

# INSTALLATION MANUAL



Thank you for choosing Pan-Brick for your project. We strive to produce the best quality products, so that you will enjoy them and their many benefits for years to come. Please familiarize yourself with this manual before starting your installation. Installation details shown in this manual are a basis guide only. Please contact us to discuss the proper installation for your geographic location. If you have any questions, please call 306-545-0808 for technical assistance, and someone will be happy to walk you through it.

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## **1. INTRODUCTION TO PAN-BRICK:**

PAN-BRICK is a patented exterior non-load bearing wall system consisting of modular interlocking panels. This unique sandwich panel integrates a real fired clay brick veneer complete with finished mortar joints, a core of polyurethane insulation backed by exterior grade plywood sheathing.

PAN-BRICK may be installed over wood or metal studs as well as masonry structures using screw fasteners which are concealed as each succeeding panel is interlocked. Joints are self-sealing and weatherproof; no adhesive or sealant is required. Sealants are required where openings are cut to ensure that water does not migrate behind the panels.

PAN-BRICK is well suited to all types of new or retrofit construction; single and multi-family residential construction, industrial, commercial and institutional structures.

This installation manual has been prepared to give a basic understanding of the installation of Pan-Brick. Always consult your local building code before beginning any renovation work or new construction.

Whenever working with or around tools remember to always wear eye protection as well as an approved respirator.

## **2. TOOLS FOR THE JOB**

- Circular saw with a diamond saw blade used to cut the panel face.
- Circular saw with a carbide blade used to cut the plywood and foam portion of the panels.
- A radial arm saw or large sliding compound mitre saw can also be used.
- Variable speed drill.
- 6" bit of the appropriate style to suit the fasteners being used - This extended bit is require to allow installation of fasteners through the mortar joints of the panels where required.
- Level, square, caulking gun, utility knife, tape measure, chalk line & powdered chalk.
- Metal snips to cut flashings.
- Touch-up tool, silicone, Pan-Brick aggregate & air compressor for touch-ups depending on details used on the project.
- Saw horses
- Extension cords
- Scaffolding (if required)
- Angle grinder with diamond blade

## **3. MATERIAL HANDLING**

- Pallets should be placed to allow easy access yet provide room for scaffolding.
- Pallets should be stored on level ground.
- Panel end lugs are fragile until installed.

On site material should be covered with a tarp to protect the plywood backing from absorbing excess moisture.

#### **4. INSTALLATION OF PAN-BRICK**

##### **(A) GENERAL CONDITIONS**

- A two-man crew, with one installer and one cutter is preferred.
- Walls should be plumb and square.
- Ensure that all studs, lintels and headers are flush.

NOTE: All electrical boxes to be located in the wall should be placed before installation of the PAN-BRICK begins and located in suitable locations.

- Items such as down spouts, light fixtures, dryer vents should be removed or extended as required before the installation begins.
- Building paper or air barrier should be installed as per local building code. If required, you may install this as you progress with the PAN-BRICK installation.
- For new or retrofit installations, a flat, sound nailing surface to install the PAN-BRICK is required. If it is not there you will have to create it by stripping the existing siding or by installing furring strips. Items such as down spouts, light fixtures, dryer vents should be removed or extended as requires before installation begins.

NOTE: If furring strips are used it is important to properly seal this area behind the PAN-BRICK to stop circulation of cold air.

##### **(B) PROJECT LAYOUT**

It is important to layout your project and decide which corner, window and door details will be used on the project, as well as any other accents. It is important to determine where the vertical as well as horizontal mortar joints will be located in relation to all the openings and corners to obtain the most appropriate appearance at the end of your project.

##### **(C) INSTALLATION OF STARTER FLASHING**

The soffit line or a specific opening must be chosen to measure from. Once this has been selected simply measure down from this point for the desired number of brick courses. Where possible use a measurement, which is a multiple of 2-11/16" or 2.666" as this represents the height of 1 brick course and its corresponding mortar line.

- Measure up 17-1/8" from the point you have just chosen as your starting point and snap a level chalk line on the wall at this height. This line will be a reference point for the top of the plywood for the first row of panels.
- Measure down from the line you have just placed on the wall and snap a second level line to use as a reference point for the top of the metal bottom flashing.
- Use a minimum of 4 fasteners for every 10-ft. The flashing should be cut at doors and trimmed at corners so that there is only one layer of metal at the corners.



