LEXAN™ THERMOCLICK™

Technical & Install Guide

EASY BUILDING PRODUCTS

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About Easy Building Products

Family operated and Canadian owned. Easy Building Products is a leading metal roofing manufacturer in rural Ontario with 40 plus years of experience in high quality roll-formed steel roofing and siding products.

Established by Mr. John Beimers in 1990 with one thought in mind, “To make metal roofing products easy, strong and life lasting”. In the beginning John brought his years of experience with corrugated pipe, metal roofing sales and coupled that with his entrepreneurial love for business and strong work ethic to bring Easy Building Products from a simple “run from home” business to a full-fledged multi-line company with all your metal roofing needs.

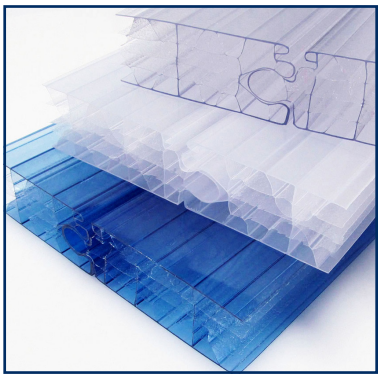
In 2017 Mr. John Beimers passed the reins on to Colin Wielinga, and Dan Vanderlaan. Committed to maintaining the same values, and customer appreciation we are striving to have Easy Building Products be your main supplier for metal sheeting for years to come.

For over two decades our customers have found commitment, quality and dedication are more than just words at Easy Building Products. They are key factors in our service based thinking that spell success for our customers. Including our family values with our industry leading advice, competitive pricing, quality products and prompt service will always be our goal.

What is LEXAN™ THERMOCLICK™?

LEXAN™ THERMOCLICK™ interlocking polycarbonate sheets provide the building and construction industry with new ways to meet the demands for increased energy in living and working environments. LEXAN™ THERMOCLICK™ sheets not only help reduce heating and cooling costs, but they can also help reduce greenhouse gas emissions like CO2.

These energy-saving multiwall sheets feature a tongue and groove connection, including a groove for double-sided tie on the inside. This inter-connecting sheet system eliminates the need for vertical profiles, reducing material and labor costs while enhancing aesthetics.



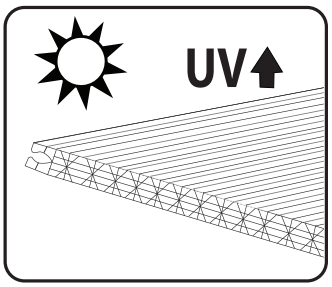
40mm Product Profile

- ***Tongue and Groove Connection***
- ***UV-Protected Outer Surface***
- ***Good Light Transmission***
- ***Excellent Thermal Insulation***
- ***Good Light Transmission***
- ***High Impact Resistance***
- ***Extremely High Stiffness***
- ***Long-Term Weatherability***

Available in a wide range of colors, LEXAN™ THERMOCLICK™ high-performance sheets allow for designs that are visually striking yet extremely practical. Lighter, stronger, and less expensive than glass, a polycarbonate window system is an excellent alternative to traditional glazing in applications such as clerestories, curtain walls, window walls, and interior partitions.

Performance of LEXAN™ THERMOCLICK™

UV-Protection



LEXAN™ THERMOCLICK™ features a proprietary UV-protected surface on one side of the sheet. This UV protection prevents ultraviolet rays from deteriorating the polycarbonate and promotes long-term optical quality. **When installing LEXAN™ THERMOCLICK™, it is important to have the UV-protected surface, indicated on the masking, facing outwards or towards the sun.**

Thermal Insulation

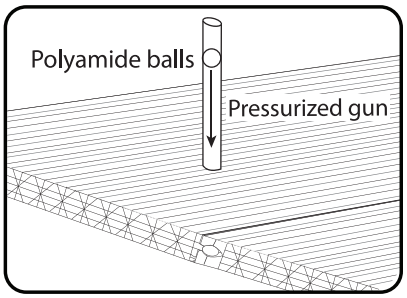
The multiwall structure of the LEXAN™ THERMOCLICK™ sheet provides excellent thermal insulation properties, offering potential advantages where the amount of energy transmitted through the glazing material is a major building consideration.

