HOMEOWNER REPAIR GUIDE

GLASS BLOCK WINDOWS

Glass block is currently enjoying a revival as a building material. It was commonly used during the '50s and still can be seen in a lot of “art deco” style applications. More recently, however, glass block has found a new usefulness in replacement basement windows, and it is starting to be used more extensively in other settings around the home.

WHY GLASS BLOCK?

Glass block has inherent qualities that make it a good material for certain locations:

Insulates	Because of how it is made, glass block is an insulator.
Secure & waterproof	It is secure, being difficult to break through, and it is waterproof.
Light with privacy	It lets light in, but obscures visibility from the outside. It can be back-lit for dramatic effect.
Ventilation	Small vents can be installed in a glass block panel to allow air flow.
Low maintenance	It is durable, long-lasting, and virtually maintenance-free.

These features make glass block a good choice for basement window replacement. Glass blocks are also being used more frequently in bathrooms, both for shower stalls and to replace bathroom windows.

> **PERMITS**
> In many communities, including Cleveland Heights, installing glass block windows requires a permit, and code requirements will usually specify the number of vents that must be included.

MEASURING & CHOOSING BLOCKS

To install a glass block window in your home, first determine the size of the window opening. If you are replacing a basement window, you'll probably be removing the existing frame, whether metal or wood, and installing the glass block directly against the masonry wall. Other locations may require a wooden frame. Like any other type of window, a glass block panel won't itself support any weight, so the opening you put it into has to be self-supporting. Measure the entire window opening and subtract the thickness of the frame (if any), leaving you the dimensions to be filled by the glass block panel. Take these dimensions to your glass block supplier and choose the blocks you'll need to make the panel.

Glass block comes in many different looks and in two standard thicknesses. The blocks are sold in several heights and widths, so you can combine blocks of different sizes to make a panel of the required dimensions. Each row of blocks will have to be the same length as the other rows, but you can make small adjustments in the thickness of the mortar holding the blocks together to accommodate odd window sizes. Once you have determined the combination of block sizes you'll need and have selected their style and thickness, you are ready to start.

THREE WAYS TO INSTALL

There are several ways to install a glass block window yourself, and each works well for different application and skill levels:

1. You can take your window dimensions to a glass block company and have them assemble the panel for you. You then take the panel home and install it yourself.
2. You can buy the supplies, make the panel yourself in your workshop, and then install it in your opening. If you have a window that will have a wooden frame surrounding the blocks (like a bathroom window), you can build the frame and assemble the panel inside it in your workshop, and then install the whole unit in the wall. For most basement windows, however, it works best to remove the existing framing, build the panel in your workshop, and then install it into the opening, mortaring the panel to the surrounding foundation wall. Even if your panel will be installed in such a frameless opening, you might find it easier to make a “temporary” wooden frame of the desired panel size and construct the panel inside it on your workbench. After the panel has set up, you can take apart the form and install the panel into the window opening. (Assembling the form with screws will make it easier to take apart later.)
3. You can assemble the panel from the individual blocks right in the wall opening. This method can be more difficult, but it may be the only way to install a larger window – glass block panels get heavy fast.

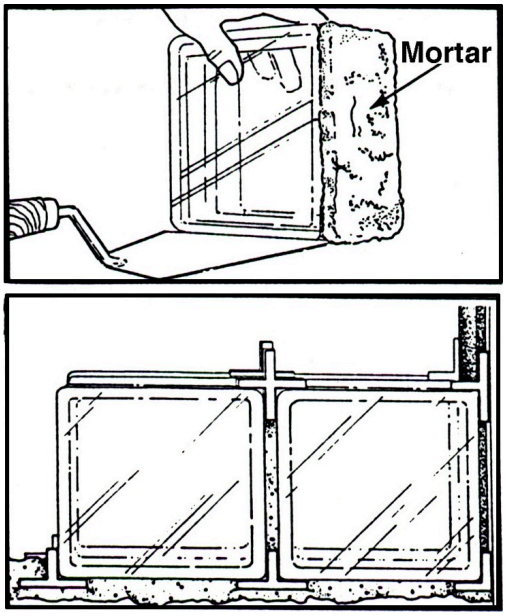
ASSEMBLING THE PANEL

When assembling the individual blocks into a window panel, whether on your workbench or in the window opening, it’s important that the blocks are evenly spaced and that the panel is level and plumb. You can buy spacers designed for glass blocks, or you can space the joints by eye, using a straightedge or level to check each row of blocks.

> **TIP**
>
> Take time assembling the first row because, if it isn't straight, all the other rows will suffer.

To join the blocks, you'll be using a special glass block mortar. This mortar is usually white, but it can be tinted to match the mortar in the surrounding foundation wall by using masonry tint (available at building supply outlets) or latex tint (available at paint stores.)

Glass block mortar is mixed stiffer than ordinary mortar. It's at the right consistency when it holds its shape when formed into a ball in your hand. Before you start each row, lay down a bed of mortar slightly wider and thicker than you want the finished joint to be. Before adding each block, apply a like amount of mortar to one side, to hold the neighboring block in place. Then, twisting slightly and applying pressure, embed the block in the mortar, pushing down until the block is level and plumb, and each mortar joint is at the right thickness. Scrape off any mortar that has been pushed out as you go along. You can use just about any type of trowel to install the mortar between the blocks, but a tuckpointing trowel is helpful for “tooling” (cleaning and smoothing) the joints after the mortar has set up for about ten minutes.



Embedding blocks in mortar

Once the panel has been assembled and the joints tooled, allow the mortar to set for another 15 - 30 minutes. Then, clean off any excess mortar from both sides of the panel and fill in any voids in the joints. If you used spacers, break off the projecting ends, leaving the body of each spacer embedded in the mortar. After you have done all this, clean off any remaining mortar from the face of the blocks and let the panel set overnight for the mortar to harden.

SETTING THE PANEL

If you made your panel on the workbench, you can then place it into the window opening and center it side-to-side and top-to-bottom, using shims if necessary. Check with a level to make sure the panel is plumb and level. Then, if the panel does not have a wooden frame, install mortar all around the panel between the blocks and the masonry walls, working from both sides. Let the mortar set up for a while, and then tool it as you did the panel. Pull out any shims that are sticking out, and complete the installation by cleaning off any excess mortar from the panel.

> **FIRST TIME?**
>
> If you are doing this process for the first time, start with a small window and take your time. Before you know it, you'll be doing large curving shower stalls.

Home Repair Resource center

Home Repair Resource Center empowers homeowners to maintain their homes for sustainable and diverse communities.

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