

RELIANCE UNIT WALL INSTALLATION MANUAL

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 SUBMISSION DRAWINGS AND DETAILS ARE THE GOVERNING DOCUMENTS AND AS SUCH THIS PACKAGE IS TO BE USED ONLY AS A RESOURCE.

FOLLOW STRUCTURAL GLAZING TAPE AND SEALANT MANUFACTURER'S RECOMMENDATIONS FOR USE AND APPLICATION OF THE STRUCTURAL GLAZING TAPE AND WEATHER SEAL.

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

Reliance Unit Wall Curtain Wall system is intended for assembly and installation by glazing professionals with appropriate experience. Subcontractors must be qualified to provide field instruction and project management.

Oldcastle BuildingEnvelope® does not control the application of its product configurations, sealant or glazing material and assumes no responsibility for the application. It is the responsibility of the owner, architect and installer to make these selections in strict compliance with applicable laws and building codes.

It is critical to involve 3M[™] at the earliest stage of the project as possible. Building loads and glass sizes may be restricted based on structural capabilities of the tape used on project. Supplier must review shop drawings and make recommendations prior to ordering materials.

When using 3M[™] VHB[™] SGT you must involve 3M's[™] technical services to obtain approval, and have SOP written for project specific materials, order materials and schedule training prior to assembling any window frames. (3M VHB must be purchased directly from distributor and is **NOT** provided by or sold through O.B.E.)

The air and water performance of the unitized curtain wall is directly related to the completeness and integrity of the assembly/glazing and installation process. Care must be taken when applying the seal at the horizontal to vertical connections as well as at the glazing tape installed on the interior side of the glass.

- 1. Surface to be sealed should be cleaned with isopropyl alcohol or solvent and dried as recommended by tape/sealant manufacturer to remove dirt and cutting oils. No gap should be visible in the sealant. Exposed surfaces should be cleaned of excess sealant after installing the horizontal. Inspect joint for complete sealant contact, especially where the horizontal meets the face of the vertical member.
- 2. The glazing tape should be installed so as to avoid stretching, buckles or tears. Cut the tape at corners (As shown on sheet 34). The glazing tape should be installed in one continuous piece per side, with seams/joints only at corners.

Variations on details shown may occur, but are not the responsibility of Oldcastle BuildingEnvelope.

PROTECTION AND STORAGE

Handle all material carefully. Do not drop from the truck. 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. For further guidelines consult AAMA publication "Care And Handling of Architectural Aluminum From Shop To Site".

Phone: 1-866-OLDCASTLE (653-2278)

Web Address: www.OBE.com

CHECK MATERIAL

Check glass dimensions for overall size as well as thickness. Oldcastle BuildingEnvelope [®] cannot be held responsible for gaskets that are not water tight due to extreme glass tolerances. The unitized curtain wall system is designed to accommodate glass or panels measuring 1" in thickness (+/- 1/32").

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 assembly and installation instructions are of a general nature and cover the most common conditions.

Due to varying job conditions all sealant must be approved by the sealant manufacturer to ensure it will perform per 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 expiration and 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 rich, bituminous paint or non-metallic material unless otherwise specified. After sealant is set and a representative amount of the wall has been glazed (250 sq. ft. or more), perform a water hose test in accordance with AAMA 501.2 "Field Check of Metal Storefront, Curtain Wall and Slope Glazing Systems for Water Leakage". On large projects the hose test must be repeated during the glazing operation. Review anchors or embeds in structure as early as possible to confirm that 'as built' building structure can accommodate anticipated anchor tolerances.

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.

EXPANSION JOINTS

Expansion joints and perimeter joints shown in these instructions and in the shop drawings are shown at nominal size. Actual dimensions may vary due to perimeter conditions and/or differences in metal temperature between the time of fabrication and the time of assembly/installation. For example, a 12' unrestrained length of aluminum can expand or contract 3/32" over a temperature change of 50° F. Any movement potential should be accounted for at the time of the assembly and installation.

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GENERAL NOTE:

FRAMES ARE INTENDED TO BE INSTALLED FROM LEFT TO RIGHT WHEN VIEWED FROM EXTERIOR.

