



**Oldcastle** BuildingEnvelope®

***Reliance™ -TC Curtain Wall***  
**INSTALLATION & GLAZING MANUAL**  
**FRP PRESSURE PLATE**

**NOTE:**

The installation details found in this package are generic and are for representation only with the intent of giving the installation team a visual representation as to how the assemblies typically install. The shop drawings and details are the governing documents and as such this package is to be used only as a resource.

Follow sealant manufacturers recommendations for use and application of structural silicone sealant and weather seal silicone sealant.

Note: Customer / Project quality assurance procedures are separate documents and are to be followed in conjunction with this manual.

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## GENERAL INFORMATION

### PRODUCT USE

The **Reliance™-TC** curtain wall system is intended for fabrication, assembly, sealing, installation and glazing by professionals with appropriate knowledge and experience of the system(s) and their incorporation into various building conditions.

The FRP pressure plate may be installed on Reliance or the Reliance-TC curtain wall system using 1" glazing. Please reference the curtain wall installation manual for the appropriate product for fabrication, assembly and installation of the wall system. This manual is to be used in conjunction with the curtain wall manual to provide specific instructions as it relates to the fiberglass pressure plate and its usage. If the FRP pressure plate is to be used for glass sizes larger than 40 sq. ft., glazing thickness greater than 1" or for special applications please contact Oldcastle BuildingEnvelope for review of the application and recommendations.

**Consult sealant manufacturer for review and recommendation of sealant application. Follow sealant manufacturer's recommendations and literature for proper installation.**

The fabrication and installation of a structural silicone-glazed (SSG) or wet glazed system requires more technical knowledge and experience than is required for a conventional pressure-glazed or dry glazed system. The glazing contractor should take all steps as outlined and required by the structural silicone sealant manufacturer, glass fabricator, framing manufacturer, and the project professional engineer of record as well as follow local building code requirements and industry best practices to ensure the proper installation and safe performance of the SSG system.

The glazing contractor for each project needs to ensure compliance with each step, including, but not limited to, design reviews, formal adhesion testing, formal compatibility testing, project specification compliance, validating procedures, field testing, and quality control validation of installed product and surrounding conditions.

Testing of component materials for use in a SSG or wet glazed system is mandatory to fulfill project specifications and warranty requirements and must be submitted by the glazing contractor to the structural silicone manufacturer. All materials that comprise the structural silicone joint, such as the framing system (with the job-specific finish) and job-specific glass must be tested by the structural silicone manufacturer for compatibility and adhesion. All other accessory materials in contact with the structural silicone, such as setting blocks, spacers, gaskets, sweeps, air seals and expansion joints, must also be submitted to the silicone sealant manufacturer for compatibility testing.

To ensure that nothing has changed in formulation or chemistry since the initial tests, subsequent testing during periodic time frames of the project is to be conducted to confirm continued acceptance of the material for use on the project. To ensure the structural performance and integrity of the insulating glass unit (IGU), the glazing contractor must submit the project shop drawings to the glass fabricator to obtain approval for use of their product(s) in any 2, 3 or 4-sided SSG applications.

Quality control procedures for field glazing are to be increased beyond those required for shop glazing. Job conditions will normally have dust, dirt, and other construction debris on the surfaces where structural silicone is to be applied. Great care should be exercised in cleaning and preparing these surfaces for silicone application. The recommendations of the silicone sealant manufacturer are to be strictly enforced and followed.

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The fabrication and installation of the SSG system and its components, whether shop or field glazed, should be governed by a quality control program, and all steps, procedures, and test reports should be documented throughout the project.

Prior to installation of any SSG system, refer to industry documents (e.g., AAMA Curtain Wall Design Guide Manual, ASTM C1401-14, and AAMA SSGDG-17) for detailed instructions and recommendations.

