

Installation Guidelines: Rout & Return System (RR)



**WARNING: FAILURE TO FOLLOW THESE GUIDELINES
WILL VOID THE STANDARD WARRANTY.**



BE SURE TO READ, UNDERSTAND AND FOLLOW ALL GUIDELINES. Manufacturer guidelines may vary depending upon specific application and project conditions. The manufacturer should be contacted with questions regarding conditions which vary from the guidelines set forth. Standard carpentry knowledge is required and good construction practice for health, safety and welfare must be followed when installing Envelope 2000®.

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MAIN STEPS OF THE INSTALLATION PROCESS

FIRST: UNDERSTAND THE SYSTEM

Understanding the panel system and determining which attachment option has been specified is imperative for completing a proper installation.

NOTE:

To request a complete Product Manual (which includes recommended SECTION and MOLDING INTERSECTION details), contact the manufacturer.

SECOND: PRE-PLAN THE INSTALLATION

After receiving and properly storing the material, planning the work schedule, grid layout, and material usage should be performed so that the sequence can proceed without significant delays and/or problems.

THIRD: READ THE GENERAL GUIDELINES

The general guidelines (i.e. fabrication, sealing, etc.) provide a groundwork for all types installations. Thoroughly read and understand these guidelines before beginning the work sequence.

FOURTH: COMPLETE THE WORK SEQUENCE

After reading the instructions set forth in the general guidelines, continue to the appropriate work sequence and complete the installation.

KEY POINTS FOR A SUCCESSFUL INSTALLATION

• **SAFETY FIRST**

Proper protection (i.e. gloves, safety glasses) should be worn at all times to prevent injury from sharp edges and/or metal shavings.

• **PROTECT MATERIAL**

When installation is not in progress, all panel and accessory units must be kept under protective cover and completely dry.

• **ENSURE PROPER FIT**

Proper fit is very important to the appearance of the system. Allowance for expansion is needed.

• **LIBERALLY APPLY SEALANT**

ALL joints must be sealed against moisture intrusion or the warranty will VOID.

• **REMOVE PROTECTIVE FILM**

Upon completion, the protective film must be removed from the painted surface. Failure to do so promptly may cause difficulty in removal and possibly leave an adhesive residue.

TECHNICAL ASSISTANCE

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**PRE-INSTALLATION:
MATERIAL RECEIVING & INVENTORY**

VISUAL INSPECTION:

Upon material arrival, all panel units and accessory cartons should be visually inspected to verify that the product is in good condition and free from shipping damage, weather damage or defects.

- IS THE PRODUCT IN GOOD CONDITION?
- IS THE PRODUCT FREE FROM DEFECTS?
- IS THE PRODUCT CLEAN AND DRY?

NOTE:

- Shipping damage and/or packaging issues should be first noted on the bill of lading and then reported to the fabricator.
- Should damage occur, the customer is responsible for filing a freight claim with the shipping company **WITHIN 24 HOURS** from material receipt. Failure to do so may possibly result in forfeit of corrective action.
- Any defective material should be reported directly to the fabricator from which the product was purchased.

MATERIAL INVENTORY:

After verifying the condition of the product, inventory units against the packing slip to make sure that all material (including molding and accessory units) is received.

- ARE ALL OF THE PANEL UNITS PRESENT?
- ...THE MOLDING & ACCESSORY UNITS?
- IS THE PIECE PER UNIT COUNT CORRECT?

NOTE:

Notify the fabricator from which the product was purchased of any missing or incomplete shipments **IMMEDIATELY**. Failure to do so may result in forfeit of corrective action.

**PRE-INSTALLATION:
TRANSPORTING & HANDLING**

TRANSPORTING THE MATERIAL:

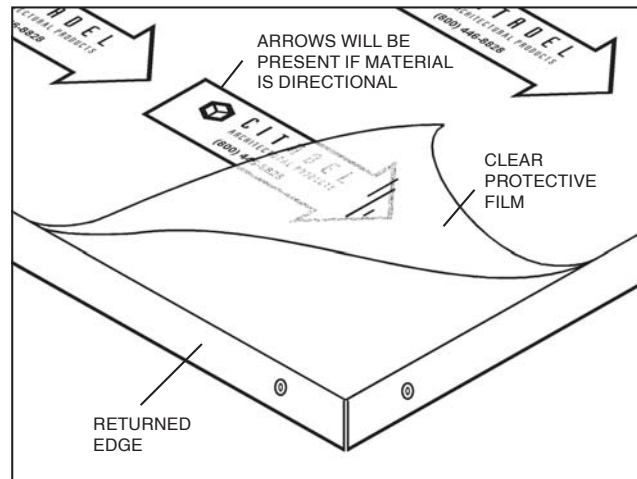
Envelope 2000® is packaged from the fabricator covered and secured with metal strapping. If possible, panels should remain in this original packing for transport.

