior panel size limitations are based on a 20 PSF. For higher windloads consult local building codes or call Pittsburgh Corning Corporation at 1-800-624-2120.

Note: All glass block panels are non-load bearing, so adequate provisions must be made for support of construction around the panel.

The joints of the Mortar I and Mortar II Systems utilize a traditional installation method using a mortar finish for the classic "grid" look. Glass block sealant should be used to seal the perimeter on both sides of the panel.

Before you begin installing your glass blocks, decide which installation method is right for your project.

The materials required for Mortar System glass block installation are:

1. Pittsburgh Corning Premiere Series or Thinline® Series Glass Block
2. Universal Mortar Spacers
3. Perimeter Channels - Premiere (4") or Thinline® (3") (*Mortar I System*)
4. Expansion Strips
5. #6 x 1" zinc-plated flat head screws (approx. three per lineal foot of perimeter channel) (*Mortar I System*)
6. Panel reinforcing (*Mortar II System*)
7. Panel anchors (*Mortar II System*)
8. #12 x 1" zinc-plated pan head screws (*Mortar II System*)
9. Glass Block white premixed mortar
10. Pittsburgh Corning Glass Block Sealant
11. White touch up paint (*Mortar I System*)
12. Latex paint, Weldbond® adhesive, or asphalt emulsion depending upon application.

Mortar I System

The tools required for the Mortar I glass block installation system are a margin trowel, mortar pan, polyfoam brush, sponge, tin snips, screwdriver or power drill, fine tooth saw or miter saw, caulking gun, utility knife, metal file, tape measure, 3/8" to 1/2" striking tool and 2' level.

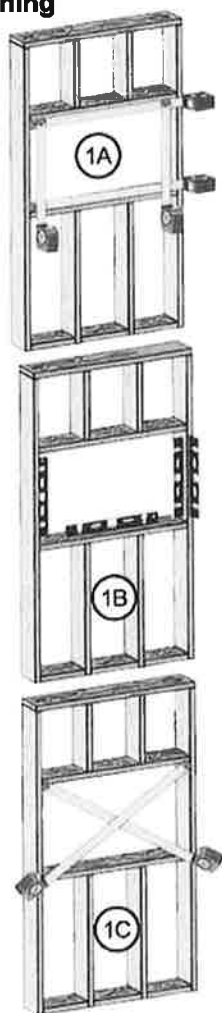
1. Prepare The Rough Opening

- A. Make sure the opening is the correct size. To determine the correct size of the rough opening, add 1/4" to the sum of the nominal block sizes for both the height and width.

Example: Panel (using 8" x 8" block) is four block wide ($8 \times 4 + 1/4" = 32-1/4"$) and five block high ($8 \times 5 + 1/4" = 40-1/4"$). Rough opening needs to be 32-1/4" wide and 40-1/4" high.

- B. Use a level to make sure the opening is level and plumb.
C. Measure the opening diagonally from corner to corner in both directions, and compare the dimensions to check for squareness. These dimensions should be equal to within 1/8".

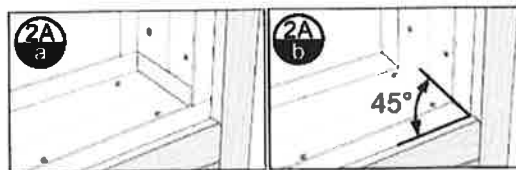
Note: If there are any problems with the opening, make adjustments before proceeding.



2. Install Perimeter Channel

- A. Cut the channel to fit the perimeter of the opening. The channel ends may be cut straight or mitered.

- a. If cutting the ends straight:
- Cut the top and bottom channels to the width of the opening.
 - Cut the side channels to the height of the opening minus 1-1/2" so they will fit between the top and bottom channels.



- b. If mitering the ends, make all cuts at a 45° angle.

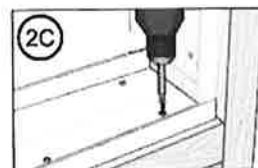
- B. Cut the top channel in half lengthwise with a utility knife. Score the center groove with the knife and break the channel in half.

Note: Cutting the top channel in half will allow the top row of blocks to be installed.

- C. Install the bottom channel:

- The channel may be installed in the center of the opening, or flush with the interior or exterior side of the opening.
- Attach the channel to the opening by inserting #6 x 1" flat head galvanized screws through the predrilled holes in the channel. Insert two screws in each end of the channel.

Note: If the predrilled holes at the ends were trimmed off when cutting the channel to length, drill new ones at the ends of the cut piece.



- D. Install the side channels in the same manner making sure they are plumb before attaching with screws.

Note: You may want to slide a glass block into the bottom channel at both corners to make sure the side channels are aligned with the bottom channel.

- E. Install the half top channel:

- Place the half channel in the top of the opening making sure it is aligned with the side channels.
- Attach the channel to the opening by inserting #6 x 1" flat head galvanized screws through the predrilled holes in the channel. Insert a screw at each end of the channel.
- On exterior windows, the screwed in half channel should always be the exterior side.

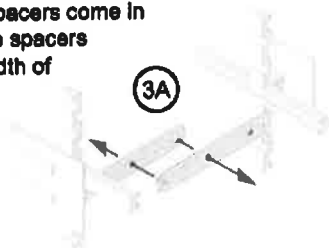


Note: If the predrilled hole at the end was trimmed off when cutting the channel to length, drill a new one at the end of the cut piece.