**THE GLAZING CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR ENSURING COMPLIANCE WITH THE ABOVE AND ASSUMES FULL LIABILITY FOR ANY ISSUES ARISING FROM NONCOMPLIANCE.**

### GLAZING PRACTICES

The air and water performance of the **Reliance™-TC** curtain wall system is directly related to the completeness and integrity of the installation process, including but not limited to the assembly seals of the framing joinery, the installed glazing gaskets, and the alignment of the framing joinery glazing plane. Before glazing, verify the glazing pocket width and glazing infill thickness, as both must be in tolerance to assure adequate edge pressure and to achieve the desired air and water performance levels. (In general, framing systems utilizing 1" insulating glass are designed to accommodate a thickness variance of +/- 1/32"). Note: Excessive pressure can cause glass breakage and/or IGU failure. Consult the glass manufacturer for their recommended edge pressure per lineal inch. To achieve the designed and tested air and water performance, best practices include:

1. Surfaces to be sealed should be cleaned with isopropyl alcohol or solvent and dried as recommended by sealant manufacturer to remove all dirt and cutting oils. Sealant at shear blocks should be a minimum 3/16" diameter nominal placed completely around the top, face and bottom of the shear block without gaps in the sealant. Exposed surfaces should be cleaned after installing the horizontal. Inspect joint for complete sealant contact, especially where the horizontal meets the face of the vertical member. Repair joint as required.
2. Glazing gaskets should be cut 1/4" longer per foot, and lay flat, preferably for 24 hours.
3. Gaskets should be cut as single monolithic pieces and "crowded" during their installation to avoid corner gaps caused by post-installation relaxation.
4. The interior glazing gasket should be installed so as to avoid stretching, buckles, or tears.
5. Corners must be cut square, and at a slight angle when required to conform to the bevel on the intersecting gasket; sealed and butted together.
6. Gasket corner joinery must also be crowded, and sealant applied onto the gasket contact frame surface and into gasket reglet raceway where applicable.
7. Gasket corner seals are to be done just prior to installing glass, while the sealant is still wet and uncured, and ensure exterior gaskets are installed so as to place the glass into it's final in service condition and allow the sealant to conform to optimum configuration. Note: If the sealant cures prior to glazing, the cured sealant could create excessive edge pressure onto the glass and has the potential to cause glass breakage.
8. The glass must be checked for squareness, size dimension, and thickness along the edges paying attention to any variances from center edge to corner edge.
9. Check the placement of the installed glass and verify there is proper edge bite into the pocket, and proper edge clearance from framing elements.
10. After sealant has set and a representative amount of the wall has been installed and glazed (250 square feet or more) run a water hose test in accordance with AAMA 501.2 specifications to check installation. On large projects the hose test should be repeated during the glazing operation. Consult and follow NGA's GANA Manual and FGMA Glazing Manual for proper glazing technique and procedure.

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Variations on the details shown are inevitable and are not the responsibility of Oldcastle BuildingEnvelope when drawn by others. Oldcastle BuildingEnvelope strongly encourages its customers to utilize Oldcastle BuildingEnvelope supplied calculations and shop drawings.

### **BUILDING CODES**

Oldcastle BuildingEnvelope® does not control the application nor selection of its product configurations, sealant, or glazing materials, and assumes no responsibility thereof. It is the responsibility of the owner, architect, and installer to make these selections in strict compliance with applicable laws and building codes.

### **PROTECTION AND STORAGE**

Handle all material carefully. Do not drop from the truck. Do not stack heavy material on top of the FRP pressure plate to prevent damage to materials. Stack with adequate separation so the material will not rub together. Store material off the ground, protecting against the elements and other construction hazards by using a well-ventilated covering. Remove material from package if wet or located in a damp area.

### **CHECK MATERIAL**

Check glass dimensions for overall size as well as thickness. Oldcastle BuildingEnvelope cannot be held responsible for gaskets that are not watertight due to extreme glass tolerances. Oldcastle BuildingEnvelope recommends a tolerance of plus or minus 1/32" for the glazing in its curtain wall systems.

Check all material upon arrival at job site for quality and to determine any shipping damage.

Using the contract documents, completely check the surrounding conditions that will receive your materials. Notify the general contractor by letter of any discrepancies before proceeding with the work. Failure to do so constitutes acceptance of work by other trades.