If a forklift or pallet jack is unavailable, panel unit may be broken and carried to storage by hand according to the following guidelines.

HANDLING THE MATERIAL:

A strippable protective film is standard on all panels. This film should remain on the product until instructed to take it off (during installation procedure). This strippable film (**FIG. A**) is designed to prevent minor abrasions to the surface. However, panels should still be handled with care to avoid any major dings, dents or scratches.

FIGURE A.



NOTE:

- When handling panels, clean work gloves should be worn at all times to protect from sharp edges and to prevent any smudging of the painted finish.
- When removing material from shipping units, **DO NOT** drag/slide panels across stack underneath. Panels must be lifted up, then away to avoid any permanent damage to the painted surface (**FIG. B**).

**PRE-INSTALLATION:
STORING THE MATERIAL UNITS**

MATERIAL STORAGE:

If the units have been broken, material should be restacked, on a skid. Painted surfaces (strippable film side) should be placed face to face and any interleaved foam must be repositioned.

NOTE:

Failure to properly protect material from moisture intrusion may cause damage to the panel surface and/or core. Such damage is NOT covered under the standard warranty.

If the material has become damp or wet during transportation, the surface should be wiped dry before stacking to prevent any type of corrosion. Once the stacking is completed (or if the original packaging is still intact), the units must be covered with a waterproof covering.

All units must be kept in a dry, well-ventilated area away from exposure to the elements and/or any other installations which may cause damage to the product.

PRE-INSTALLATION: SCHEDULING & GRID LAYOUT

COORDINATION OF WORK:

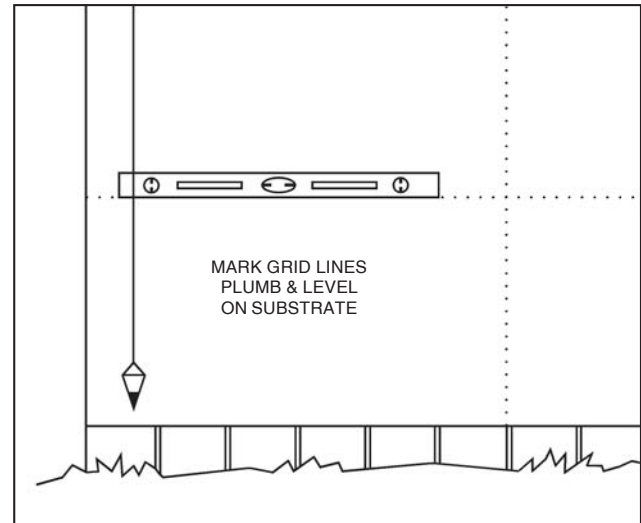
In accordance with good construction practice, schedule the work to coordinate with other trades so that installation can proceed without significant interference/delay.

NOTE:

Once begun, work should not be delayed for long periods of time at a point which might cause damage to the product if acted upon by external conditions (i.e. rain, snow, long periods of exposure to the sun).

DETERMINING THE GRID:

Before beginning the installation procedure, it is important to plan the overall layout of the installation. Architectural drawings should be consulted to determine the correct grid, where applicable.

FIGURE B.**CALCULATING MATERIAL USAGE:**

After identifying/determining the grid, begin to verify that the correct amount of material has been ordered for your specific application. Since material takeoffs and resulting quantities are based upon the grid layout, installing the material in another pattern may result in shortages.

ALIGNING & MARKING THE GRID:

Using the grid pattern derived, establish a base point in the lowermost left corner of the elevation (typically). Using a chalk line, level, and a plumb bob, mark the complete grid (**FIG. B**) on the substrate. Doing so will allow for any necessary adjustment to be made prior to installation.