Impact Strength

Capable of withstanding extreme weather conditions, the LEXAN™ THERMOCLICK™ polycarbonate sheet has outstanding impact performance over a wide temperature range of -40°F to +212°F.

Hail Resistance

As a glazing material, LEXAN™ THERMOCLICK™ has outstanding impact strength and performance, withstanding changes in weather without breaking or buckling. In rigorous testing simulating hailstorms with stones of various diameters, LEXAN™ THERMOCLICK™ sheets showed no signs of significant damage. ***(Please see product-specific warranty for storm damage coverage.)***



PRODUCT	WIDTH	LENGTH	THICKNESS	WEIGHT SQ. FT	HAIL IMPACT	TEMPERATURE RESISTANCE	R-VALUE / U-VALUE
40mm 	19.68”	38.7’	1.57”	0.82	diam 0.79” v > 69ft/sec	-40 up to 212°F	R-4 / U-0.25
Coeff. of linear thermal expansion 3.75 x 10^5 in/in °F | Test Method: DIN 35752							

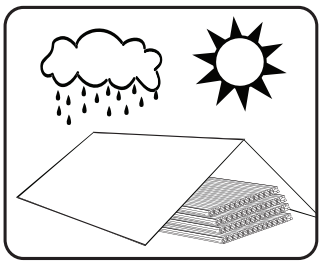
Chemical Resistance

Resistant to some chemicals and non-resistant to others, multiwall polycarbonate sheets are generally unaffected by acids, alcohols, glycols, mineral oil, animal and vegetable fats, kerosene and non-abrasive cleaners. Check with the manufacturer prior to use or exposure.

Multiwall sheet is affected by benzene, petrol, ketones, acetone, phenols, chlorinated and aromatize hydrocarbons, petroleum-based paints, abrasive cleaners and solvents acetaldehyde, acetate acid, acetone, acrylonitrile, ammonia, hydrogen sulfide, benzene, benzoate acid, benzoate alcohol, calcium nitrate bromoxynil, phenol, carbon disulfide, carbon tetrachloride, 5% potassium hydroxide. Solutions, 5% hydroxide solutions or caustic soda, chlorobenzoate, chloroform, cresol, cyclohexanone, cyclohexene, dimethyl formamide, dioxathion, ethylamine, ethyl ether, 2-ethylene, chlorohydrin, gasoline, methyl methacrylate, nitrobenzene, benzoate methylglyoxal, trichloroacetic acid, xylene, ammonia hydroxide, methylethylketone, dichloromethane, polyvinyl chloride, potassium hydroxide, sodium hydroxide and nitric acid.

Transportation, Handling, and Storage

Transportation



- Use a sturdy pallet (or wooden crate) that is as long as the longest sheet.
- Stack horizontally starting with longest sheet on the bottom (longest to shortest).
- If using a pallet, secure the polycarbonate sheets to limit movement during transportation.

Handling

- Even though polycarbonate is durable, protect sheets when handling.
- To prevent scratches or damage to the sheet's surface or edges, pick up and carry instead of dragging sheets on the ground.
- Do not walk, jump, or drive on sheets!

Storage

- It is important to protect sheets against atmospheric influences like sun, rain, etc.
- Store sheets on a flat, raised surface preferably in a cool, dry place indoors.
- If kept outdoors, store sheets in a cool and dry place out of direct sunlight.

- Lay sheets flat and straight, stacking shorter sheets on top of longer sheets.
- Cover sheets with an opaque material that does not absorb or conduct heat.
- Allow for good ventilation to minimize heat and condensation buildup.

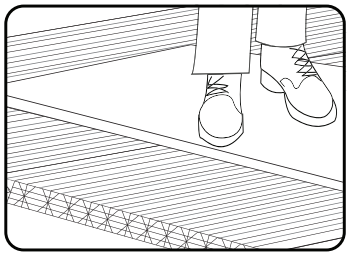
Note: *Original crating is not sufficient protection from solar heat gain damage.*

Care should be exercised when handling and transporting sheets. Keep sheets out of direct contact with sunlight, cement, PVC, and paint. Cements and paints are extremely incompatible with polycarbonate. Thick wooden boards work well to isolate sheets while transporting or storing.