- F. Paint all of the screw heads white to reduce their visibility.

3. Preparation of Universal Mortar Spacers

- A. Assemble the spacers for the series of block you are installing. The spacers come in two halves, snap the spacers together to fit the width of the block.



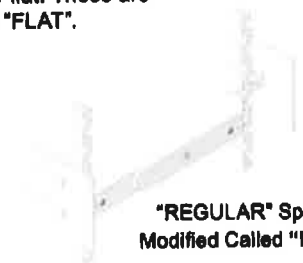
- B. Modify the spacers using tin snips based on their location:

- Where four block come together, spacers are used as assembled. These are called "REGULAR".



"REGULAR" Spacer

- Where block meet the side perimeter channel, clip off both sets of smooth legs. Twist-off tabs remain in place. File off any burrs so the spacer will lay flat. These are called "FLAT".



"REGULAR" Spacer
Modified Called "FLAT"

- For the top row of block, clip off one upper toothed leg and cut the twist off tab in half. These are called "H".

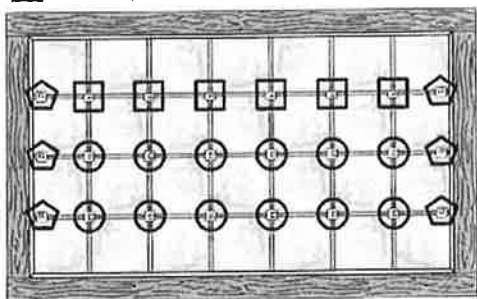


"REGULAR" Spacer
Modified Called "H"

Note: It is important to file off any burrs.

This is a reference guide for where "REGULAR" and modified spacers are used.

- = "REGULAR" Spacer
 ◐ = "FLAT" Spacer
 □ = "H" Spacer



4. Mortar Preparation

The following gives an idea of the number of blocks that can be installed per 50 pound bag of mortar.

White Premixed Glass Block Mortar Number of blocks per 50 lb. bag of mortar					
Block Sizes (Nominal)	4" x 8"	6" x 6"	6" x 8"	8" x 8"	12" x 12"
No. of Premiere Series (4" thick)	34	34	30	26	18
No. of Thinline® Series (3" thick)	42	42	36	32	N/A

Based on 1/4" mortar joints

- A. Mix mortar according to the instructions on the premix mortar bag. When mixed to the proper consistency, mortar should stick to the edge of the glass block when turned on edge. Be sure to read and understand all precautions outlined by the mortar manufacturer. Freshly mixed mortar may cause skin irritation.

Note: Slowly add water to mortar mix. **DO NOT** mix more mortar than you can install in one hour.

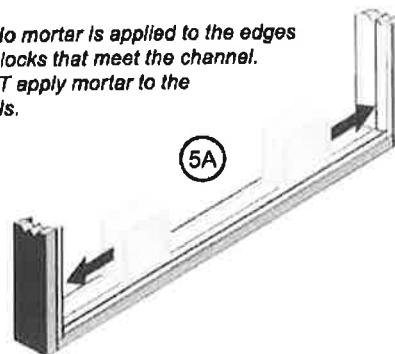
Note: Avoid direct contact when possible and wash exposed skin areas promptly with water. If any gets into eyes, rinse immediately with water and seek prompt medical attention.

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5. Install The First Row

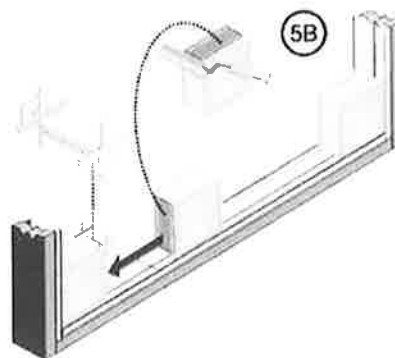
- A. Place two glass blocks in the sill channel, sliding one block into the right jamb and one block into the left jamb. Make sure the blocks are seated in the channels.

Note: No mortar is applied to the edges of the blocks that meet the channel. **DO NOT** apply mortar to the channels.



- B. Install the next block:

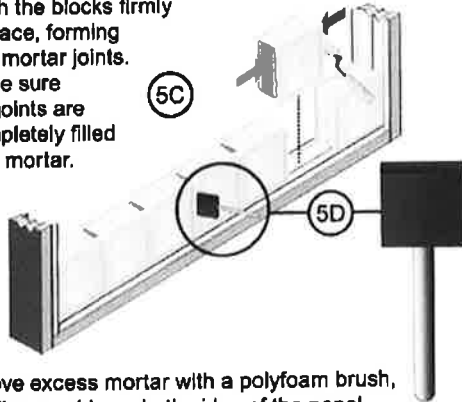
- Apply 3/8" to 1/2" of mortar to the edge of the next block.
- Place the block in the channel with the mortar facing a previously installed block.
- As you install the block, insert a "REGULAR" spacer with the cross arm down where the two blocks meet.
- Push the block firmly in place, forming a 1/4" mortar joint. Make sure the joint is completely filled with mortar.



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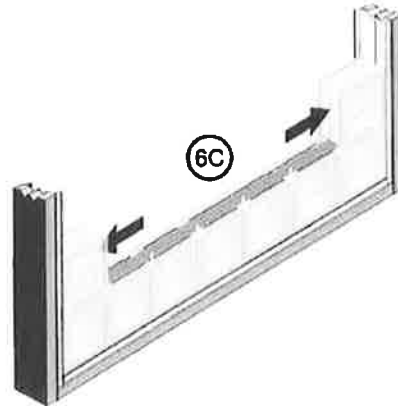
C. Install the remaining blocks in the first row in the same manner.