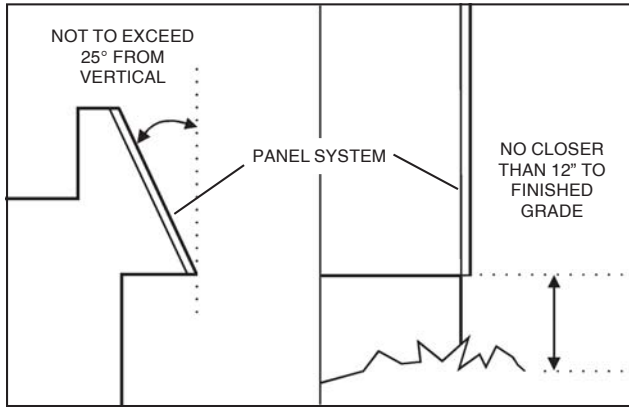
All surfaces of the substrate should be free from any obstructions and/or projections which might interfere with panel application. Note areas where shims may be required to bring the panel system into a plumb, level, and consistent plane.

**GENERAL WORK:
LIMITATIONS OF THE PANEL SYSTEM**

USES & APPLICATIONS:

Envelope 2000® is intended for use as a non-structural wall panel. It may also be used in other applications where the slope does not exceed 25° (FIG. C) past vertical.

FIGURE C.



Also, the system must be kept a minimum of 12" away from the finished landscaping grade. Other environmental and application limitations may apply. Refer to the *Product Warranty*.

**GENERAL WORK:
EXTRUSION POSITIONING**

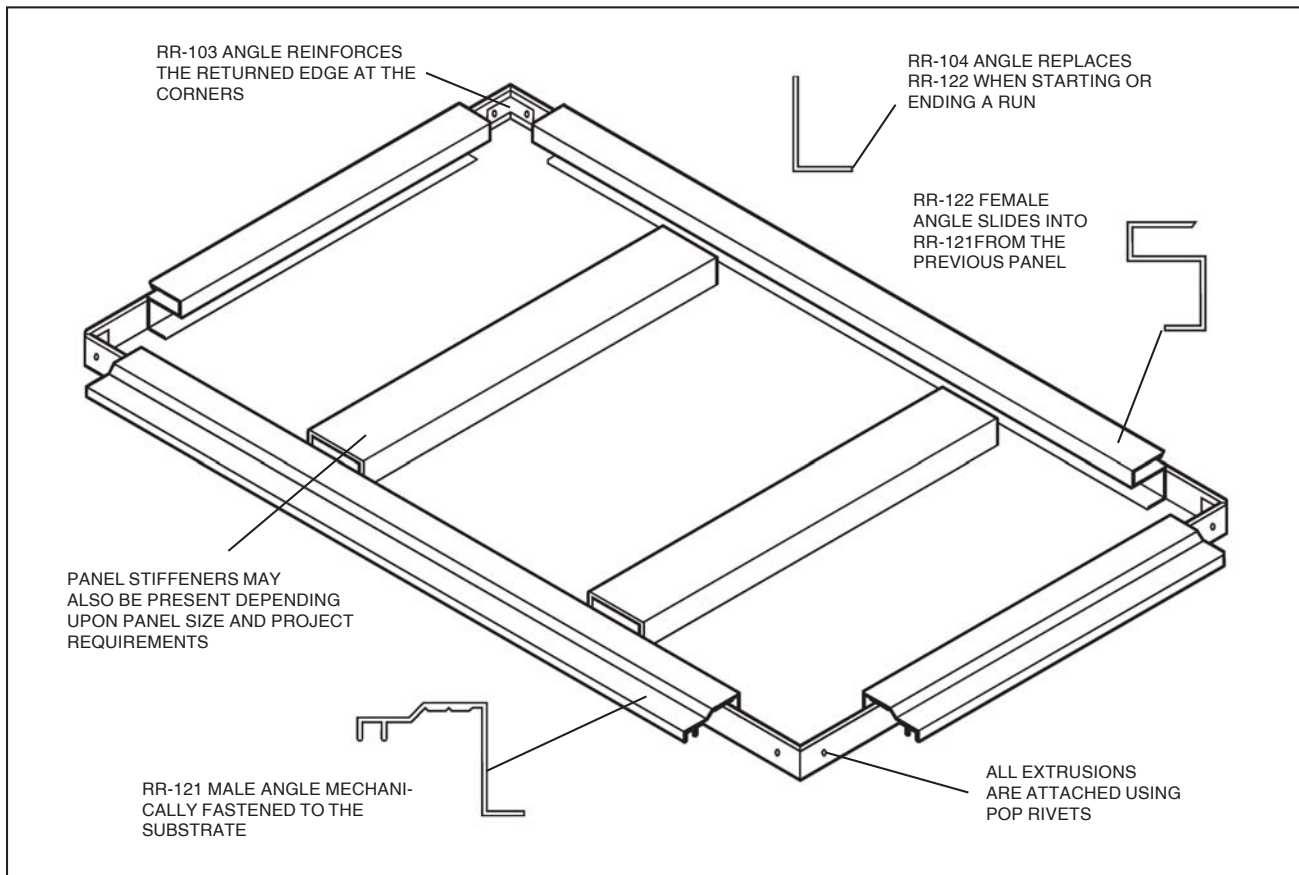
Envelope 2000® RR is a fabricated system that should arrive at the jobsite with all of the extrusions necessary for installation pre-mounted to the formed panels.

