

# GETTING STARTED

## Why Choose the X-Bracket System?

The X-Bracket System by InSoFast® is the first of its kind and is compatible with both spray foam and a range of blown-in insulations. This makes it an effective system for new construction and energy retrofits.

## Project Estimation

The quantity of X-Brackets required is determined by wall square footage. Multiply the height of the wall by the length of the wall, adding a foot to the length of each wall to determine square footage. The per-box coverage will vary depending on the spacing of the X-Brackets and the framing. Below are approximate box coverage areas.

16" O.C. framing & 48" O.C. spacing: 400 sf

16" O.C. framing & 32" O.C. spacing: 265 sf

24" O.C. framing & 48" O.C. spacing: 600 sf

24" O.C. framing & 32" O.C. spacing: 400 sf

\*\*\* Add 2 X-Brackets for each opening \*\*\*

## Selecting the Right X-Bracket

X-Brackets are available in 2 ½" and 3 ¾" depths. The thickness of the bracket you chose will depend on the desired R-Value.

## Bracket Spacing and Furring Strip Selection

X-Brackets can be used with 1x4 or 2x4 furring strips. With 1x4's, the maximum spacing is 32" O.C. and the maximum spacing with 2x4's is 48" O.C. Furring strips can overhang one foot beyond the X-Brackets at the top and the bottom of the wall.

# Fastener/Adhesive Selection

**Wood framed walls:** Install X-Brackets with four 0.120” minimum diameter framing nails or #10 or larger construction screws.

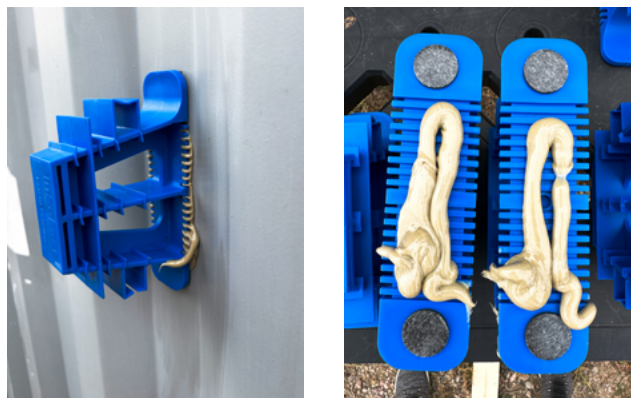
**Concrete walls:** Install X-Brackets with adhesive (Loctite PL Premium 3X or Bostick HDCA) applied in a 3/8” bead in a circular pattern around the perimeter of the glue surface. Double-backed foam tape can be applied to the nailing flange at the top of the bracket to hold it in place while the adhesive cures. Brackets can also be installed with powder-actuated fasteners with a minimum head size of 0.236” and a minimum shank diameter of 0.115”.

**For steel framed walls or shipping containers:** Install X-Brackets with adhesive (Loctite PL Premium 3X or Bostick HDCA) applied in a 3/8” bead in a circular pattern around the perimeter of the glue surface. Double-backed foam tape can be applied to the nailing flange at the top of the bracket to hold it in place while the adhesive cures. Brackets can also be installed with four #10 or larger drill tip screws.

**Attaching furring strips:** Use #8 or larger construction screws. 2 screws are required per X-Bracket.



Installing using nails



Installing using adhesive

# SPRAY FOAM WALL INSTALLATION PROCEDURE

## Wall Preparation

Install sheathing before installing X-Brackets. A WRB is not required for spray foam installation because the closed-cell spray foam functions as a WRB.

## Install X-Brackets

Install the X-Brackets with the required number of fasteners and spacing indicated in the table on page X. The X-Brackets can be installed using screws or pneumatically driven nails.

## Install Furring Strips

Furring strips are installed with screws into the attachment point on the X-Brackets. Ensure the furring strips are not warped prior to installation.



## Bottom of Wall Detail

Install a 1x board with a 1x2 on the bottom of the board and a soffit J-Channel attached to the bottom of the 1x2. Use L-brackets to support this assembly, be sure to overlap over the foundation. After the spray foam is installed, insert vented soffit panels into the J-Channel, then install a soffit F-Channel secured to the ends of the furring strips.

## Inset Window Detail

Install window gutters before window installation. Install window sill pan overlapping the flange of the window gutter. Install the window unit with the bottom flange overlapping the window gutter. Install drainage mat into the window gutter, overlapping the window flange. Tape the sides and top of the window with flashing tape or fluid-applied flashing. Install a window buck around the opening, leaving a  $\frac{3}{4}$ " gap at the window flange so spray foam can overlap the window flange. The bottom sill should be sloping to allow drainage. Install caulk around the perimeter of the window to prevent spray foam from seeping through the crack.