- Apply 3/8" to 1/2" of mortar to both edges of the last block installed in the row.
- Be sure to insert "REGULAR" spacers with the cross arm down, where two blocks meet.
- Push the blocks firmly in place, forming 1/4" mortar joints. Make sure the joints are completely filled with mortar.



D. Remove excess mortar with a polyfoam brush, and fill any voids on both sides of the panel.

C. Set the first block and last block of the next row into the side channels on top of the "FLAT" spacers.



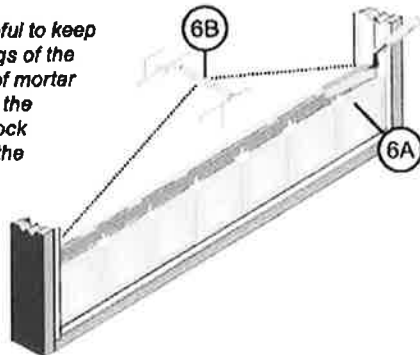
D. Install the remaining blocks in the row in the same manner as the first row.

- Apply 3/8" to 1/2" of mortar to the edge of each block that meets a previous block. Apply mortar to both edges of the last block installed in the row.
- Be sure to insert "REGULAR" spacers with the cross arm down, where two blocks meet.
- Push the blocks firmly in place, forming 1/4" mortar joints. Make sure the joints are completely filled with mortar.
- Remove excess mortar with a polyfoam brush, and fill any voids on both sides of the panel.
- Check periodically to ensure that the blocks are straight, level and plumb. Adjust as needed.

6. Install The Remaining Rows

A. Apply a 3/8" to 1/2" mortar bed on top of the first row.

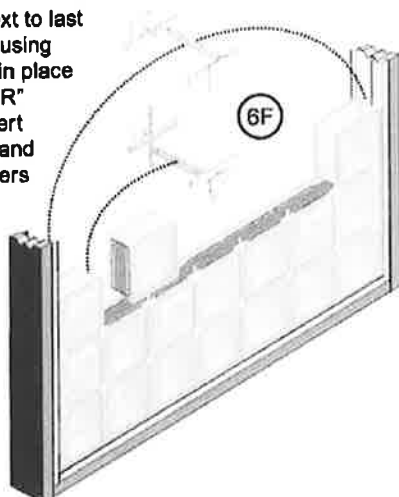
Note: Be careful to keep the smooth legs of the spacers free of mortar to ensure that the next row of block will sit flat on the spacers.



B. Place a "FLAT" spacer on top of the first and last block of the previous row where they meet the side channels.

E. Repeat Steps 6A - 6D to install each row of block, except for the next to last row.

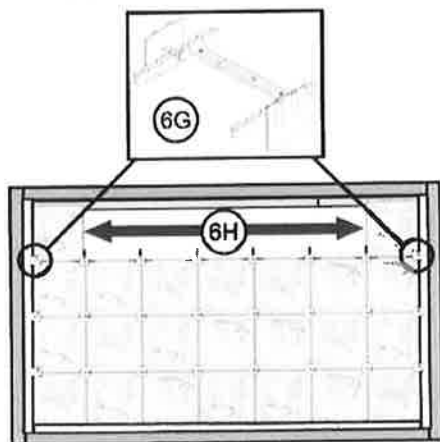
- F. Install the next to last row of block using "H" spacers in place of "REGULAR" spacers. Insert "H" spacers and "FLAT" spacers as shown.



- G. Lay a bed of mortar on top of the next to last row, installing "FLAT" spacers at each corner.

Note: For ease of block placement, you may want to snap off the tab of the "FLAT" spacer before placing both corner blocks.

- H. Install the last row of block starting with a block in each top corner, then work toward the middle. Be sure to apply mortar to both sides of the last block.



- I. Press any mortar that has been forced out back into the joints using a polyfoam brush.

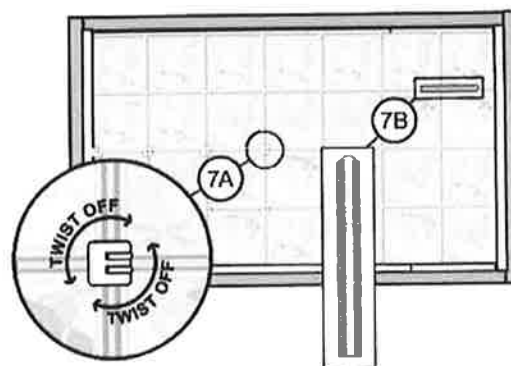
- J. Remove all mortar from the glass block faces.

7. Finishing

Note: Allow the mortar to set up for about one hour before proceeding.

Note: To prevent scratching of the glass DO NOT use abrasive materials for this cleanup.

- A. Twist off the spacer tabs on both sides of the panel.



- B. With moderate pressure, run the striking tool over all the joints. It is best to strike all the horizontal joints first, then the vertical joints so the pattern is uniform. Fill any voids with mortar.