An identification system of some type should also be present to locate the position of a particular panel within the elevation. Therefore, as an installer, it is important that you become familiar with the different types of mounting extrusions as well as where they will be positioned on each panel (FIG. D).

NOTE:

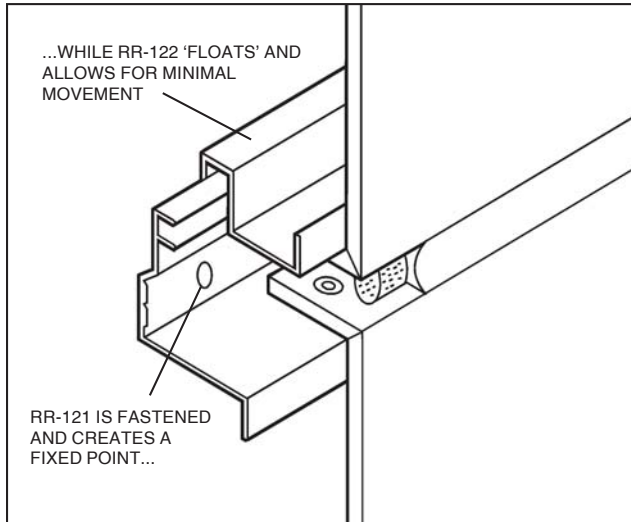
Should any formed panels have the wrong extrusions for the panel's position in the elevation, notify the fabricator immediately.

FIGURE D.



In general, each panel will be mechanically fastened on at least two sides (using either the RR-104 End Run Angle or the RR-121 Male Angle) with the remainder of the sides 'floating' in an extrusion mounted to the back of the adjoining panel (RR-122 Female Angle). This 'interconnection' (**FIG. E**) of the panels allows for movement within the wall system to allow for expansion/contraction.

FIGURE E.



The position of the panel within the elevation will determine the number of mechanically fastened sides and the number of 'floating' sides.

Being a progressive system, the lead side(s) are usually slid over the previous panel and 'float', while the trailing side(s) are then mechanically fastened to the substrate.

Also on the back of the formed panel, the returned edges are reinforced with a small aluminum angle riveted to each corner. A stiffener may also be present (depending upon design requirements and panel size).

**GENERAL WORK:
PROPER SEALANT APPLICATION**

As a barrier system, Envelope 2000® RR is an exterior cladding system designed to keep water away from the structural wall system. Therefore, it is imperative that the following guidelines be followed accurately to ensure the integrity of the system against moisture intrusion.

NOTE:

Failure to adequately seal ALL panel edges, splices, cutouts, etc., will cause the installation to fail and will VOID THE WARRANTY.

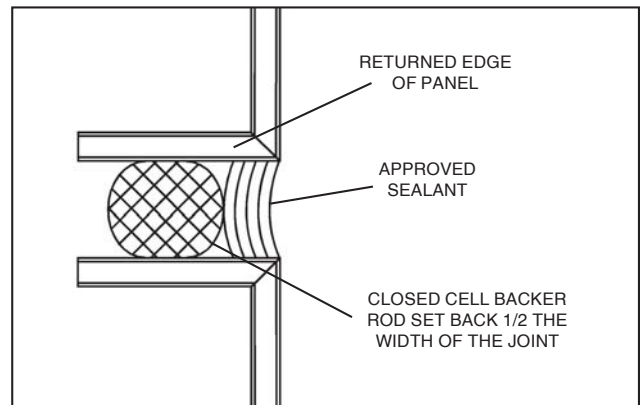
SELECTING THE RIGHT SEALANT:

In order for the proper bond to be created between the sealant and the system components, be sure to use only the sealant recommended by the manufacturer (i.e. Tremco® Spectrem® 2, Dow Corning™ 795, or GE Silpruf™). The use of other sealants may require additional steps (such as priming of materials) or cause the installation to fail due to poor weatherability, staining and/or lack of adequate bonding.