Check shop drawings, installation instructions, architectural drawings and shipping lists to become familiar with the project. The shop drawings take precedence and include specific details for the project. The installation instructions are of a general nature and cover the most common conditions. Due to varying job conditions all sealant used must be approved by the sealant manufacturer to insure it will perform per the conditions shown on the instructions and shop drawings. The sealant must be compatible with all surfaces in which adhesion is required, including other sealant surfaces. Use primers where directed by sealant manufacturer. Properly store sealant at the recommended temperatures and check sealant for remainder of shelf life before using.

### **FIELD CONDITIONS**

All material to be installed must be plumb, level and true. Aluminum to be placed in direct contact with masonry or incompatible material should be isolated with a heavy coat of zinc chromate, bituminous paint or non-metallic material.

After sealant is set and a representative amount of the wall has been glazed (250 square feet or more), run a water hose test in accordance with AAMA 501.2 specifications to check installation. On large projects the hose test should be repeated during the glazing operation.

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### **CLEANING MATERIALS**

Cement, plaster terrazzo, alkaline and acid-based materials used to clean masonry are very harmful to finishes. Any residue should be removed with water and mild soap immediately or permanent staining will occur. A spot test is recommended before any cleaning agent is used. Refer to the Architectural Finish Guide in the Detail Catalog.

### **SAFETY GUIDELINES**

When cutting and fabricating fiberglass some safety guidelines should be followed to help prevent fiberglass dust from causing irritation of eyes, skin or being inhaled. It is recommended that protective glasses, gloves and sleeves be worn. A 3M S-6779 dust respirator is recommended to be worn to help prevent inhaling of dust. A dust collection system on saw will also help control dust and clean up.

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### PRESSURE PLATE FABRICATION

1.1 Pressure plate is pre-fabricated with  $7/32$ " holes at 3" on center. Fasteners will be installed at 9" on center and should be located at maximum 1-1/2" from ends. Additional fasteners may be required based on project specifications. If additional holes are required use a  $7/32$ " (.219) drill. (See notes below for drill bit recommendations) See FIGURE 1 Cut length of pressure plate will be mullion height for verticals and D.L.O. minus 1/4" for horizontals.

1.2 Weep holes are to be located at 1/4 points of horizontal pressure plates unless shop drawings designate different locations. Weep holes are  $5/16$ " diameter (See notes below for drill bit recommendations.). See FIGURE 2