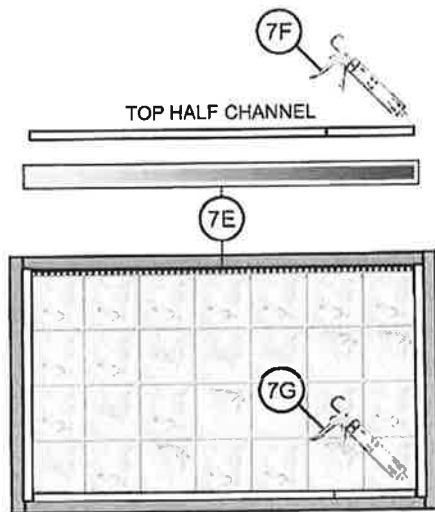
Note: Striking removes excess mortar and compacts the joint to create a smooth, concave, moisture-proof seal.

- C. Use a damp sponge to remove the excess mortar from the block face, rinsing the sponge frequently. Do not be concerned about the dry film that remains on the blocks, it will be cleaned off later.

Note: Allow the mortar to dry for about two to three hours before proceeding.

D. Use a soft, dry cloth to remove the excess film. A common household plastic scouring pad can also be used.

E. Cut the expansion strip to a 1-1/2" width and insert it between the top of the blocks and the frame.



F. Apply sealant to the back of the half-section of channel and install it between the expansion strip and frame.

G. Apply glass block sealant around the perimeter to seal the glass block and channel. Also seal the top channel to the frame at the head.

Note: For exterior panels or wet areas, also seal where the channels meet the framing.

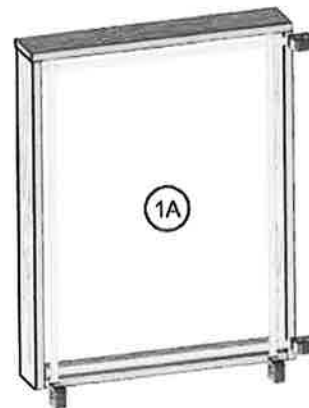
Mortar II System

The tools required for the Mortar II glass block installation system are a margin trowel, mortar pan, 2 polyfoam brushes, sponge, tin snips, screwdriver or power drill, caulking gun, utility knife, metal file, tape measure, 3/8" to 1/2" striking tool, 2' level and rubber mallet.

1. Prepare The Rough Opening

Note: For those glass block applications that begin at floor level, we recommend that you make a curb base as wide as the glass block being used. This will help protect the bottom row of glass block from damage (vacuum cleaners, mops, etc.).

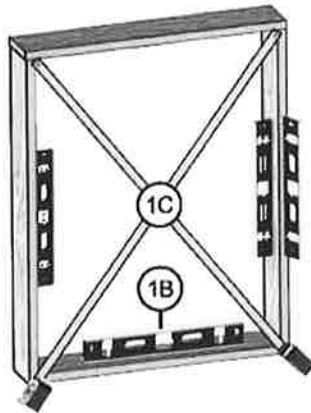
A. Make sure the opening is the correct size. To determine the correct size of the rough opening, add 1/2" to the sum of the nominal block sizes for both the height and width.



Example: Panel (using 8" x 8" block) is fourteen block wide ($8 \times 14 + 1/2" = 112-1/2"$) and ten block high ($8 \times 10 + 1/2" = 80-1/2"$). Rough opening needs to be 112-1/2" wide and 80-1/2" high.

B. Use a level to make sure the opening is level and plumb.

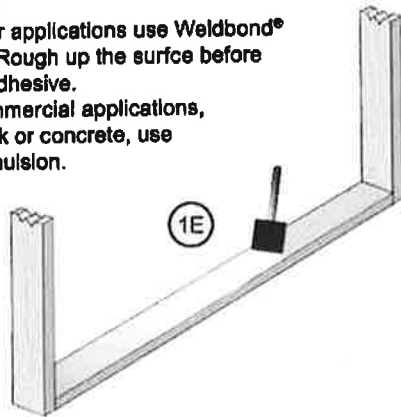
C. Measure the opening diagonally from corner to corner in both directions, and compare the dimensions to check for squareness. These dimensions should be equal within 1/8".



D. If there are any problems with the opening, make adjustments before proceeding.

E. Use a polyfoam brush to treat the sill with latex paint, Weldbond® adhesive or asphalt emulsion as specified below.

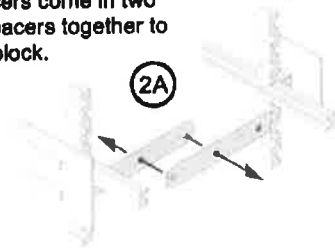
- For wood interior, non-shower applications use latex paint.
- For shower applications use Weldbond® adhesive. Rough up the surface before applying adhesive.
- For all commercial applications, metal, brick or concrete, use asphalt emulsion.



If using Weldbond®, apply mortar to the surface before it cures. Otherwise, let the treated area set up and cure before installing the first row of block.

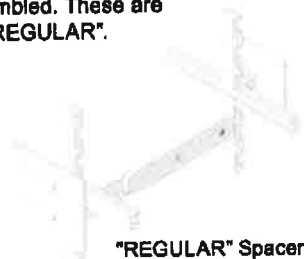
2. Preparation of Universal Mortar Spacers, Panel Anchors, and Expansion Strips

A. Assemble the spacers for the series of block you are installing. The spacers come in two halves, snap the spacers together to fit the width of the block.



