

STONE PANELS INTERNATIONAL LLC

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INTERLOCKING CHANNEL ATTACHMENT STEEL STUD FRAMING OR FURRING CONSTRUCTION WITH ACCESS FROM PANEL SIDE ONLY

INSTALLATION MATERIALS

- No. 10 Hex-Head Tek Screws
- Glazier's horseshoe shaped shims 1/16 inch, 1/8 inch & 1/4 inch thickness by 2 ½ inch long minimum
- Spray bottles with 25% dish soap, 75% water
- Interlocking Channel Extrusions (ILC) provided by SPI
- Masking Tape
- Various Gauge Wire or Metal Strips to Shim inside ILC's

RECOMMENDED TOOLS

- Screw Gun(s)
- Drill with bits
- 48" Level & 24" Level
- Snips or Linesman Pliers to cut shims
- Circular Saw with dry cut diamond tipped blade
- Screw Drivers (to pry panels when shimming)
- Dead Blow Hammer
- Small Paint Brush to clean debris from ILC's
- Story Poles (see attached description)

FRAMING CONSTRUCTION

Steel stud or furring framing must be designed and installed for maximum deflection limited to L/240, and to not exceed allowable stresses. Lateral support and bridging members must be installed. This system does not provide lateral support for stud framing.

Framing must be erected plumb and true. The maximum variation from a true plane should not exceed 1/8 inch in 10 feet. Defects must be corrected prior to proceeding with panel installation.

Framing members must be located according to shop drawings prepared or approved by the stone panel installing contractor. These drawings must account for panel joint locations in order to provide adequate attachment for each panel. The maximum variation from shop drawing dimensions should not exceed 1/8 inch in 10 feet.

JOBSITE STORAGE

Panels must be stored in a clean dry area, free from contamination. When removed from the packaging crate, they must be placed on a shock absorbent support such as expanded polystyrene for edge protection.

It is recommended that panels be placed so that identification numbers are easily readable when they are removed from the crates. This will minimize the amount of time required to search for panels as they are needed for installing. Reduced handling will also reduce labor cost and the possibility of edge damage caused by bumping and dropping panels.

StoneLite® Stone Panels are durable and impact resistant. However, the natural stone facing is easily chipped at edges and the face surfaces of softer stones can be marred. Softer stones including limestones and marbles can be stained by dirt, mud and other contaminants.

STAGING

Material handling labor is a very important factor for the installer to consider. The majority of installation labor is used for moving panels from the delivered pallet/crate to the final location on the building.

It is strongly recommended that panels should be staged in advance and moved to their appropriate locations to minimize labor during installation. The first panel needed should be located on the outside of an upright sloping rack. All panels should be arranged in the order needed for installing.

INSTALLATION

NOTE: The following suggested instructions are intended for vertical wall panels only. If a horizontal soffit or sill is included, modifications to these instructions will be necessary. The location for Interlocking Channel (ILC) extrusions will be specified on the shop drawings.

1. Following the shop drawings, measure the wall to determine exact panel locations and mark the positions of panel edges at the base of the wall. Check vertical panel edge locations relative to framing locations for assurance that ILC sections will have framing support.

Use a laser or level to establish a fixed elevation for the total construction area. From that elevation, mark on the framing, or existing wall, the exact location of all bottom panel lower edges. The shop drawings will indicate the location of the ILC's from the bottom of the panel.

Using a transit or laser, check the elevation for alignment to find the most outward point(s). This will determine the installing "plane" and the amount of shimming required. Drop a string line (piano wire is recommended for this) from the top of the elevation to the bottom of the elevation. This string line should be set at least 2" from the most outward point of the elevation. This will be your reference line from where you will measure back from to establish the plane for all of the ILC sections and panel faces.

2. Drop a plumb line at the location where installing will begin. Position the vertical edge of the ILC section at the beginning vertical edge as indicated by shop drawings, flush with the line. Clamp the ILC sections in place, then screw attach the ILC sections to the framing, through the groove in the section, at each end and at 24" o.c. maximum or as specified by Stone Panels International LLC shop drawings. Excess ILC length should be cut off and used where possible.
3. Use a "story-pole" to locate ILC sections above the bottom row of extrusions. ILC sections will be located near the top and near the bottom of every horizontal panel joint and spaced at a maximum of 24" o.c. or as shown on the shop drawings. Set ILC extrusions using string lines or a laser to achieve a flat plane. Locate horseshoe shims between the ILC section and the backup as necessary to obtain a flat plane. Clamp the ILC extrusions in place, then screw attach ILC sections through the groove in the section, at each end and at 24" o.c. maximum or as specified by Stone Panels International LLC shop drawings. Excess ILC length should be cut off and used where possible.
4. Spray ILC sections on wall with soapy water or rub a small bar of soap over them for lubrication to assist with panel installation. Set panels above and against the ILC sections, then slide them down so that the section on the panel engages with the section on the wall. On polished or honed stones, suction cups are very helpful in handling the panels. If the panel has a slight amount of bow, it will be necessary to flatten or support it until the ILC section engagement is complete.