- Install the starter flashing according to the corner detail chosen

#### (D) CUTTING PANELS

Cuts can be made with a circular saw containing a diamond blade. The panel is then turned over, the line is transferred to the plywood and a cut is made with a circular saw containing a carbide blade. To install panels under and above doors and windows horizontal cuts may also have to be made.

#### (E) FIRST ROW INSTALLATION

- Place complete bottom row of panels around building before, proceeding to 2nd and 3rd rows. This will assist in determining any difficult areas.
- Depending on the project, you will most often begin your installation at a corner. With the corner panel in place, the first full standard panel is ready for installation.
- To install the first row of panels, line the top of the plywood up with the chalk line on the wall and slide the panels together.



Ensure that the panels are pushed together tightly. Check for vertical and horizontal alignment with a level, and install screws. As a rule we recommend 6 fasteners per full panel. Panel fasteners should penetrate wall studs whenever possible. Screws can be installed through the face of the panel through the mortar line by first making a hole through the mortar line and then using the drill with an extension bit to fasten the screw into the plywood and wall assembly the head is in contact with the plywood. Holes are patched with silicone and aggregate as shown.

#### (F) SCREWS THROUGH THE PANEL FACE

Screws can be installed through the mortar lines in the body of the first row of panels and where necessary along the cut edge of panels at openings. The screws are pushed through the mortar line with the assistance of the power drill and the screw is fastened until the head is in contact with the plywood backing. It may also be necessary at the top of the wall under soffit lines.

#### (G) CUTTING OF OPENINGS FOR SERVICE OUTLETS

These should be cut with the appropriate tools before the panels are installed.

#### (H) STAGGERING OF PANELS/SECOND & THIRD ROW INSTALLATION

Second and third row panels require no special lines or alignment. Panels should always be placed such that panel joints are staggered by a minimum of one brick length. Check to ensure panels are pushed together tightly and that they are vertically and horizontally aligned.

#### (I) INSIDE CORNER DETAIL

Inside corners are accomplished by simply butting a cut panel to an adjacent wall and then butting another cut panel to that which has already been installed. Panels are fastened along top plywood lip as well as face screwed where required. The joint where the two panels meet should also be sealed with silicone to ensure that no moisture can enter.

#### (J) OUTSIDE CORNER DETAILS

The corner detail for your project can be done in a number of ways. Each one will work equally well. The decision is more a matter of personal preference.



MITRED CORNER



BEVELLED CORNER



DOUBLE "J" CORNER

(i) MITRED CORNER



In order to make a mitred corner, the panel must be cut at a 45 degree angle. Install the first panel to the corner of the wall. Then test fit the two corner panels to ensure a good fit and make any necessary adjustments. Apply a layer of silicone the foam on both panels and slide the tow panels together, allowing a small amount of silicone to be extruded from the joint. Carefully remove any excess silicone and use brick dust from cutting the two panels to touch up the wet silicone to finish the joint.

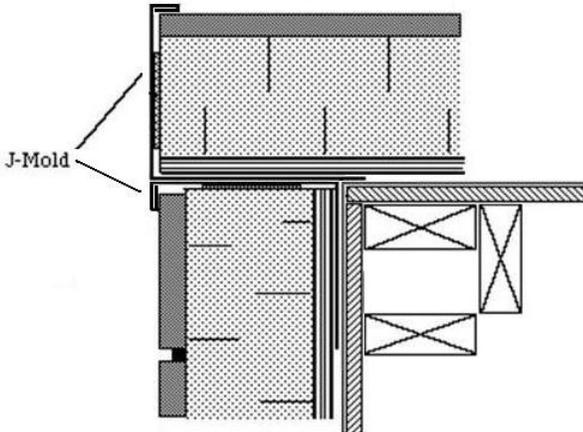
(ii) BEVELLED CORNER



For the beveled corner detail, simply cut the panels at 90 degree angles and install flush with the corner the the surface that you are installing the Pan-Brick on. This will leave you with a 2-1/2" by 2-1/2" inside corner to fill. Cut a 2-1/2" strip of Pan-Brick and then working out from center of the rear of the foam portion, just ahead of the plywood, cut the foam at 45 degree angles to the face of the foam. Test fit the corner piece and make any necessary adjustments. Apply sealant/adhesive to the surfaces of the foam and insert the beveled piece. Then apply silicone to the outer joint and while the silicone is wet, apply the aggregate to the join to make it match the other joints.