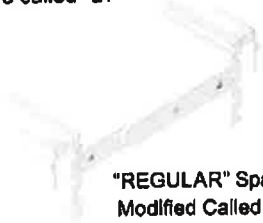
B. Modify the spacers using tin snips based on their location:

- Where four block come together spacers are used as assembled. These are called "REGULAR".



"REGULAR" Spacer

- For the two bottom corners of the panel, orient the spacer with the cross arm down and clip off the upper toothed legs. Clip off the upper half of the twist-off tabs. Cut off the left or right side of the remaining twist-off tab and the smooth legs on the same side. Only two of these spacers are required. Clip off the right set of smooth legs of one spacer, the left set of the other spacer. These are called "L".



"REGULAR" Spacer Modified Called "L"

- Where glass block meet the jambs and curb, (except for the four corners) orient the spacer with the cross arm down and clip off the upper set of toothed legs, and the upper half of the twist-off tab. These are called "T".



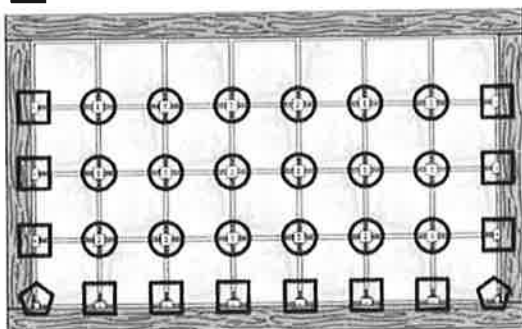
Note: Prepare a supply of "T" spacers before you start, so that your panel construction can continue without interruption.

Note: It is important to file off any burrs.

- C. Dry construct your panel (without mortar) to ensure that your block fits the opening and you have an adequate supply of prepared spacers.

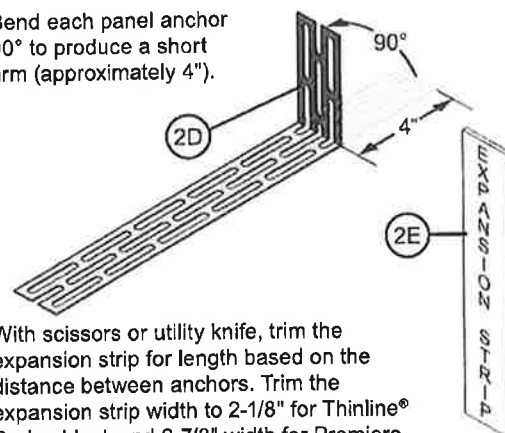
This is a reference guide for where "REGULAR" and modified spacers are used.

- = "REGULAR" Spacer
- ◡ = "L" Spacer
- ◻ = "T" Spacer



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- D. Bend each panel anchor 90° to produce a short arm (approximately 4").



- E. With scissors or utility knife, trim the expansion strip for length based on the distance between anchors. Trim the expansion strip width to 2-1/8" for Thinline® Series block and 2-7/8" width for Premiere Series block.

3. Mortar Preparation

This chart will give you an idea of the number of blocks that can be installed per 50 pound bag of mortar.

White Premixed Glass Block Mortar Number of blocks per 50 lb. bag of mortar					
Block Sizes (Nominal)	4" x 8"	6" x 6"	6" x 8"	8" x 8"	12" x 12"
No. of Premiere Series (4" thick)	34	34	30	26	18
No. of Thinline® Series (3" thick)	42	42	36	32	N/A

Based on 1/4" mortar joints

- A. Mix mortar according to the instructions on the premix mortar bag. When mixed to the proper consistency, mortar should stick to the edge of the glass block when turned on edge. Be sure to read and understand all precautions outlined by the mortar manufacturer. Freshly mixed mortar may cause skin irritation.

Note: Slowly add water to mortar mix. DO NOT mix more mortar than you can install in one hour.

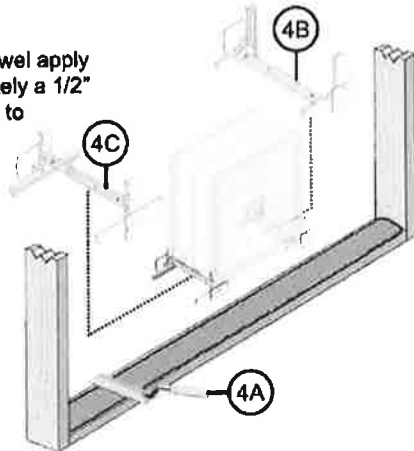
Note: Avoid direct contact when possible and wash exposed shin areas promptly with water. If any gets into eyes, rinse immediately with water and seek prompt medical attention.

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4. Install The First Row

Note: If your project is framed on 3 or 4 sides, complete Steps A thru K. If your project is framed on 2 sides, skip to Step L.

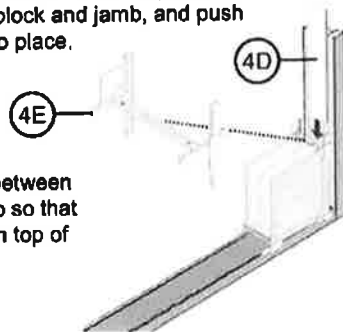
- A. Using a trowel apply approximately a 1/2" mortar bed to the treated curb or floor.



- B. Without applying any mortar to the first block, place an "L" spacer at the lower outside corner of the block so that the spacer cross arm will be at the bottom, between the glass block and the curb.