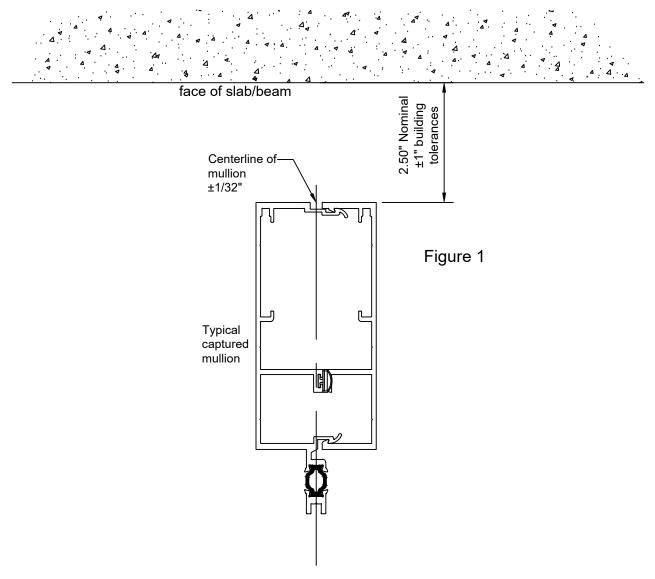
DETAILING IN THIS INSTALLATION MANUAL MAY VARY FOR SPECIFIC PROJECTS.

1. CHECK STRUCTURAL OPENING

Slab or beam elevation must be within adjustment of anchoring system.

Structural surfaces to receive anchoring system must be level and plumb within the adjustment limits at head, sill and jamb. See approved shop drawings for allowable adjustment.

2. LAYOUT MULLION AND ANCHOR CENTERLINES



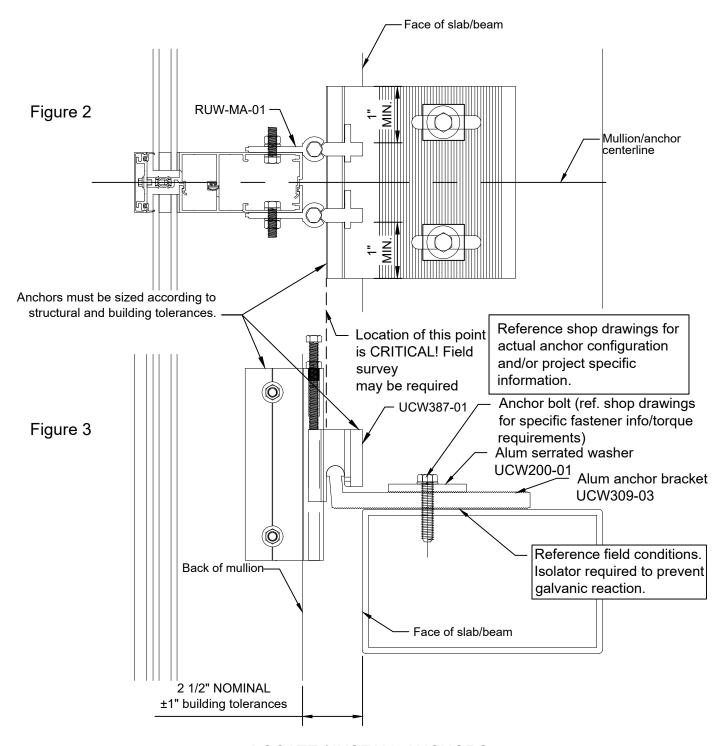
LAYOUT MULLION CENTERLINES
03

1. LOCATE AND INSTALL ANCHORS

See approved shop drawings for anchor types and locations.

Locate centerline of aluminum anchor at the mark for centerline of mullion.