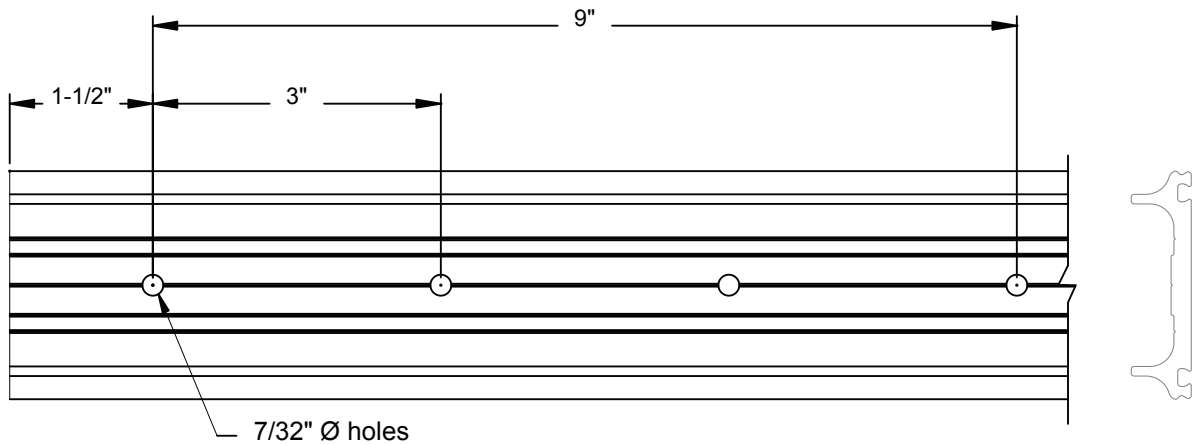


FIGURE 1  
Attachment Holes

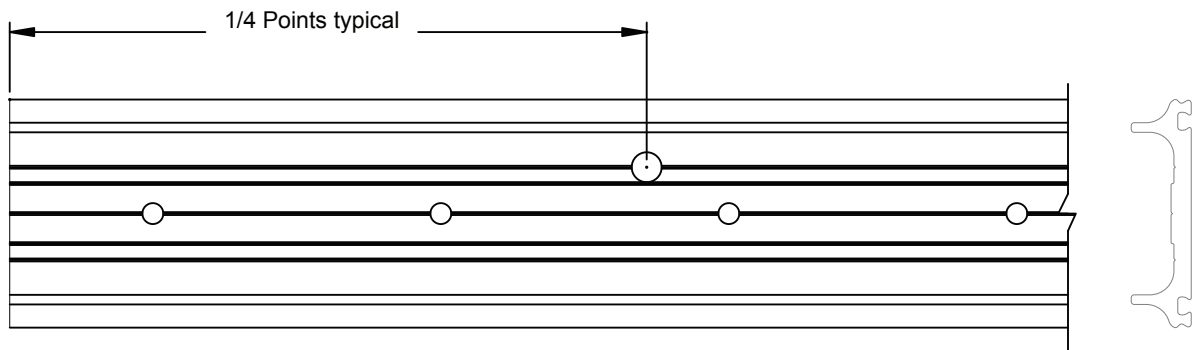


FIGURE 2  
Weep Holes

#### Fabrication Notes:

1) Standard drill bits may be used to drill fiberglass, but life of bit will be reduced. It is recommended that a masonry drill bit be used.

2) The pressure plate may be cut using a carbide blade but due to the high content of fiberglass in the pressure plate, blade-life will be significantly shortened. It is recommended that a diamond tipped blade be used.

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### GLAZING

2.1 When installing AW-162 FRP pressure plate follow all standard installation steps as noted in appropriate Reliance™ system installation and glazing manual. Install fasteners located at 1-1/2" from each end first, then end fasteners in pressure plates last, be sure to hold firm pressure on pressure plate while installing the FS-325 fasteners to prevent pressure plate from pulling away from face of system and disengage the thermal isolator. Torque fasteners to 80 in/lbs. Fasteners will be located at a maximum of 9" on center. Fastener location may vary based on project specifications, so consult shop drawings for additional information. Additional fasteners should be added where needed to insure a fastener is located above and below each horizontal. See FIGURE 3

2.2 All unused holes in vertical and horizontal pressure plates must be sealed. See FIGURE 3

2.3 Seal horizontal pressure plate to verticals and install face caps. Reference system installation manuals for more information. See FIGURE 4, page 8.

2.4 Horizontal face caps are to be cut D.L.O. minus 1/16". Drill 5/16" weep hole on bottom of cap at centerline. See FIGURE 5, page 8.