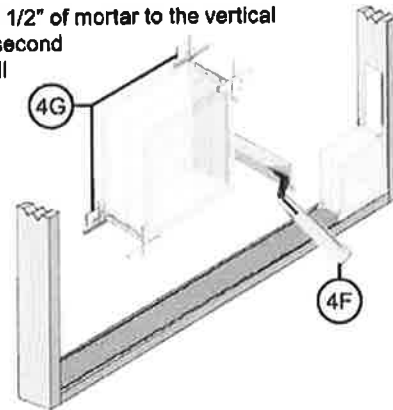
- C. Place a "T" spacer at the other lower corner of the block with the spacer cross arm up.

- D. Slip a 16" long piece of trimmed expansion strip between the block and jamb, and push the block firmly into place.



- E. Slip a "T" spacer between the block and jamb so that the cross arm is on top of the block.

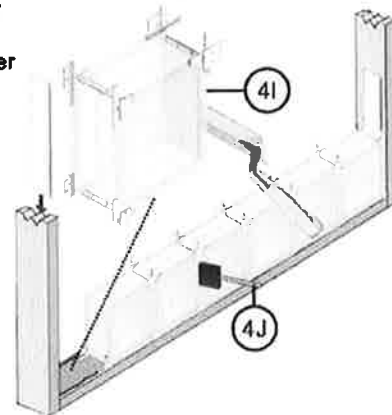
- F. Apply 3/8" to 1/2" of mortar to the vertical edge of the second block that will contact the preceding block.



- G. Place the second block using a "T" spacer on the bottom and "REGULAR" spacer at the top with the spacer cross arm between the two blocks. Push the two blocks together.

- H. Follow this procedure for all remaining block in the first row except for the last block.

- I. Install the last block similar to the first block, inserting an "L" spacer at the lower outside corner so that the cross arm is at the bottom, between the block and the curb.



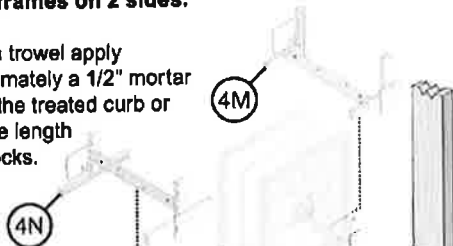
- J. Check periodically to ensure that the glass blocks are straight, level and plumb.

Note: If you find a problem, adjust the block into place with a rubber mallet before proceeding.

- K. Using a polyfoam brush, remove excess mortar and fill any voids on both sides of your panel.

Projects frames on 2 sides:

- L. Using a trowel apply approximately a 1/2" mortar bed to the treated curb or floor the length of 2 blocks.



- M. Without applying mortar to the first block, place an "L" spacer at the lower outside corner of the block so that the cross arm is at the bottom, between the glass block and curb.



- N. Place a "T" spacer at the other lower corner of the block with the cross arm up.



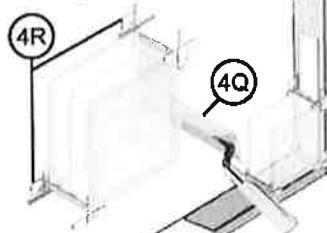
- O. Slip a 16" long piece of trimmed expansion strip between the block and jamb, and push the block firmly into place.



- P. Slip a "T" spacer between the block and jamb so that the cross arm is on top of the block.



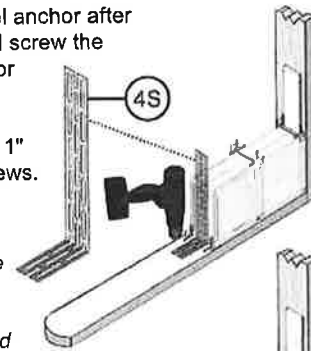
- Q. Apply 3/8" to 1/2" of mortar to the vertical edge of the second block that will contact the preceding block.



- R. Place the block using a "T" spacer on the bottom and "REGULAR" spacer at the top with the cross arm between the two blocks. Push the blocks together.

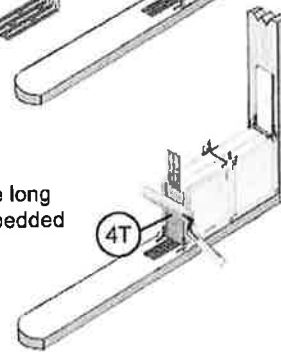


- S. Install a vertical panel anchor after the second block and screw the short leg of the anchor to the curb. All panel anchors should be attached using #12 x 1" zinc-plated head screws. Use two screws per anchor.



Note: If attaching the panel anchors to tile or masonry, plastic screw anchors should be used.

- T. Apply mortar so that the long leg of the anchor is embedded in the vertical joint.

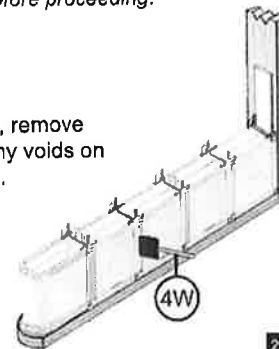


- U. Follow this procedure for the rest of the blocks in the first row, installing a panel anchor after every 2 blocks.

- V. Check periodically to ensure that the glass blocks are straight, level and plumb.

Note: If you find a problem, adjust the block into place with a rubber mallet before proceeding.