SEALANT APPLICATION:

In general, sealant should be liberally applied wherever water may be able to infiltrate the system (e.g. joints, dissimilar material abutments, etc.). All panel joints should have a closed cell backer rod placed into the joint (set back approximately 1/2 the width of the joint) before sealant application (**FIG. F**).

FIGURE F.



**GENERAL WORK:
THE PROTECTIVE FILM**

When directed to do so (*see Work Sequence*), the protective film must be removed from the panel surface. For ease of removal, pull the film back against itself in the same plane as the panel.

NOTE:

Failure to remove the protective film promptly after installation (or exposure to long periods of sunlight) may cause difficulties in removal and possibly leave an adhesive residue.

MAINTENANCE OF THE PANEL FINISH

REPAIR/TOUCH UP:

Any minor scratches or dings which may occur during installation can be repaired using touch-up paint available from the manufacturer. Repainting of large areas with the touch-up paint is not recommended. Finish characteristics of the repainted surface may vary from the prepainted aluminum.

MAINTENANCE:

Panels should be incorporated into an overall building washing/maintenance schedule and cleaned in accordance with AAMA 610.1, Voluntary Guide Specification for Cleaning and Maintenance of Painted Aluminum Extrusions and Curtain Wall Panels.

In general, panels may be cleaned using warm water and a mild detergent (if necessary). For more aggressive materials, a gentle brushing/scrubbing action may be required. Abrasive detergents and/or harsh solvents should not be used.

WORK SEQUENCE: ROUT & RETURN SYSTEM (RR)



STOP! READ BEFORE PROCEEDING WITH WORK SEQUENCE



These guidelines are set forth to show the intent and general sequence of installation. The procedure for each individual application and condition may vary. For special conditions or for those not discussed (parapet, dissimilar material, etc.), refer to the General Work Guidelines, Typical Details or contact the manufacturer.

INSTALLATION SPECIFICATIONS:

System Type:

- Non-Structural, Barrier System

Work Flow:

- Progressive, moving up and across the elevation beginning at a bottom corner (typical).

Possible Substrates:

- Nailable Substrate
- Non-Nailable Substrate (fastened directly to studs)
- Substrate (either type) with Moisture Barrier (special instructions apply)

Expansion/Contraction Spacing:

- Typical joint spacing is 1/2" between abutting panels.

Type Of Fastener (for mounting extrusions):

- #10 TEK Screw, 1-1/2" long, hex head.

Fastening Schedule:

- Attachment Extrusions:
Every 16" along length of molding.

Backer Rod (for sealant):

- Closed Cell Foam (approx. 5/8" diameter):
To be placed along joint before sealant application to ensure a proper bond.

Sealant:

- #5002 (Tremco® Spectrem® 2)
 - Dow Corning™ 795
 - General Electric Silpruf™
- The entire system must be properly sealed against moisture for the warranty to remain valid.

□ STEP 1: INSTALLING THE FIRST PANEL IN THE SEQUENCE

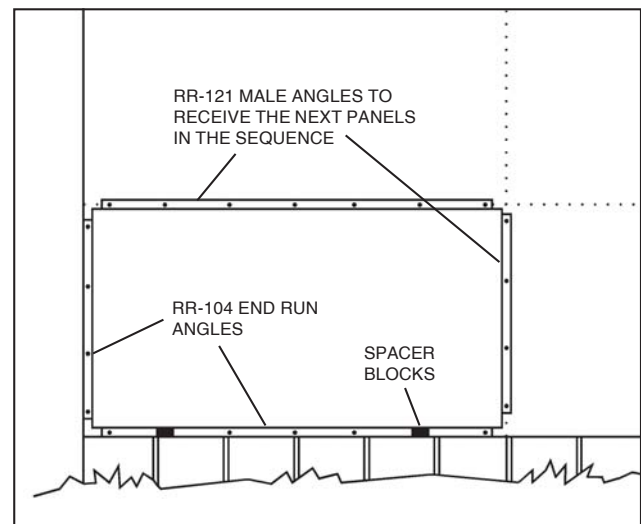
Since the system is progressive, installation generally starts in the lowermost corner of the elevation.