## DOUBLE "J" CORNER

The double "J" corner detail is fairly simple in that the panels are cut at 90 degrees and slid into the "J" trim as shown in the adjacent drawing.



## (K) TOUCH UPS AND CREATING MORTAR JOINTS

This is the patching of face screw holes, and damaged mortar lines with a high quality clear silicone caulking and aggregate. Deep holes are first filled with insulation, silicone is applied and aggregate is pushed into the silicone prior to it setting. The aggregate can be applied in several ways but the most effective is through the use of the touch up tool which sprays the aggregate in to the wet mortar joint. This makes the patch indistinguishable from the rest of the panel. Whenever a panel is cut to allow for an opening, it must be sealed to prevent water penetration.

## CAULKING

Caulking of inside corners, doors, windows, and service outlets should be done prior to moving scaffolding if used, and should conform to the following standard. Caulking must be continuous, must fill gaps to a minimum depth of 3/8" and must be even and smooth in appearance

## **5. PAN-BRICK OVER CONCRETE OR CINDER BLOCK**

If the wall is straight PAN-BRICK can be fastened directly over concrete blocks or poured concrete.

Panels are fastened with a power fastener such as Hilti or a mechanical fastener such as a Tapcon.

If the wall is not straight it should be shimmed and strapped.  
PAN-BRICK is then installed as on normal wood or metal studs.

## **6. FINISHED BUILDING CHECK LIST**

The following items should be checked before leaving job site:

- All necessary touch-up to panels has been completed.
- Flashings are not bent or damaged and no excessive gaps exist between panels and flashings.

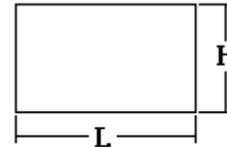
- Panels are free of dust, dirt, or soil which may detract from wall appearance.
- All caulking has been completed.
- Site is free of debris.

## **7. CALCULATING THE MATERIALS FOR YOUR PROJECT**

### **ESTIMATING THE NUMBER OF STANDARD PANELS REQUIRED FOR YOUR PROJECT**

To determine the number of panels needed you can use the

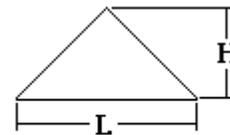
following basic guide. For flat walls, determine the number of rows of panels by dividing the height of the wall (**H**) by 16" and rounding up to the nearest whole number. Next, measure the length of the wall (**L**), measuring from corner to corner to the nearest increment of 4" and rounding up to the nearest whole number. Add 4" for each corner detail. Multiply the number of rows by the length and divide by 48" rounding up to the nearest whole number.



**Flat Wall**

#### Gable Ends:

For gable ends, determine the number of rows of panels by dividing the height of the wall (**H**) by 16" and rounding up to the nearest whole number. Next, measure the length of the wall (**L**), measuring from corner to corner to the nearest increment of 4" and rounding up to the nearest whole number. Gable ends typically have a lot of loss in terms of material because the material that is cut off is difficult to use in other areas and you should never install the panels upside down. The 1" plywood nailing flange should always be at the top of the panel.



**Gable End**

To calculate how much you can reduce the number of panels you need to order, you will need the window and door opening size. Depending on your project and shipping costs, it may be better to have a few extra panels than to be one panel short.