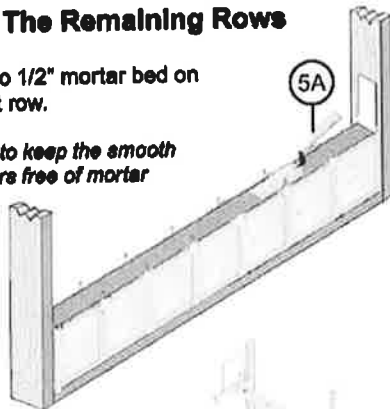
- W. Using a polyfoam brush, remove excess mortar and fill any voids on both sides of your panel.



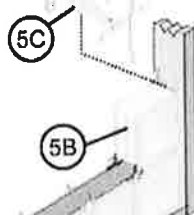
5. Installing The Remaining Rows

- A. Apply a $\frac{3}{8}$ " to $\frac{1}{2}$ " mortar bed on top of the first row.

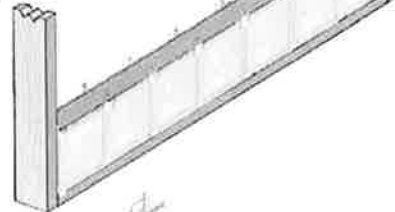
Note: Be careful to keep the smooth legs of the spacers free of mortar to ensure that the next row of block will sit flat on the spacers.



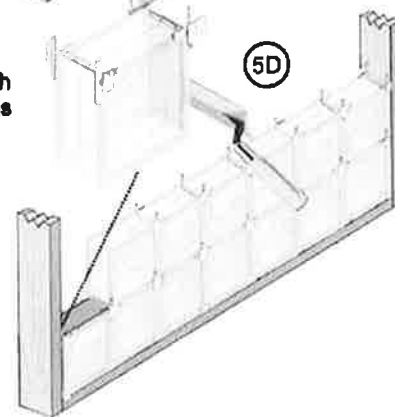
- B. Place a block (without mortar) against the jamb using spacers that are already in place from the previous row, for alignment.



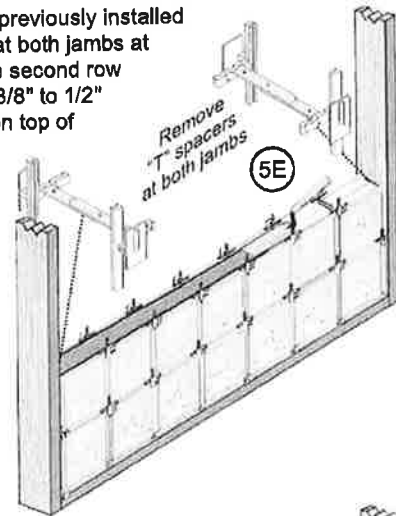
- C. Place a "T" spacer at the upper corner of this block against the jamb.



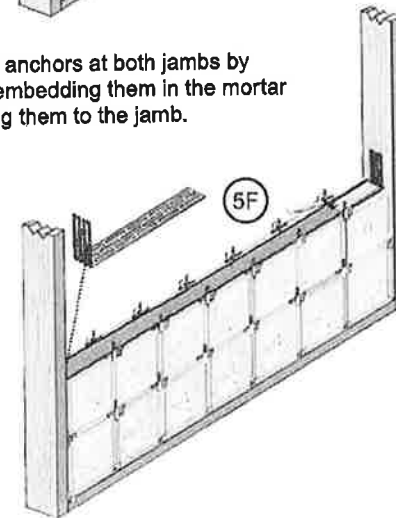
- D. Continue with each block as you did with the first row.



- E. Remove the previously installed "T" spacers at both jambs at the top of the second row and apply a $\frac{3}{8}$ " to $\frac{1}{2}$ " mortar bed on top of this row.



- F. Install panel anchors at both jambs by completely embedding them in the mortar and fastening them to the jamb.

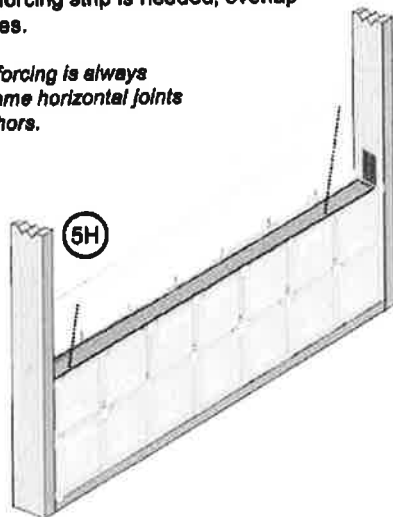


- G. Reinsert the "T" spacers you previously removed.

Note: Additional mortar may need to be applied to cover the anchor.

H. Lightly press panel reinforcing into the mortar bed along the entire length of the panel so that it is completely embedded in the mortar. Where more than one reinforcing strip is needed, overlap them six inches.

Note: Panel reinforcing is always installed in the same horizontal joints as the panel anchors.



Note: If using 12" x 12" nominal size glass block, panel anchors and panel reinforcement should be installed on top of every row, except the top row.