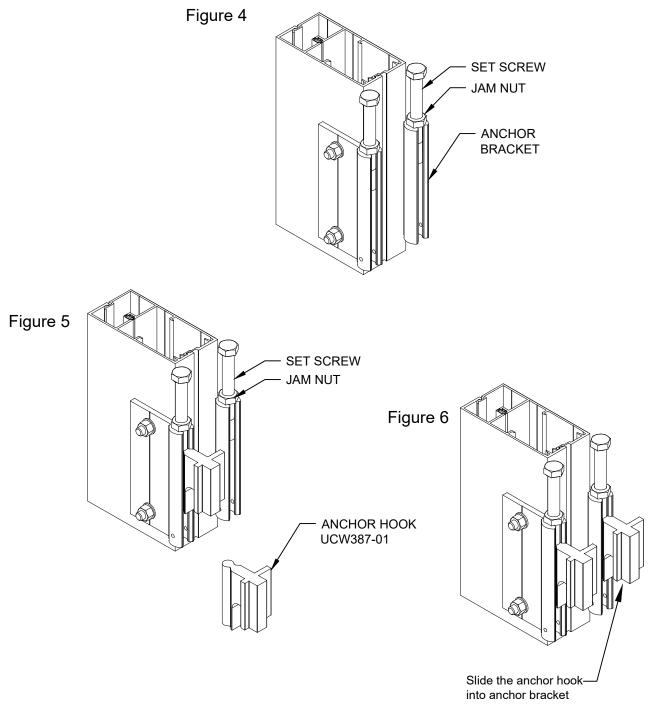
Adjust aluminum anchor bracket for in and out. Apply aluminum serrated washers. Make final in and out adjustment prior to tightening the anchor bolt in place.



1. INSTALL ANCHOR HOOKS

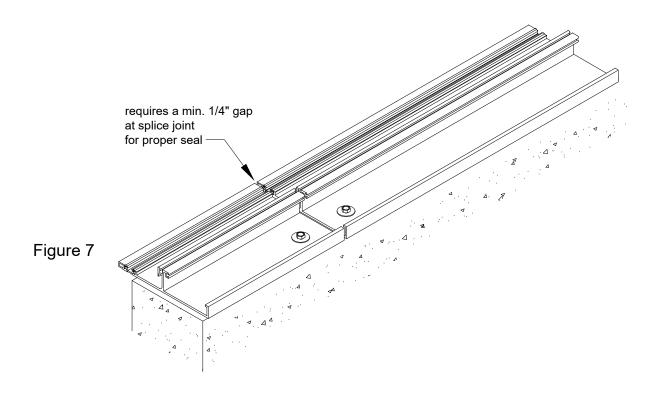
Back off set screw at the top of the anchor bracket, slide in the anchor hook.

Tighten up set screw, the screw is to prevent anchor hook from sliding out of the anchor bracket during frame installation.



1. INSTALL STARTER SILL

Locate starter sill per approved shop drawings. The starter sill must be level and straight. The starter sill should run continuously across elevation, whenever splicing is necessary, a min. 1/4" gap should be left for proper seal in-between starter sills.