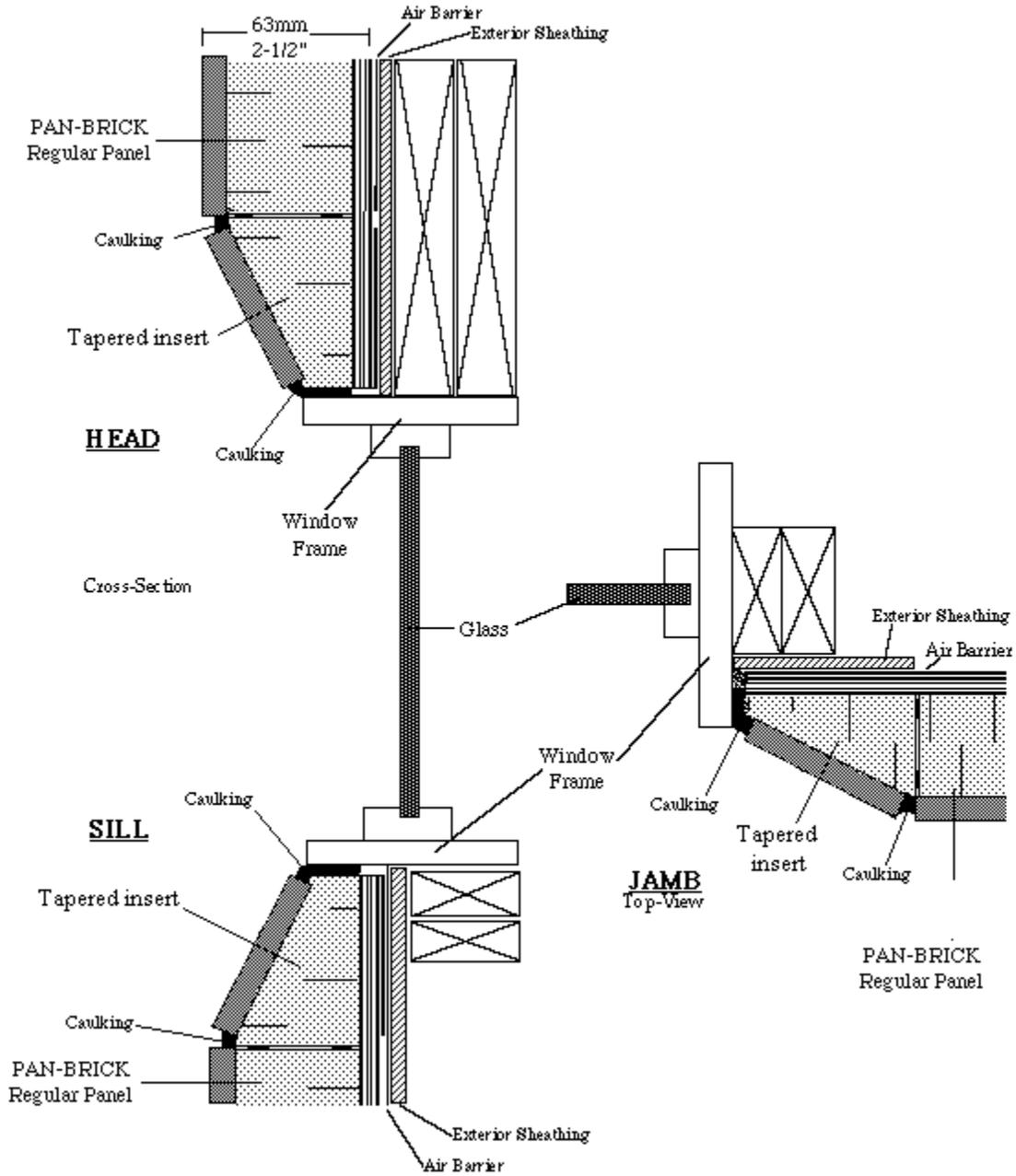
#### TOUCH-UP MORTAR AND AGGREGATE

As a general rule, 1 tube of caulking is required for every 100 sq/ft of PAN-BRICK and 1 bag (25 lbs.) of mortar line aggregate for every 1000 sq/ft.