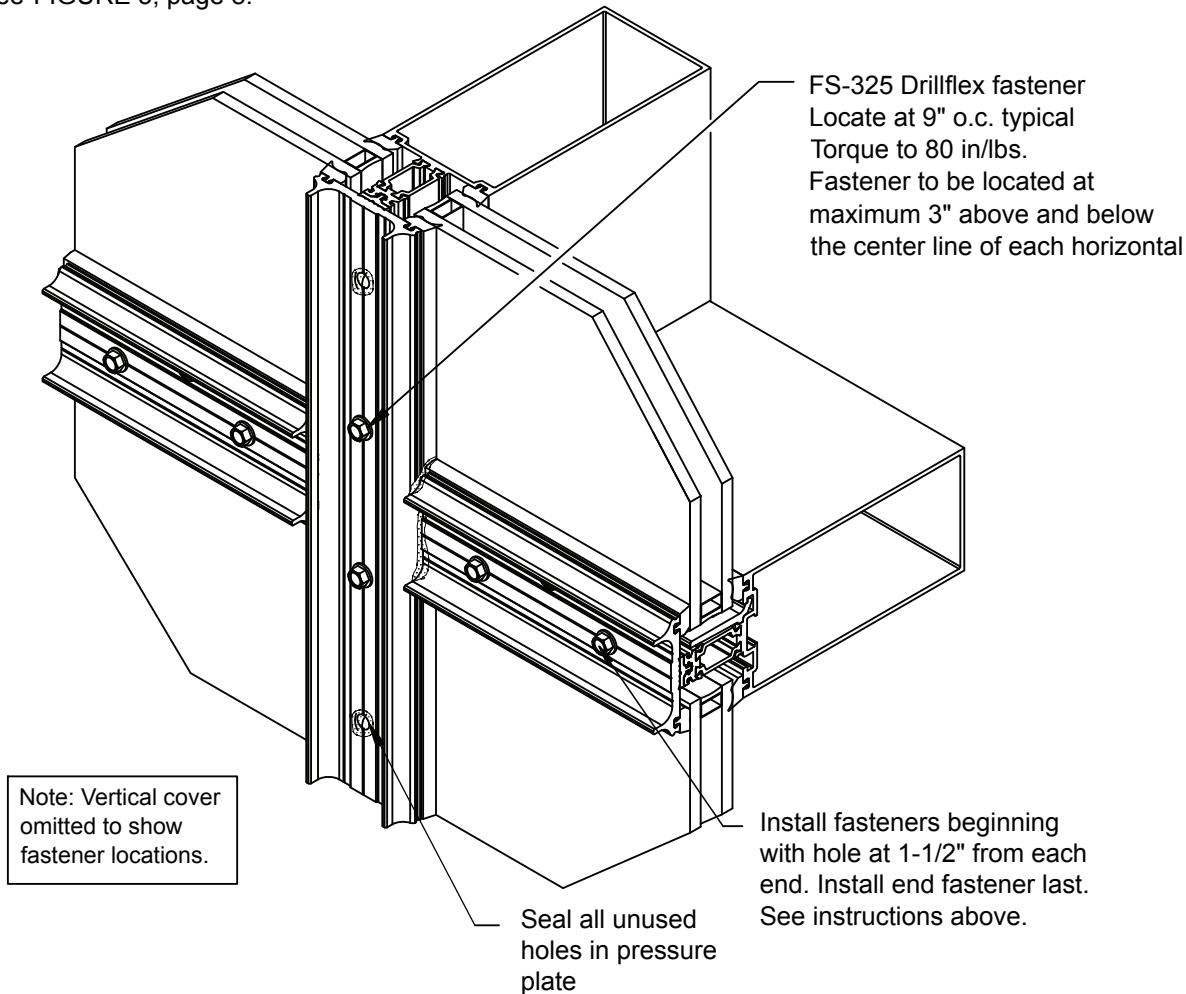


FIGURE 3  
Sealant and Fastener  
Locations

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ASSEMBLY

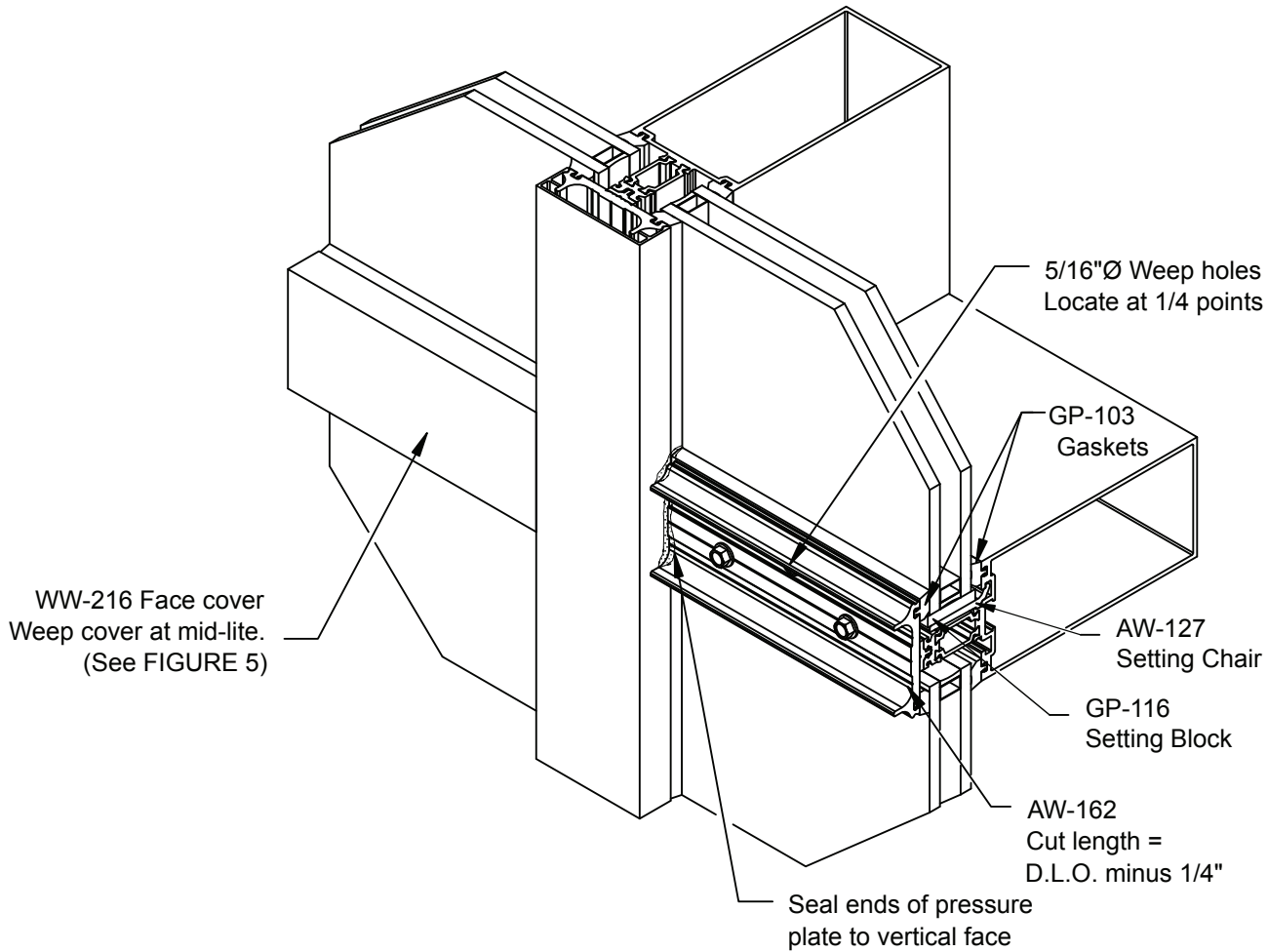


FIGURE 4  
Installation

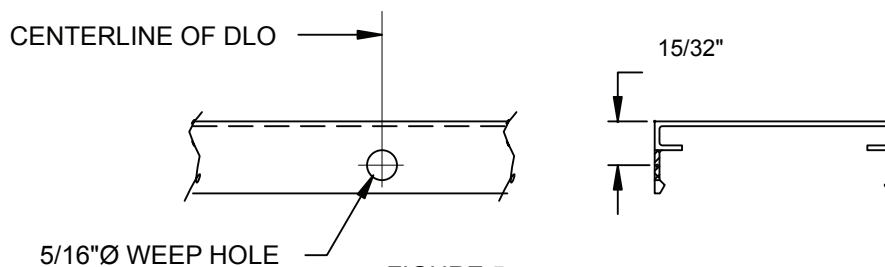


FIGURE 5  
Horizontal Face Cover Fabrication

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### PRESSURE PLATE FABRICATION

2.7 Pressure plate reinforcement AW-310 must be installed at each horizontal to vertical intersection for deep face caps as noted in 2.8. Reinforcement will be held in place with FS-325 pressure plate fastener. Face cap, pressure plate and reinforcement will be fabricated with .125" hole on each side at center of face cap. A FS-317 , 1/8" x 3/4" lg dowel pin (part # 35821) must be inserted at each side of face cap to secure the cap to the reinforcement. See FIGURE 6.