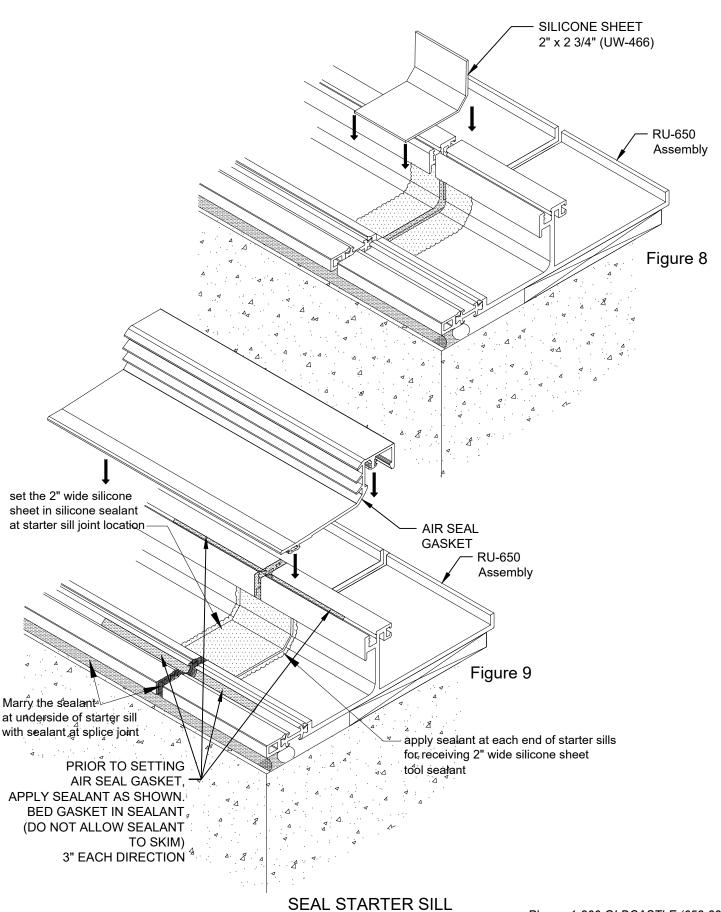
2. PROPER SEAL AT STARTER SILL

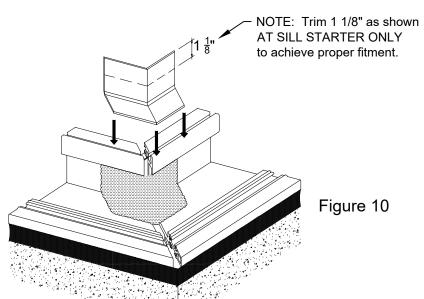
Clean and prepare substrates for sealing per sealant manufacturer's recommendations. Apply backer rod and perimeter seals under starter sill. Tool sealant. Apply sealant at splice joints. All splice joints should be sealed from front of the starter sill to the top of the upturned leg. Connect sealant at underside of starter sill with sealant at splice joint.

Apply sealant at outer surface for approximately 3/4" on each side of the joint as shown; set 2" wide (UW-466) silicone sheet on top of the silicone sealant. As shown in figure 8 Page 7.

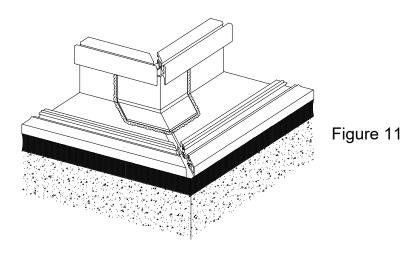
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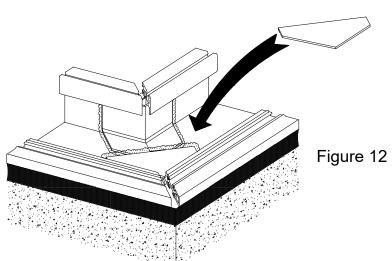




GP-492 to be used at 90° outside corners at both the stack and starter sill conditions.



GP-492 is to be installed using the same procedure illustrated on page 7, figures 8 and 9.



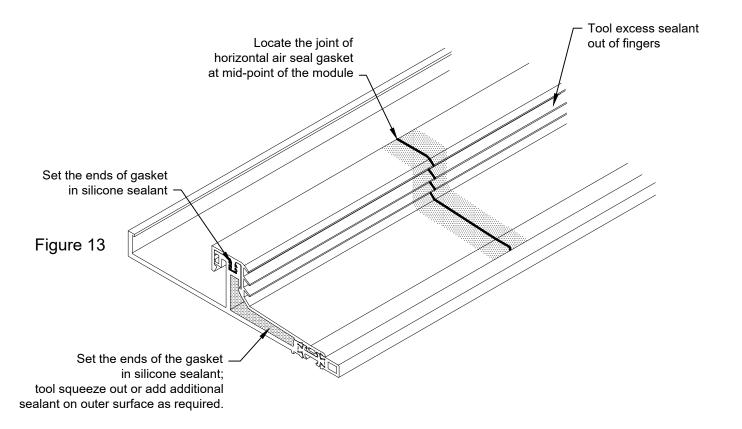
At the <u>starter sill only</u>, in addition to the GP-492 you will need to cut a piece of silicone sheet to fit, and install per the instructions for applying a splice on page 7, figures 8 and 9.

SEAL STARTER SILL 08

4. INSTALL HORIZONTAL AIR SEAL GASKET

Clean areas to receive sealant as per sealant manufacturer's recommendations. Install horizontal air seal gasket GP-186 into starter sills continuously across elevation. Where splicing is necessary, locate the joint at mid-point of the module, apply bead of sealant to set the ends of gasket in place. Tool squeeze out sealant.