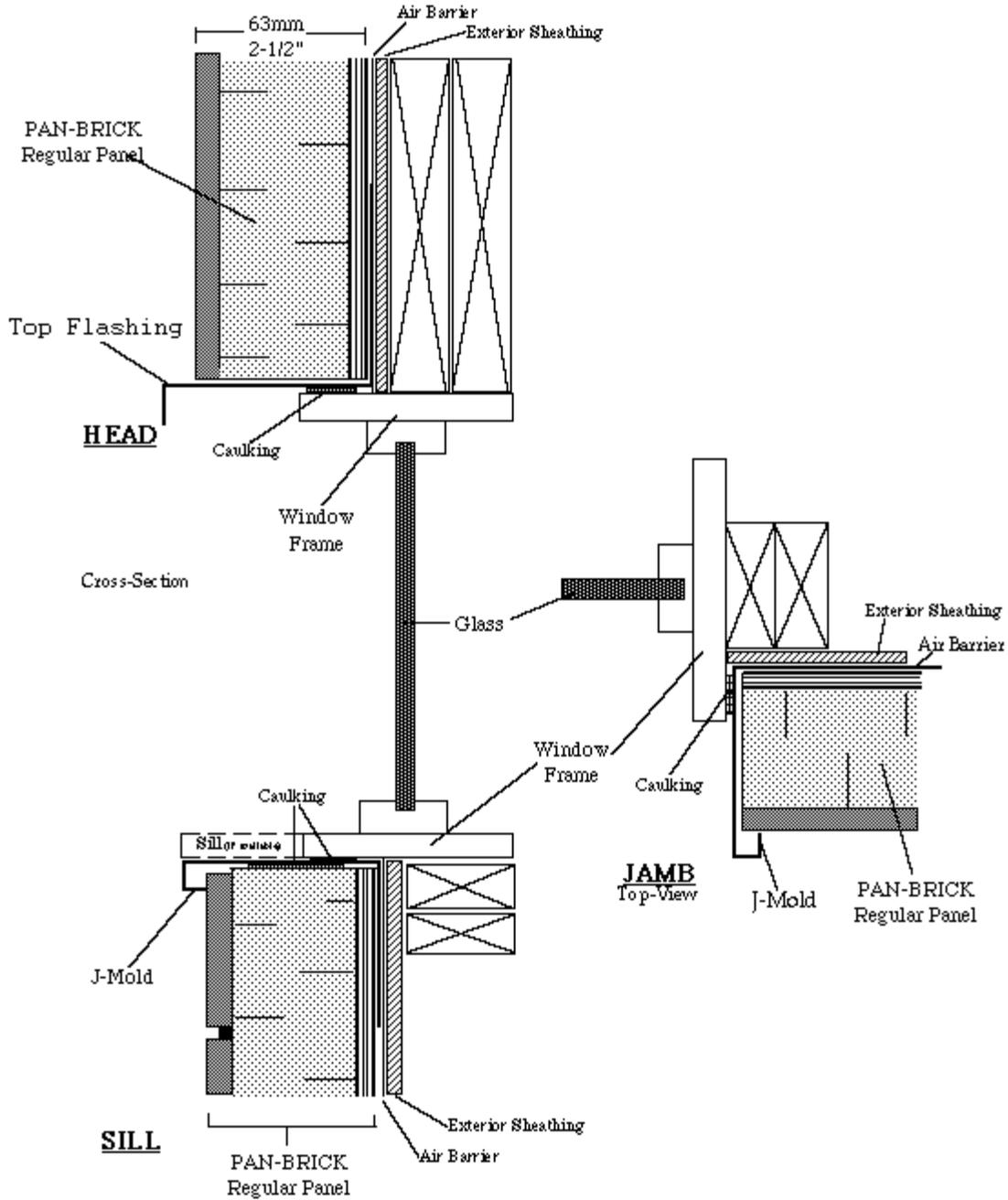
#### FASTENERS

For estimation purposes allow 1000 screws per 900 sq/ft of PAN-BRICK. 1 - 1/4" or 1- 5/8" screws are recommended when PAN- BRICK is to be installed directly to wood or steel studs. Longer screws will be required in those cases where PAN-BRICK is installed over existing sidings or stucco.