Once the appropriate sill flashing has been installed, set spacer blocks (1/2" joint typical) on the flashing to use as a guideline for setting the first panel.

Peel the protective film back from the returned edges and away from the panel face 3"-4". Next, place the panel onto the spacer blocks, making sure to align the panel level and plumb. Fasten the perimeter extrusions to the substrate using #10 TEK screws located 16" o.c. (max).

All four perimeter extrusions will be fastened to the substrate (**FIG. 1**). However, the extrusions used to begin/end the run will be different from those adjoining other panels.

FIGURE 1.



□ STEP 2: INSTALLING ABUTTING PANELS

In order to create the proper joint for sealant application, adjoining panels must first be installed (**FIG. 2**). Begin by sliding the female perimeter molding (from the second panel) over the male mounting extrusion (from the first panel) using a spacer block to create the proper joint.

The female extrusions (usually at the lower and left edge of the panel) are not mechanically fastened, but rather are held in place by (and 'float' in) the male extrusion from the previously installed panel(s).

The top and right male extrusions are then fastened to the substrate, encapsulating the panel. Continue bottom to top, then left to right until all panels are in place.

Once completed, remove the protective film completely by pulling it back against itself along the panel.

□ STEP 3: APPLYING THE FOAM BACKER ROD AND SEALANT TO THE JOINT

After all of the necessary panels within the elevation are attached to the substrate, the closed cell foam backer rod should be placed within each joint. Set the foam back from the panel face at least half the width of the joint.

Next, liberally apply sealant to the joint, making sure the coverage is continuous along the panel perimeter (**FIG. 3**). Tool the sealant into the joint.

NOTE:

Failure to adequately seal ALL panel edges will cause the installation to fail and will VOID THE WARRANTY.

□ STEP 4: CLEANING UP THE EXCESS SEALANT AND REMOVING THE PROTECTIVE FILM

Any excess sealant that remains after tooling the joint may be removed using a clean rag (**FIG. 4**), and mineral spirits (if necessary).

FIGURE 2.

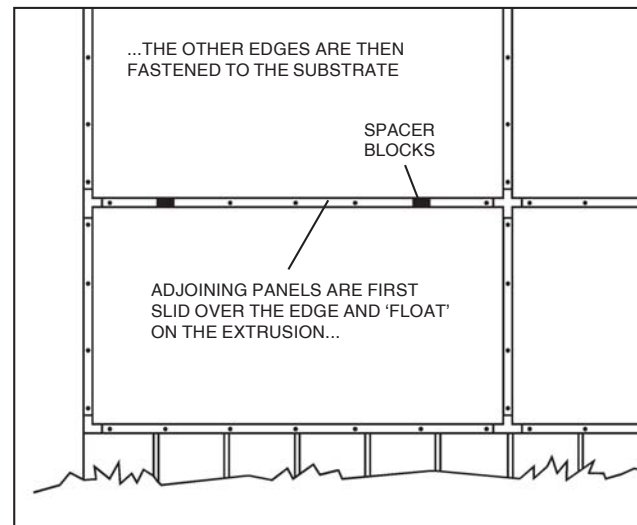


FIGURE 3.