Note silicone sealant must adhere to gasket. Submit samples of the air barrier gasket to your sealant manufacturer for sealant adhesion and compatibility testing. Ensure fingers of horizontal air seal gaskets are not filled with silicone as this will hamper frame installation.



SAFETY PROCEDURES ARE THE SOLE RESPONSIBILITY OF THE INSTALLER. OLDCASTLE BUILDINGENVELOPE® ASSUMES NO RESPONSIBILITY FOR PROJECT SAFETY PROCEDURES.

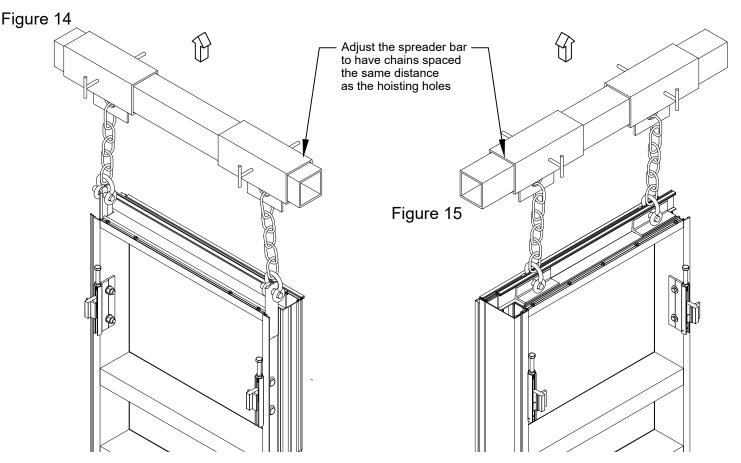
1. HOISTING FRAMES

Frames can be hoisted either through anchor lugs (shear angle, <u>non-typical</u>) installed in frame head horizontals or through shear sleeves / lifting lugs <u>typical</u> attached to the mullion halves.

Inspect frames prior to hoisting. For illustration purposes only, a spreader bar is shown as a hoisting device. Other lifting devices can be used. Means & methods are the sole responsibility of the installler. The spreader bar chains should be spaced the same distance as the distance between hoisting holes in head horizontal or hoisting holes on sleeves. Maximum frame weight to be 1500 pounds.

Handle frame to hoist smoothly and in a controlled manner. No swinging or spinning allowed during hoisting. Avoid shock loads. Do not lift the frame sideways (such as to rotate the frame) when using shear sleeves, as this could bend the sleeves and hamper installation of next level stacking unit, which must sleeve down onto shear sleeves. Always rotate the frame upright from lay down position by lifting perpendicular to the unit width.

Spreader bar should indicate hoisting configuration depending on frame weight. Ensure hoisting bar is rated for frame weight configuration as required.



HOISTING FRAMES

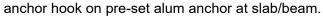
Frames are to be installed from left to right as viewed from the exterior, and from bottom to top.

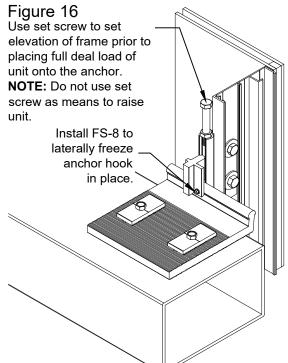
Before proceeding to install the first frame, check all starter sill joints to make sure they are properly sealed and horizontal air seal gaskets have been applied.

Apply 3" at intermediate mullion to 6" at jamb mullion long silicone sealant towards exterior portion of the horizontal air seal gasket on top of starter sill at each end. Do not allow sealant to skin before installing frame.

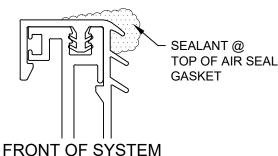
Install the first frame by lifting the frame over starter sill and lower the frame down and rest the

Figure 17





Use the set screw on anchor bracket to adjust the elevation of the frame. Adjust the elevation of the frame to make sure the frame is level, plumb and at the correct height. After adjustment, freeze the anchor hook for lateral movement by installing FS-8 1/4" by 1" hex head screw. Use metal shims if necessary to temporarily maintain the nominal distance between bottom of the mullion and top of the starter sill. Remove shims after adjustment for slip anchor condition at ground floor.