2.8 Use AW-310 reinforcement at all face caps deeper than 1-1/2" with maximum cap depth of 4".

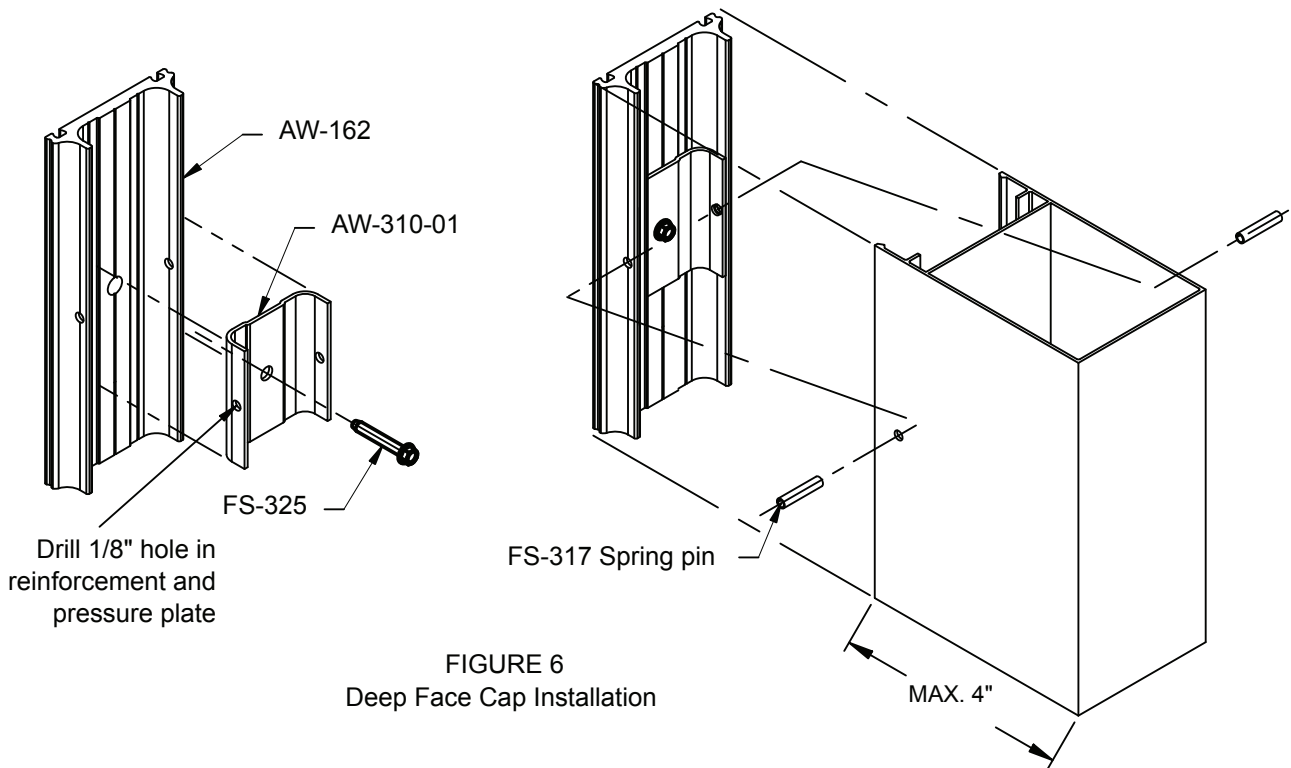






FIGURE 6  
Deep Face Cap Installation

### PARTS LIST

 AW-162	FRP Pressure Plate
 AW-310-01	Deep Cap Reinforcement
 FS-317	Spring Pin for AW-310-01
 FS-325	#12-24 X 1-11/32 HWH Drill Flex (Typ. Pressure Plate)