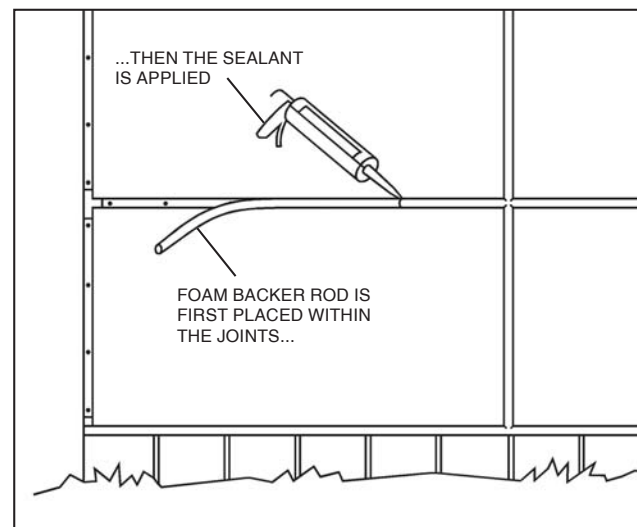
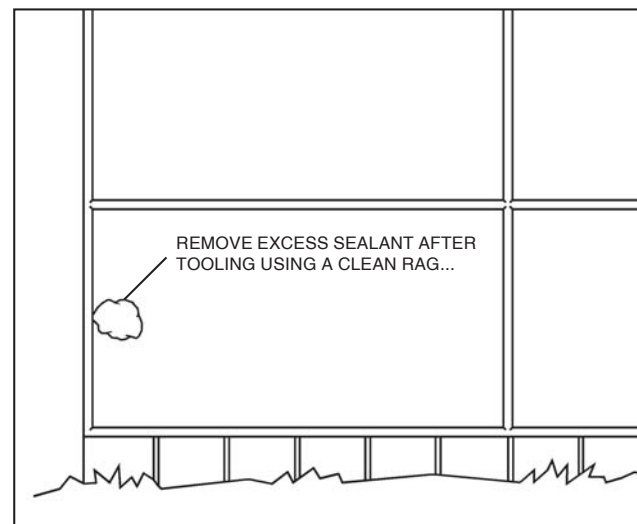
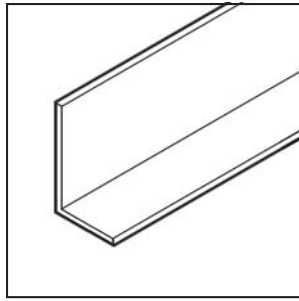


FIGURE 4.

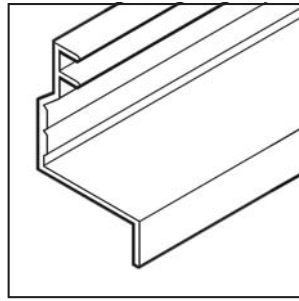


ONE PIECE ALUMINUM ATTACHMENT EXTRUSIONS



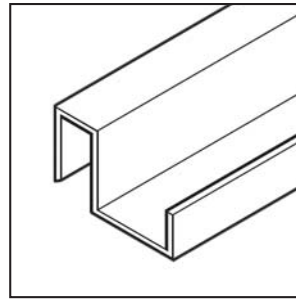
RR-104 END RUN ANGLE

Height: 1-1/4" (32mm)
 Width: 3/4" (19mm)
 Length: 12'-6" (3810mm)



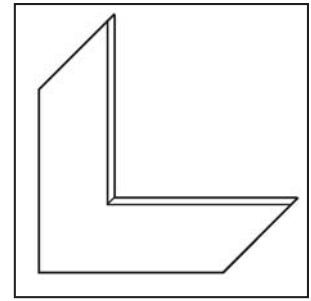
RR-121 MALE ANGLE

Height: 2" (51mm)
 Width: 1-3/8" (35mm)
 Length: 12'-6" (3810mm)



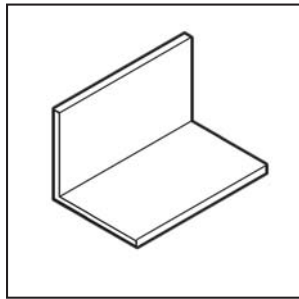
RR-122 FEMALE ANGLE

Height: 7/8" (22mm)
 Width: 1-3/8" (35mm)
 Length: 12'-6" (3810mm)



PF-204 REINFORCEMENT

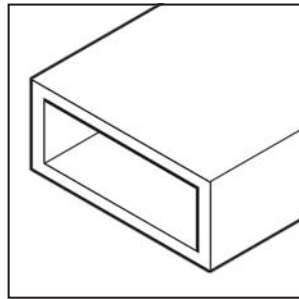
Height: 2" (51mm)
 Leg Width: 3/4" (19mm)
 Length: n/a



RR-103 PANEL CLIP

Height: 1-1/2" (38mm)
 Width: 1" (25mm)
 Length: 12'-6" (3810mm)

Note: Angle cut to smaller peices (shown) for use on formed panels.



STIFFENER TUBE

Height: 1" (25mm)
 Width: 2" (51mm)
 Length: 12'-6" (3810mm)