5. Installation may progress horizontally or vertically depending on how the panels have been staged. Continue applying a small amount of soap film onto sections for lubrication and to assist with engagement. Careful attention should be paid to properly align panel joints as the panels are installed. It may be desirable to leave shims in the joints until they are caulked to ensure that the panels do not move.

CAULKING EXTERIOR JOINTS

NOTE: It is recommended that testing should be conducted by the sealant manufacturer for assurance that neither sealant nor primer will “bleed” into the stone and cause staining. Allow 8 to 12 weeks for this testing.

1. At caulk joints around panel perimeters push round open-cell polyurethane foam backer rod between panels well into the joint to expose the veneer stone edge plus approximately 3/16 inch width of honeycomb. This should provide for approximately 3/8 inch bond width of sealant to panel, and a 1/4 inch sealant thickness at the center of the joint width.

(CAUTION: Open cell backer rod must be used with stone panels. Closed cell backer rod can emit gas into the joint when the coating is scratched by the honeycomb causing the caulking to bubble at the surface.)

2. Apply primer if recommended by the sealant manufacturer. This primer attaches itself to the stone edge surface, and the sealant then adheres to the primer. Primer will not stick to a dirty surface and it is not a substitute for cleaning.

(CAUTION: Primers are moisture sensitive and will deteriorate quickly when exposed to moisture. They should be purchased in pint containers and stored with caps tightly closed. When exposed to moisture, they form a cloudy white precipitate and must be discarded.)

3. Pour only a ten minute supply of primer into a clean container, and then replace the cap on the primer can. Dip a clean, dry, lint-free cloth into the primer and gently wipe a thin film onto the stone edge surface.

(CAUTION: Application of a thick layer of primer can cause severe loss of adhesion between the sealant and primer. A powdery white film will form on the surface if too much primer has been applied. This film must be removed with a clean, dry, lint-free cloth.)

4. Allow primer to dry. The surface is now ready for application of sealant. If the sealant can not be applied immediately, the surface must be protected to avoid contamination. Some sealants cannot be completely removed from some stones. It may be necessary for adjacent surfaces to be carefully masked or taped to prevent sealant from getting on the surface.

5. Sealant should be applied in a continuous operation from a caulking gun. A positive pressure, adequate to fill the entire joint width, should be used. This can be done by "pushing" the sealant bead ahead of the application nozzle. Within 10 minutes after application, tool sealant into the joint. This spreads the sealant against the back-up material and the joint surfaces to obtain compaction to the panel edges. This also fills voids in the aluminum honeycomb and provides a secure bond to the honeycomb.

Do not use liquid tooling aids such as water, soap or alcohol as they may interfere with the curing or adhesion of the sealant.

It is critical that the sealant fill the entire joint or cavity and that it firmly contact the panel surfaces. If this is not done, poor adhesion will result and sealant performance will be weakened.

Avoid the technique of scraping off excess sealant which pulls sealant out of the joint and prevents bond to the panel edges.

6. Masking or taping must be removed within ten minutes after tooling. If a solvent will be used for cleaning, consult Stone Panels International LLC for recommendations to avoid staining the stone surface and/or adversely affecting the sealant.

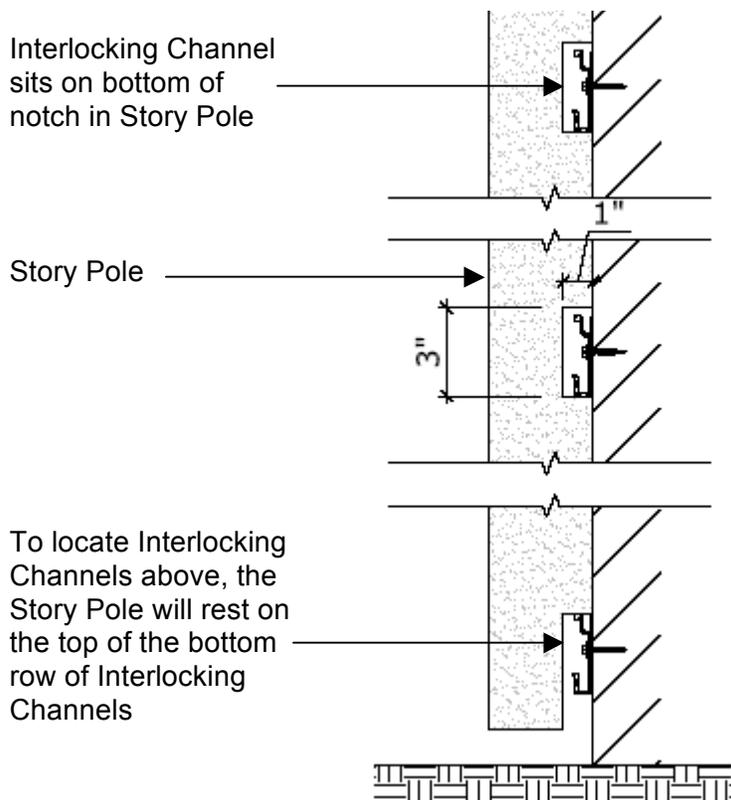
STORY POLES

Story poles can be very helpful when working on large exteriors where interlocking channel sections or other continuous rows of clips are used. Story poles are basically long pieces of wood or metal with notches cut into them to position the extrusions on the wall. They are usually worked with in pairs, one for each side of the extrusion. When dealing with high walls it may be necessary to have several story poles to reach the top of the building.