## Outset Window Detail

Install a window buck to buck the window out flush with the face of the furring strips. Install the window sill pan. Install the window unit in the window buck. Tape the top and the sides of the window buck with flashing tape or use fluid-applied flashing.

## Install Spray Foam

Spray the foam to the desired thickness. Please note the top of the foam should be set back  $\frac{3}{4}$ " from the back of the furring strips to allow cross ventilation.



## Wall Penetrations

Wall penetrations can be done before or after the spray foam is applied. If the penetration is done before the spray foam is applied, the penetration will be sealed when the spray foam is applied. If penetrations are made after spray foam is applied, the penetration can be sealed with a can of spray foam.

# SPRAY FOAM ROOF INSTALLATION PROCEDURE

## Roof Preparation

Install roof sheathing before installation of the X-Brackets.

### Rafter Tail Detail

A raised tail truss is required when transitioning from the wall to the roof. The tail allows attachment roof sheathing at the end of the furring strip. A raised tail can be installed in the field or custom trusses can be ordered.



## Install X-Brackets

Install the X-Brackets with the required number of fasteners and spacing indicated in the table on page X. The X-Brackets can be installed using screws or pneumatically driven nails.



## Install Furring Strips

Furring strips are installed with screws. Ensure that the furring strips are straight before installation. For best results, install furring strips before applying spray foam.

## Install Spray Foam

Spray the foam to the desired thickness. Please note the top of the foam should be set back  $\frac{3}{4}$ " from the back of the furring strip to allow cross ventilation.



## Install Second Layer of Roof Sheeting

Spray the foam to the desired thickness. Please note the top of the foam should be set back  $\frac{3}{4}$ " from the back of the furring strip to allow cross ventilation.



## Install Ridge Vent

Install ridge vent per manufacturer instructions.

## Install Roofing

Install roofing per manufacturer instructions.

# BLOWN-IN WALL INSTALLATION PROCEDURE

## Wall Preparation

Install sheathing and air barrier before installing X Brackets.

### Install X-Brackets

Install the X-Brackets with the required number of fasteners and spacing indicated in the table on page X. The X-Brackets can be installed using screws or pneumatically driven nails.



### Install WRB

Install a Weather Resistant Barrier (WRB) over top of the X-Brackets. Ensure it is stretched tight without folds or wrinkles. Staples can be used to hold the WRB in place. Cut the WRB into 4-5' wide strips and staple the excess flap above the brackets to the sheathing. This creates pockets to retain the blown-in insulation.

### Install Furring Strips

Install furring strips over the top of the WRB using construction screws.





## Top of Wall Detail

Install a 2x the same depth as the X-Brackets at the top of the wall. This will retain the insulation and provide attachment for the top of the furring strips.

## Bottom of Wall Detail

Install a soffit F-Chanel at the bottom of the wall. Attach a L-Flashing to the back side of the furring strip and insert the flashing into the F-Chanel to retain the blown in insulation. Install a vented soffit on the front side of the furring strips and slide the vented soffit into the same F-Chanel the L-Flashing was inserted into.



## Inset Window Detail

Install the window in the rough opening. Create a window buck out of  $\frac{3}{4}$ " plywood. Apply Flashing tape or fluid-applied membrane to the window buck and flash it to the WRB.

## Outset Window Detail

Create a window buck with  $\frac{3}{4}$ " plywood. Apply flashing tape or fluid-applied membrane to the window buck to air seal. Install window and flash window to WRB.



## Blow in Insulation

Blow in insulation through slits in the WRB and seal any holes with tape. It is recommended that the insulation be dense packed.



## Wall Penetrations

Wall penetrations should be installed prior to installing the WRB when possible. Seal penetrations to both the air barrier and the WRB. When it is not possible to install penetrations prior to WRB installation, install a PVC sleeve, sealed to the air barrier and the WRB for future penetrations to be pulled through.

# INSTALLING SIDING & EXTERIOR FINISHES

## Vertical Siding

For vertical siding, install the furring strips horizontally if installing with spray foam. If installing with blown-in insulation, bidirectional furring strips are recommended to provide a rain screen. Attach your siding to the horizontal furring strips per manufacturer instructions.

## Horizontal Siding

Install furring strips vertically. Install siding per manufacturer instructions.



## Stucco/Adhered Stone

Install cement backer board over furring strips. Install stucco or adhered stone to the backer board per manufacturer instructions.

## Blocking/Backing

Backing and blocking can be installed anywhere in the wall. For spray foam applications, a 1x4 can be attached to the back of the furring strips so additional furring can be installed. On either spray foam or blown-in applications, metal brackets can be used to attach additional furring strips.