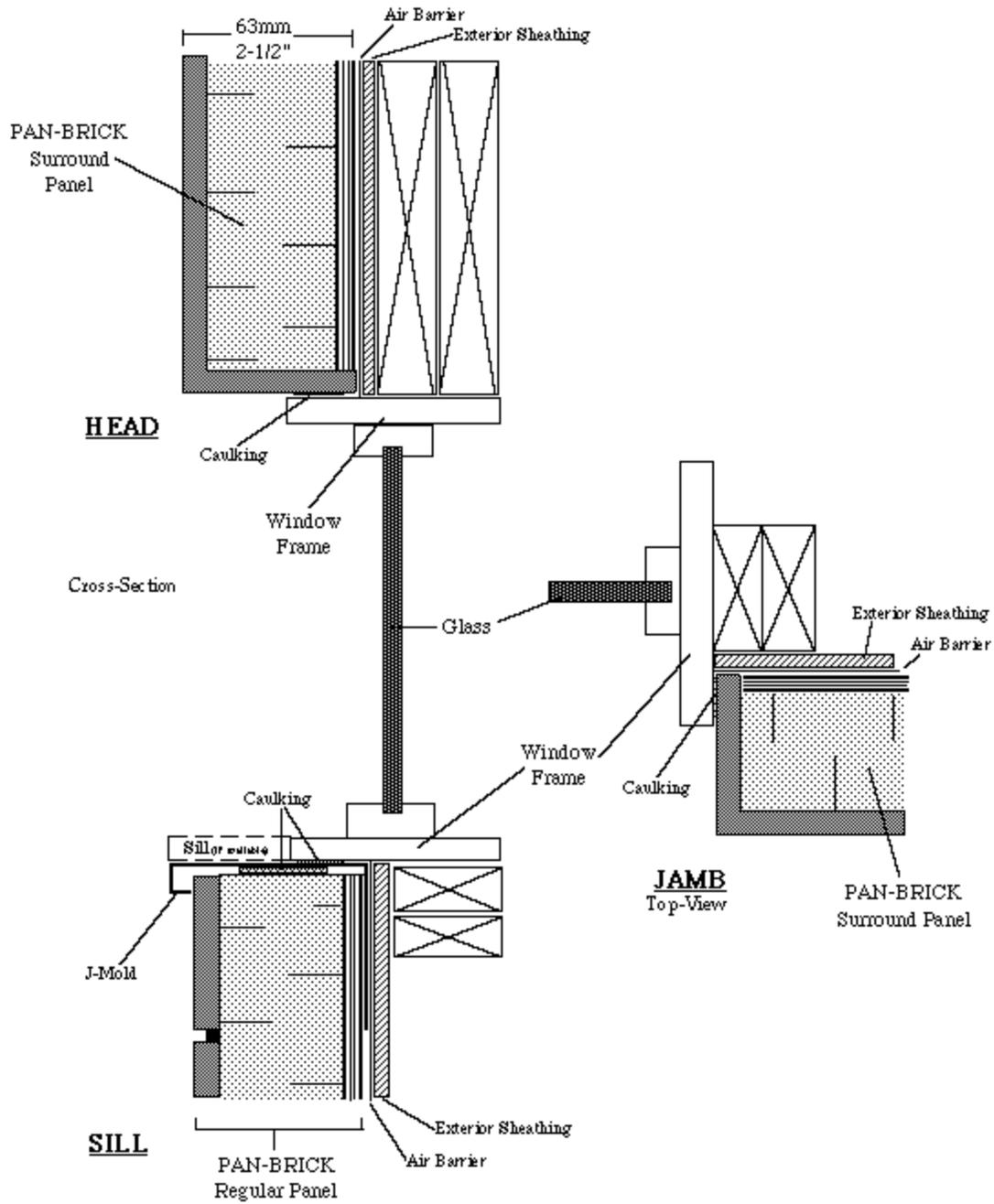
# BEVELLED OPENING DETAIL



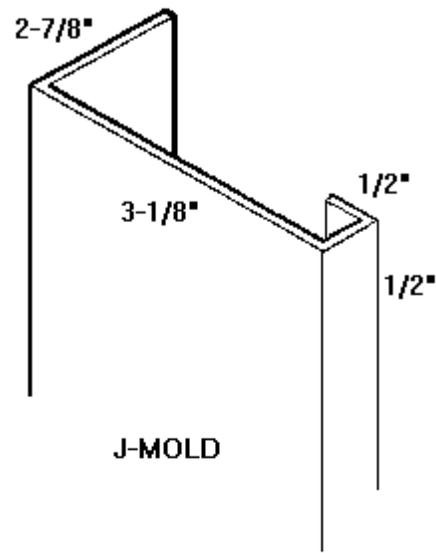
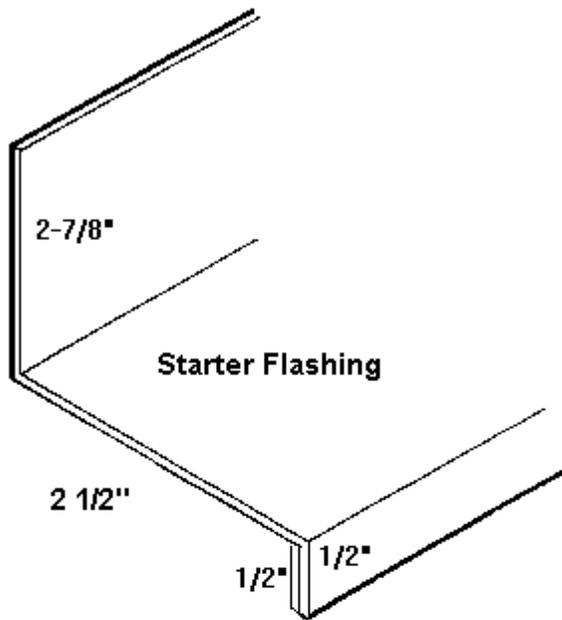
# FLASHED OPENING DETAIL



# BRICK RETURN PANEL OPENING DETAIL



## PAN-BRICK FLASHINGS



## FLASHING OPTION B