Care should be taken when making multiple story poles to make sure they match. Even a little variation can cause problems as work progresses up the building. For this reason it is recommended to use aluminum or another metal to make the story poles. At a minimum, the elevation of the extrusions should be checked at each floor line to ensure errors have not occurred.

When possible it is best to anchor the story poles to the wall and feed the extrusions through the slots. This eliminates errors introduced from movement of the story poles. The less movement in the story poles the more accurate the extrusions will be placed.

To make a story pole, cut a notch in a piece of wood or metal so that the pole will sit on top of the first row of extrusions. The additional notches (1" x 3") should be cut so that the bottom of the extrusions above will sit on the bottom of the notch.



FIELD CUTTING STONELITE™ STONE PANELS

RECOMMENDED TOOLS & MATERIALS

- Circular Saw with dry cut diamond tipped blade
- Masking Tape
- Straight Edge
- Angle Grinder with 4 1/2" dry cut diamond tipped blade
- Jig Saw

Note: Dry cut diamond tipped blades are available at most hardware or masonry supply stores. It might be necessary to get an adapter to make a dry cut diamond tipped blade fit a 4 1/2" angle grinder depending on brand.

STRAIGHT CUTS

With proper care, field cutting StoneLite™ Stone Panels is no more difficult than cutting a sheet of plywood. The main concern while cutting a panel is to protect the stone from being scratched. The line to be cut and any area in contact with the saw should be covered with masking tape prior to cutting. It may also be helpful to mask or otherwise cover the bottom of the saw to prevent scratching.

Once the area to be cut has been properly covered with masking tape, the lines to be cut can be marked on the masking tape. Marks should never be made directly on the stone as some inks may bleed or otherwise stain the stone. When making long straight cuts, it is often helpful to clamp a straight edge such as an angle to the panel to act as a guide for the saw. Again masking tape should be placed under the straight edge to prevent scratching. All marks for cutting should be double checked as it is very expensive to replace a panel once it has been cut incorrectly. Care should be taken to note on which side of the line the saw blade will be traveling so the panel is not cut too small.

The panel is now ready to be cut. Place the circular saw with a dry cut diamond tipped blade against the straight edge, if used, and proceed slowly along the previously marked line. On certain stones, especially marbles, a fast cutting rate will chip the edges of the panels. If excessive chipping occurs try slowing down the rate at which you push the saw blade through the panel. Once finished with the cut, remove all masking tape from the face of the stone. Remove any glue residue by lightly rubbing the panel with a soft cotton cloth soaked with MEK (Methyl Ethyl Ketone) available at most hardware stores. A razor blade can also be helpful when removing glue residue as long as care is taken not to scratch the stone.

CUT-OUTS & IRREGULAR SHAPES

Cut-outs such as for electrical outlets are best done with a 4 1/2" dry cut diamond tipped blade on an angle grinder. The panel should be masked and marked as noted above. To start a cut at the middle of the panel, start the angle grinder/saw at the center of the cut-out and push the saw blade straight down along the line just through the stone. Now proceed cutting down the line to the stopping point, reverse directions cutting down to the stopping point at the other end of the line. Repeat for the other three sides of the cut out.

Once the face stone has been cut, a jig saw can be used to cut the back skin of the panel. From the stone side of the panel, force the jigsaw blade through the cut in the stone penetrating the back skin. It may be necessary to start the jig saw while the blade is through the stone against the back skin to get it to penetrate the back skin. Now cut the back skin and remove the cut-out portion of panel. Remove the masking tape as noted above.

If a jig saw is not available to cut the back skin of the panel, the angle grinder with the diamond tipped blade can be used to cut the back skin. After cutting the face of the stone, turn the back of the panel over. The outline of the cut on the other side should show through the skin. Cut the skin around the outline and then punch out the cut-out from the front side. The honeycomb will tear very easily once the stone and skin on the front and the skin on the back are cut.

Irregular shapes and curves can also be easily cut with a 4 1/2" dry cut diamond tipped blade on an angle grinder. Mask and mark the panel as noted previously. Carefully layout the shape and cut with the diamond tipped blade in an angle grinder. Cut the back skin as noted previously. If the edges are left ragged or chipped, they may be smoothed with a belt sander with a medium to coarse grit sanding belt. Since most marbles and limestones are very soft, care should be taken not to remove too much material with the belt sander.