Before You Start

Safety Tips

For safe installation of LEXAN™ THERMOCLICK™ sheets, use ladders, protective goggles, and other necessary safety equipment. If you must walk or kneel on sheets during installation, use a sturdy board long enough to span three structural supports. Never walk on installed sheets or leave unfastened sheets unattended.



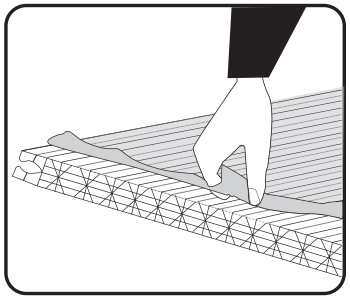
Installation Tools

Common tools needed include: circular saw with a fine-tooth blade, tin snips, utility knife, mallet, drill w/ long metal bits, clamps, tape measure, level, caulk gun, sawhorses, ladder, safety glasses, and gloves.

Protective Film

LEXAN™ THERMOCLICK™ sheets come with a protective film. This film protects the sheets from scratches and provides important product information, such as which side of the sheet is UV-protected.

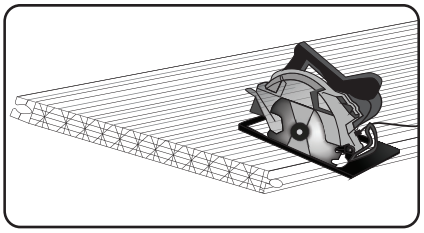
Note: *If the masking is stuck to the sheet, rub with a soft cloth wetted with Fels-Naphtha or isopropyl alcohol. Pull off the film and follow immediately with a mild soap cleaning and a thorough water rinse. Do not use sharp objects or other chemicals to remove masking.*



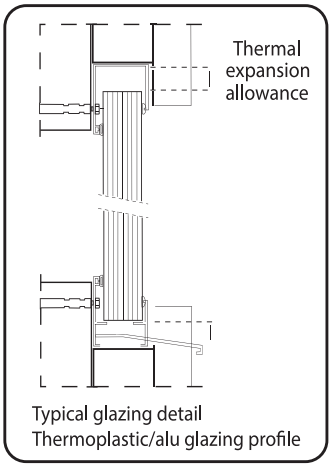
Cutting or Sawing

Light in weight, LEXAN™ THERMOCLICK™ sheets can be easily cut with most standard workshop tools. This includes a circular saw or a hand hacksaw with a fine-tooth blade.

- Before cutting, clamp sheet to a work surface to avoid undesirable vibrations.
- Panel height: Measure the rough opening and take the height less 1-1/2" for frame.
- Quantity of panels: Take horizontal opening dimension and divide by panel width (19").
- Cut at a high speed but a low advance rate. A fine-tooth blade with at least 10 teeth per inch is recommended for a smooth cut. A plywood blade is a good choice.
- Prior to installing, blow dust from sheet surface and flutes with compressed air or a vacuum.



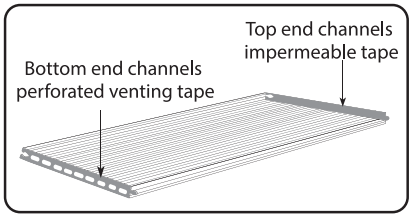
Note: *For thermal expansion, before cutting sheet to size, take into account a clearance of approximately 0.375" per 10 linear foot between sheet top edge and top glazing profile platform, and between the first and last sheet side and the side glazing profile platform.*



Edge Sealing

For standard glazing applications, seal off the top and bottom end channels (flutes) of a LEXAN™ THERMOCLICK™ sheet with the recommended tape to minimize dust and moisture build-up.

- For the top end of the sheet, seal off the channels (flutes) with a strong impermeable two (2) inch wide aluminum tape with an all-weather adhesive.
- Use a two (2) inch wide perforating venting tape made of a durable non-woven material to seal off the bottom end channels (flutes) of the sheet.