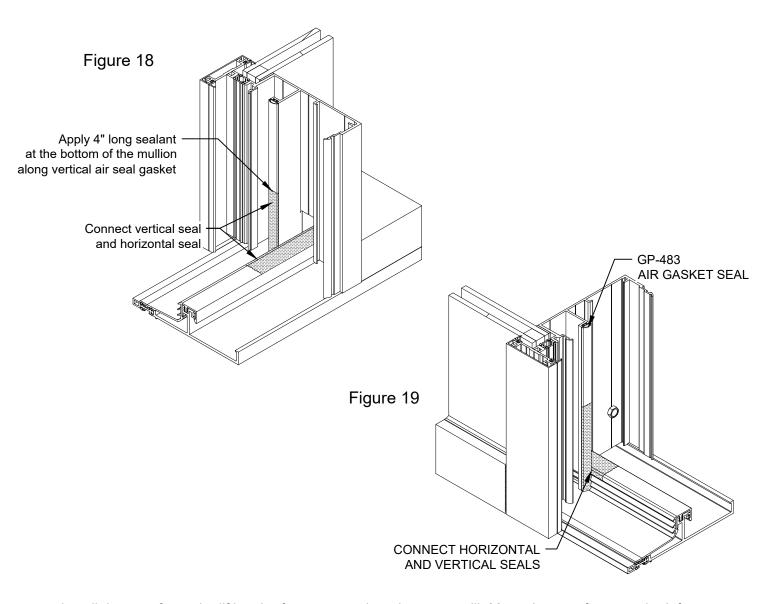
INSTALL FIRST FRAME

RU-647 Dead load block as required.

3" from & of mull

2. INSTALL ADJACENT FRAMES AT GROUND FLOOR

Just prior to installing the next frame, apply sealant at the bottom of the first frame up vertical air seal gasket GP-483 for approximately 4" long above horizontal air seal gasket. (Figure 18) Connect the vertical seal with the horizontal seal which was previously applied on top of the starter sill. (Figure 19) Do not allow sealant to skin before installing next frame.

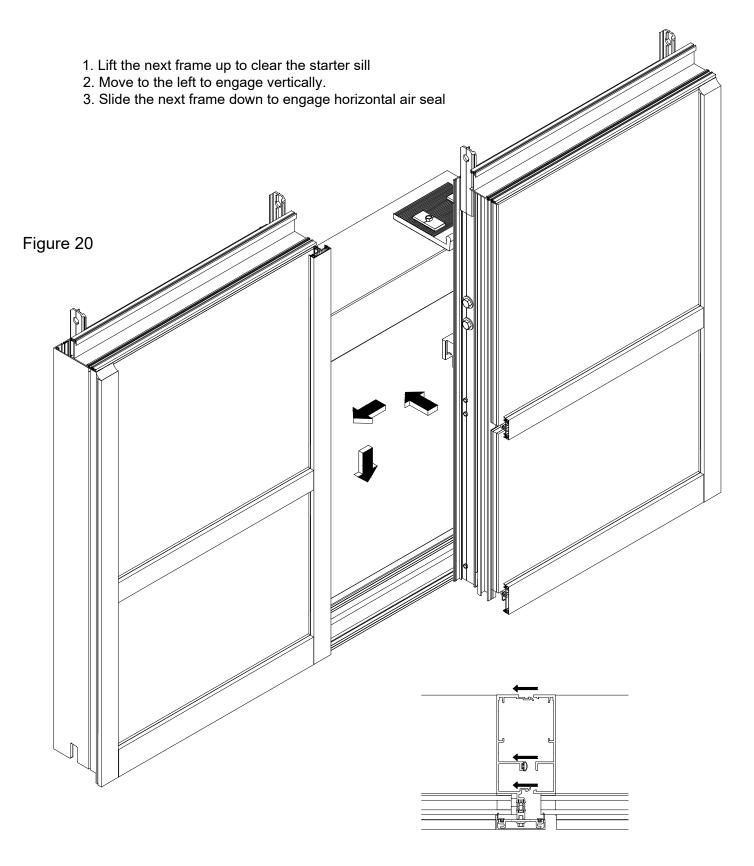


Install the next frame by lifting the frame up to clear the starter sill. Move the next frame to the left to engage the mullion hooks (see detail pg. 13); once snapped, slide the next frame down to engage horizontal air seal at stack joint.