I. Proceed with the remaining rows as previously described.

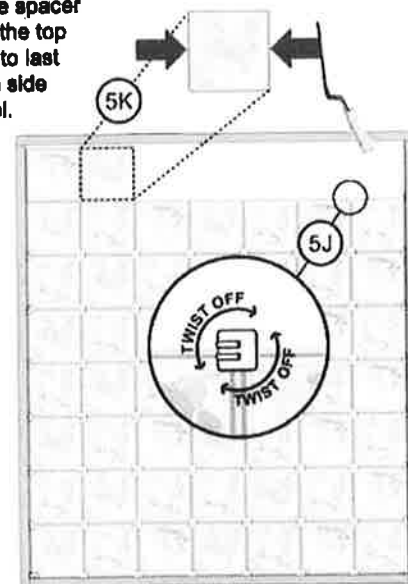
Reminder:

- Install expansion strips along the jambs as you continue.
- Check periodically to ensure that your panel remains level and plumb.
- Use a polyfoam brush to press squeezed out mortar back into the joints.

Note: If your project is not framed at the top, install finishing units in the top row, then skip to the Finishing Instructions. If your project is framed at the top, continue with Step J.

Note: Installing the last row will be different than the previous rows in that you will be installing vertical panel anchors.

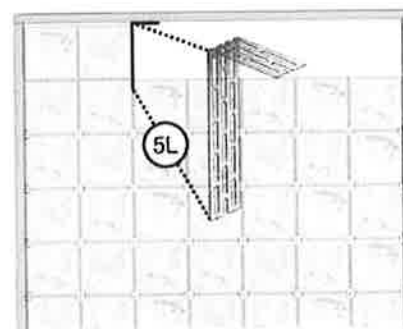
J. Twist off the spacer tabs along the top of the next to last row on one side of the panel.



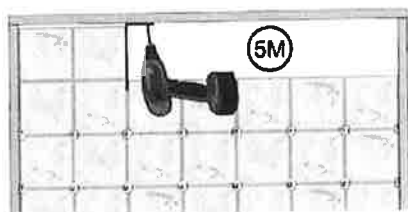
K. Install two blocks, buttering both vertical sides of the second block before installing.

Note: Spacers are not required at the top of the panel.

L. Install the vertical panel anchor with the long leg facing down. Completely embed the long leg of the anchor into the vertical mortar joint.



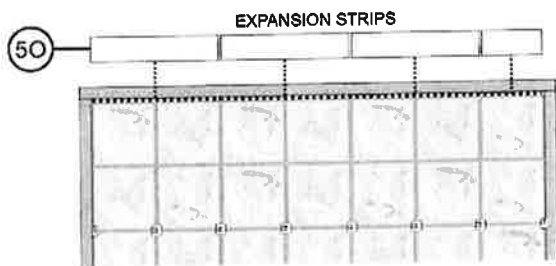
- M. Screw the short leg of the anchor to the top of the opening.



- N. Continue this two block procedure across the final row. After installing the final block, be sure to press back into the joints any mortar that has been forced out.

- O. Install the expansion strip across the head.

Note: Because the top course meets the expansion strip at the head, no mortar is placed at the top edge of these blocks.

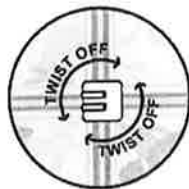


6. Finishing

Note: Allow the mortar to set up for about one hour before proceeding.

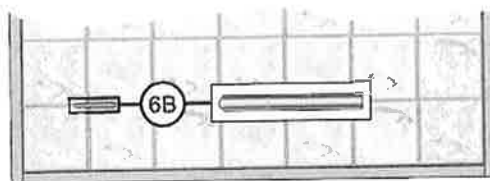
Note: To prevent scratching of the glass DO NOT use abrasive materials for this cleanup.

- A. Twist off the spacer tabs on both sides of the panel.



- B. With moderate pressure, run the striking tool over all the joints. It is best to strike all the horizontal joints first, then the vertical joints so that the pattern is uniform. Fill any voids with mortar.

Note: Striking removes excess mortar and compacts it to create a smooth, concave, moisture-proof seal.



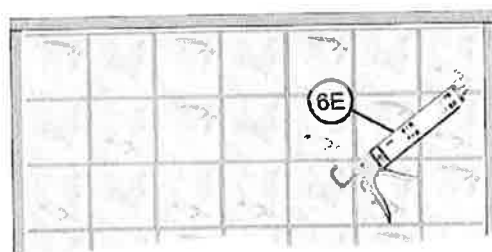
- C. After striking, use a damp sponge to remove the excess mortar from the block face, rinsing the sponge frequently. Do not be concerned about the dry film that remains on the blocks, it will be cleaned off later.

Note: Allow the mortar to dry for about two to three hours before proceeding.

- D. Use a soft, dry cloth to remove the excess film. A common household plastic scouring pad can also be used.

- E. Apply sealant around the perimeter of the panel on both sides.

Note: Where curb was used, you'll want to cover it with trim molding. You may also use moldings at the jambs and head.



- F. If your glass block panel will function as a shower wall, after about a week, coat the mortar joints on both sides of the panel with tile grout sealer for mold and mildew protection.

Maintenance

An important part of the functional beauty of Pittsburgh Corning Glass Block products is that they are virtually maintenance free! There's nothing to rot, rust, peel or paint. All that is needed is an occasional wiping with a damp, soft cloth on interior panels or a hosing on exterior panels. With minimal attention, your Pittsburgh Corning Glass Block will remain sparkling and beautiful for years!

If you need assistance

We hope these instructions are clear and answer your questions about the installation of Pittsburgh Corning Premiere Series Glass Blocks and Finishing Units with the ProVantage® Glass Block Installation System. For additional information on Pittsburgh Corning Glass Block visit our website at **pittsburghcorning.com** or call **1-800-624-2120**.

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