Note: *Clearance between the end of the LEXAN™ THERMOCLICK™ sheet and the sash profile platform helps to provide additional condensation drainage.*

Install Components

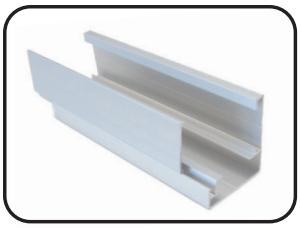
Before beginning your project, confirm you have all the necessary install components for a simple and effective installation. For best installation results, it is recommended to use an aluminum glazing profile system in combination with the LEXAN™ THERMOCLICK™ sheet.

- Aluminum (6005A-T5) install components provide an easy and effective installation process. This simple aluminum trim system is not thermally broken. Typical trim wall thickness is .080".

Aluminum Base & Snap Trim Closure 'Cap':

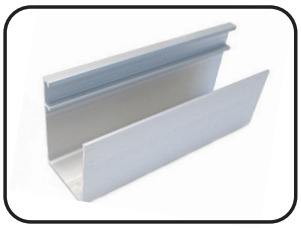
The base assembly is a two-piece assembly and is used along the lower portion of the frame (sill) and up the sides of the frame (vertical jambs).

- Two (2) pieces: the main 'base extrusion' and the 'snap trim closure (cap).'
- To determine project needs: take total length of lower portion and divide by twelve (12) feet to get quantity of lengths required. Cut offs can be used along far left and right sides. Cut offs can also be used to minimize joints and determine quantity of additional twelve (12) feet lengths required.



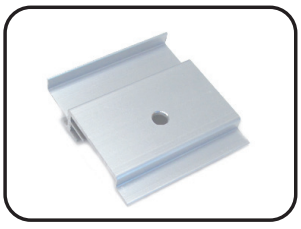
Aluminum U-Profile:

- The U-profile is used along the upper portion of the frame (head).
- To determine project needs: take total length and divide by twelve (12) feet for quantity of lengths.

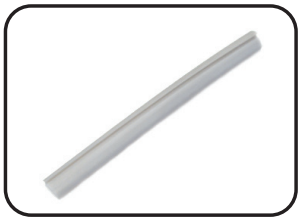


Aluminum Clip:

Metal fastener clips are used where two LEXAN™ THERMOCLICK™ sheets join at horizontal running girts.



Sealing Gasket:



The gasket pressure fits into the aluminum tip as it hits outside the polycarbonate, creating a weather tight seal.

- To determine project needs: take total linear footage of the frame perimeter and divide by the feet per roll for total quantity of rolls.

Solid and Vent Tape:

Sealing the open ends of a LEXAN™ THERMOCLICK™ sheet with a two (2) inch impermeable aluminum and a two (2) inch perforating venting tape is important to minimize bugs, dirt, dust, and moisture build-up in the flutes.

If you have any questions concerning the install components required for your project, please contact Easy Building Products.

Structural Design Guidelines

Wind and Snow Loading

Wind Loading

Wind speed is used to determine the actual loading upon glazing sheets. Wind loading is obtained by multiplying the dynamic wind pressure by the pressure coefficient. Determining pressure coefficients requires knowledge of form and building type, glazing height, and shape of glazing (flat, inclined, or curved). **Contact your local building code officials to determine wind load requirements.**

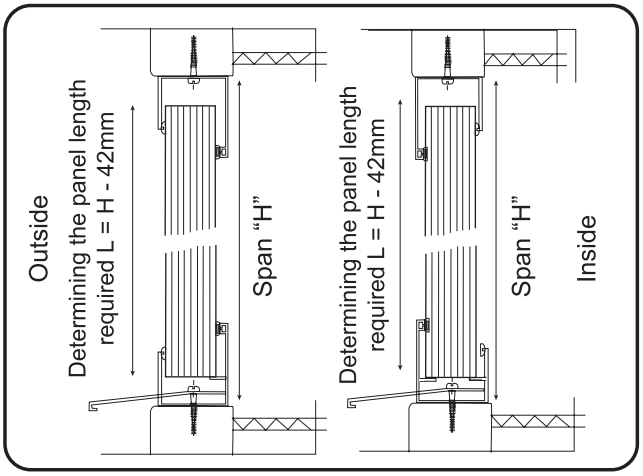
Vertical Wall Glazing

Using an aluminum glazing profile system, LEXAN™ THERMOCLICK™ sheets can be installed either from inside the building or from the outside.

Maximum Recommended 'H' Span

The following chart provides information on glazing recommendations for installing LEXAN™ THERMOCLICK™ sheet without intermediate purlins.

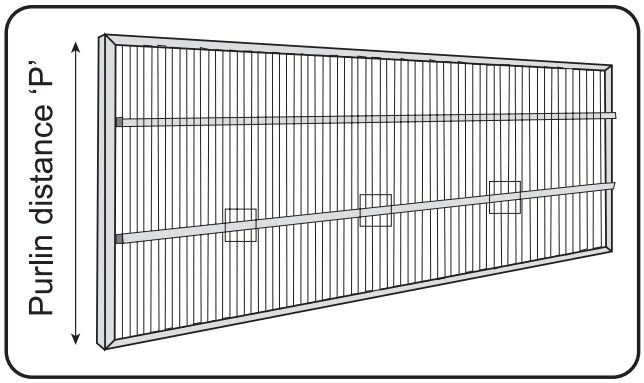
WIND SUCTION IN LBF/FT^2	MAXIMUM RECOMMENDED SPAN 'H' IN FOOT
12.5	7.9
18.8	6.9
25.0	5.9
31.3	5.2
37.6	4.6

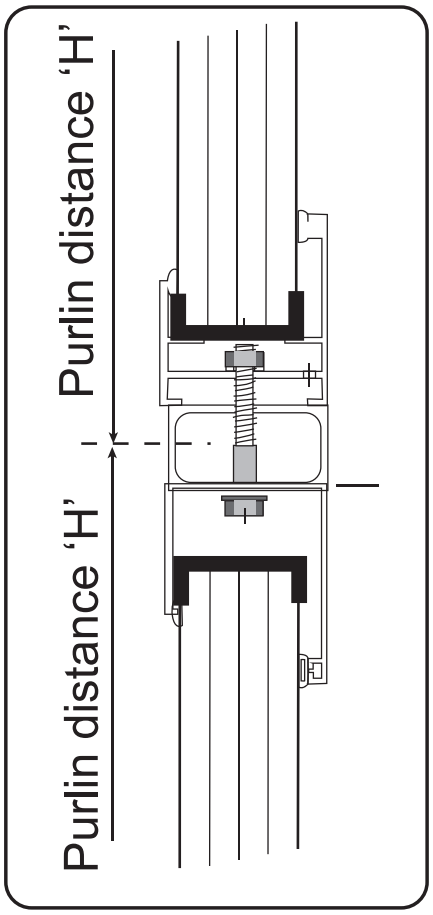


Maximum Recommended 'P' Span

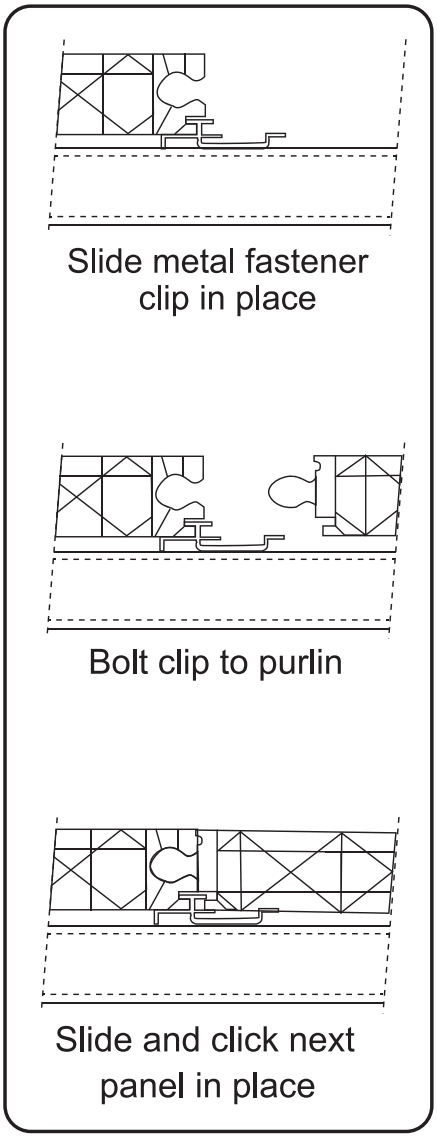
The following chart provides information on glazing recommendations for installing LEXAN™ THERMOCLICK™ sheet with intermediate purlins and clip length of 2.75".

WIND SUCTION IN LBF/FT^2	MAXIMUM RECOMMENDED SPAN 'P' IN FOOT
12.5	7.2
18.8	6.6
25.0	5.9
31.3	5.2
37.6	4.6





Note: *If glazing height exceeds maximum recommended 'H' span, intermediate horizontal purlins can be used to support sheets. Distance between these purlins should not exceed maximum recommended 'P' span dimensions. Bolt the aluminum top and bottom glazing profiles to the intermediate purlins.*



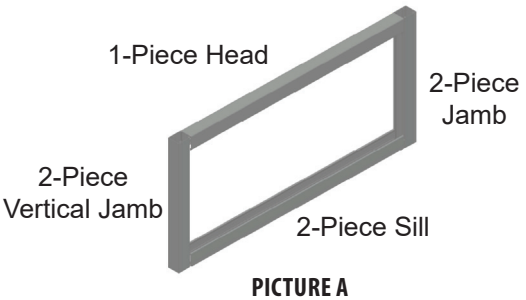
Tongue and Groove Inter-Connecting Sheet System

The chart to the right provides an overview of the LEXAN™THERMOCLICK™ tongue and groove interlocking sheet system. This lightweight multiwall polycarbonate sheet includes a groove for double-sided tie on the inside and eliminates the need for vertical profiles.

Basic Installation Guidelines

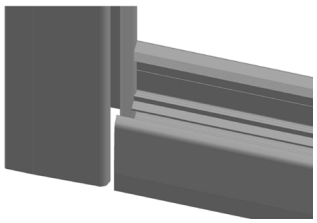
Installation of the Aluminum Frame

Because of differences in the dimensions of the outer and inner leg of the aluminum base and U-profile, the choice method of installation is '90° butt joint' for a typical exterior application. The aluminum is cut at a 90° angle, so two (2) aluminum profile pieces simply 'butt' up to each other (Picture A).



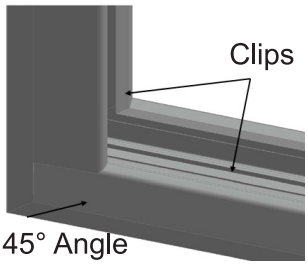
PICTURE A

Because the front and back of the aluminum profiles are different heights, this creates a gap on the outside where the gasket is. Notching the profile will address this issue but may be difficult if using hand tools (Picture B).



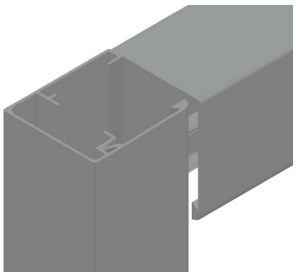
PICTURE B

The alternative method of installation for a window frame-type application is a '45° mitered joint' at the sill. This requires cutting the pieces of aluminum at 45° angles, so they match nicely. This creates a nice joint in the bottom corners of the 'frame'. The bead or clips do not need to be cut at 45°, but they will need to be cut at lengths different to the aluminum profile (Picture C).



PICTURE C

Regardless of how the bottom corners of a window frame-type application are cut, the top corners will need to be a 90° butt joint. This type of joint leaves the top of the jamb profiles open and will need to be properly installed. Because the head and jamb profiles are not the same height, there will be a gap. This gap will be partially covered by the sealing gasket but additional sealing with a silicone (or polyurethane) sealing compound will need to be applied (Picture D).



PICTURE D

Note: *Mitered ends are difficult to match and are rarely worth the time required. In most applications, the head and sill flashing will cover the open ends of the vertically running aluminum. For interior applications, use 'all bases' and miter the corners, if desired.*

PICTURE E

PICTURE F

PICTURE G

1. Fasten the cut-to-size aluminum pieces directly to the wood or metal frame (Picture E).

   - Predrill holes into the aluminum pieces for size and quantity of screws to be used (Picture F).
   - This will depend on the frame type and wind load.
   - Twelve (12) inches and twenty-four (24) inches on center is common.
   - Use the proper fastener for your specific application.

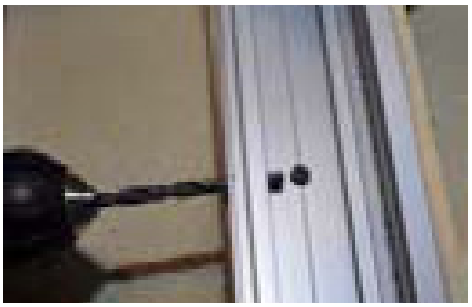
2. Install fasteners at and along the small groove in the back or side of the aluminum (Picture G).

3. Install the 'aluminum base' up the sides of the frame (vertical jambs - from sill to head) and along the lower portion of the frame (sill) between the vertical jambs.

4. Once the vertical and sill aluminum bases are in place, install the aluminum U-profile along the upper portion of the frame (head) between and butting up to the bases.

5. It is important to drill ¼" weep holes in the horizontal aluminum base (sill) to allow for release of moisture. This may be done at any stage of the installation process (Picture H1 & H2).

PICTURE H1



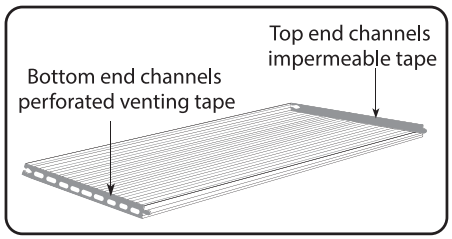
PICTURE H2

Installation of the THERMOCLICK™ Sheets

1. Seal top edge of the THERMOCLICK™ sheet with two (2) inch impermeable aluminum tape (Picture I).

2. Seal bottom edge of the THERMOCLICK™ sheet with two (2) inch perforating venting tape (Picture I).

3. Insert the first THERMOCLICK™ sheet into the top (head) aluminum U-profile, tilting the sheet as needed (Picture J).



PICTURE I

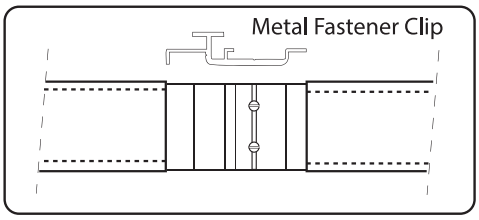
- If sheet installation is a simple 'single run' vertical window wall, you can start installing the first sheet at either side.
- If sheet installation starts at an 'outside 90° corner', start installing the first sheet at the corner of the aluminum U-profile and work towards the other side where the base extrusion is.

PICTURE J

PICTURE K

4. Once the first THERMOCLICK™ sheet is in position, insert the second sheet into the aluminum profile system and slide it into position (Picture K). Make sure the two adjoining sheets 'click' together, confirming the tongue and groove connection is fully engaged. (Repeat this 'interlocking' installation method with the remaining sheets.)

- Wall mount clips are placed on girts so when the panels are snapped together, the sheet slides into the 'T' of the clip. The result is a securely fastened THERMOCLICK™ sheet (Picture L).



PICTURE L

PICTURE M

- As sheets are being installed, straighten sheets so they sit level on the base (Picture M).

PICTURE N

5. Every few sheets, insert the ‘sealing gasket’ into the gap between the sheet and the top (head) aluminum U-profile lip (Picture N).

PICTURE O

6. After all the THERMOCLICK™ sheets are installed, snap the ‘trim closure’ onto the base (Picture O).

PICTURE P

7. The trim closure (cap) gets applied to every eight (8) sheets. Simply tilt up the closure and it should snap into place (Picture P).

PICTURE Q

8. Seal the gap between the sheet and aluminum base along the lower portion of the frame (sill) (Picture Q).

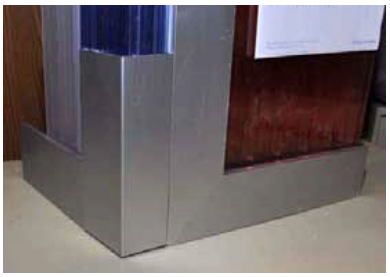
9. Once all the sheets are inserted, apply trim closure pieces to both side vertical jambs (from sill to head) and insert gasket seals to fill the gap between the sheet and the aluminum (Picture R1 & R2).

PICTURE R1

PICTURE R2

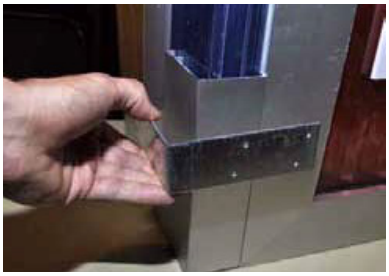
Corners:

- When doing flush mount corners, the aluminum u-profile extends from the sill (bottom) to the head (top).
- Trim a 13/16” x 3-1/8” notch off the ‘long leg’ at the top corner of both vertical U-profiles. This will create a tight butt joint where the vertical U-profile meets the top (head) U-profile.
- Also, trim a 13/16” x 2-1/2” notch off the ‘long leg’ at the bottom corner of both vertical U-profiles where the vertical U-profile meets the bottom aluminum base (sill).
- Attach both U-profiles to the top, bottom, and intermediate girts, creating a corner as shown in illustration below. Once securely in place, cut and install top U-profile and bottom base (Picture S1, S2, & S3).



PICTURE S1

PICTURE S2



PICTURE S3

Expansion Joints:

- If installing this aluminum glazing profile system during the summer months (at the height of the temperature swing), make sure to ‘butt’ the aluminum pieces tight together.
- If it is the dead of winter, leave a 1/8” gap at the joint and cover it with silicone or polyurethane sealant. Clean the joint with rubbing alcohol before sealing.

Flashing:

- The vertically running aluminum bases and U-profiles result in a situation where there are exposed open ends of aluminum at the top and bottom of the vertical window wall.
- In most applications, this works out well because the head and sill flashing cover this detail.

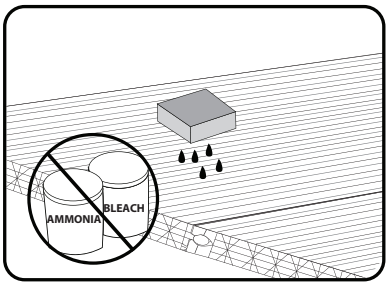
Installation Options

- The aluminum may be flush mounted by fastening via back extrusions or attached through the side to go between framing members.
- Applications with 90° corners must be flush mounted, unless a structural header exists at the corner, resulting in an open space.
- When using flush method, apply butyl tape to back of base, set on wall and attach.
- If attaching between framing members, plumb base, shim and attach. This is similar installation method as installing a patio door.

Cleaning

Periodically cleaning in accordance with guidelines can help prolong the life of the sheets. Use of incompatible cleaning products can cause structural and/or surface damage. Normal dust and dirt accumulation is washed off by the rain. Regular rinsing of sheets with clean lukewarm water is sufficient in dry areas.

- Never use abrasive cleaner, corrosive chemicals, or gasoline.
- Never scrub sheets with brushes, steel wool, or other abrasive materials.
- Don't use squeegees, razorblades, or other sharp instruments to remove deposits or spots.
- Don't clean THERMOCLICK™ polycarbonate sheets in direct sunlight or at high temperatures.



Manual Cleaning – Ideal for Small Areas

- Gently wash sheet with mild household detergent, lukewarm water, and a soft cloth or sponge.
- Thoroughly rinse sheet with clean water and dry with a soft cloth to prevent water spotting.

Automated Cleaning – Ideal for Large Areas

- Use a high-pressure water cleaner (max. 100bar or 1,450psi).
- Always test a small area of the sheet before using the pressure cleaner.
- Use of additives to the water should be avoided.

Note: *A good grade of Fels-Naptha or isopropyl alcohol may be used to remove fresh paint or grease. Rub lightly with a soft cloth. Afterwards, wash using mild soap and lukewarm water. Rinse thoroughly.*

Additional Information

If additional technical or installation information is needed, please contact Easy Building Products. If you have a specific question about requirements in your region, contact your local code office or building inspector.

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