Check and ensure vertical air seal gasket GP-483 has not slid down or up in the gasket raceway in mullion.

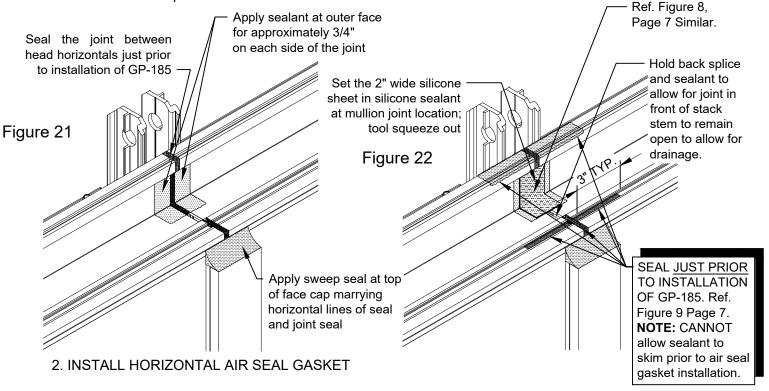
Repeat in the same method for installing the rest of the frames at ground floor.

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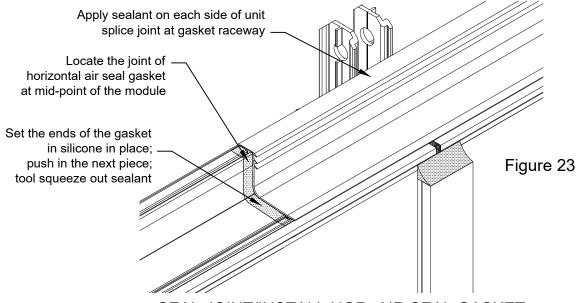


1. SEAL THE JOINTS

Clean and prepare the surfaces of the head horizontal at mullion joints per sealant manufacturer's recommendations. Apply sealant along the joint between head horizontals as shown; also apply sealant at front face for approximately 3/4" on each side of the joint as shown; set 2" wide by 3" long silicone sheet on top of the silicone sealant.



Install horizontal air seal gasket GP-185 into head horizontals continuously across elevation. Apply sealant for approximately 3" long on each side of the splice joint in gasket raceway, push gasket into raceway, tool squeeze out sealant. Where splicing of air seal gasket is necessary, locate the joint at mid-point of the module and apply bead of sealant to set the ends of gasket in place. Push in the next piece of gasket, tool squeeze out sealant and remove excess sealant from outer face.



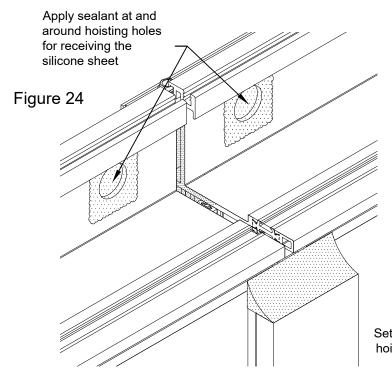
SEAL JOINT/INSTALL HOR. AIR SEAL GASKET

3. SEAL THE HOISTING HOLES FOR WINDLOAD ANCHOR LUG OPTION

For frames with windload anchor lug (shear angle) option, clean and prepare the surfaces of the head horizontal at mullion joints; apply sealant along the joint between head horizontals; also apply sealant at and around hoisting hole, set 2" by 2" silicone sheet at hoisting hole location.

See page 14 for installation of splice joint.

Then install horizontal air seal gasket GP-50041 into head horizontals continuously across elevation (see page 14 for proper procedure at unit joints). Where splicing is necessary, to locate the joint at mid-point of the module and apply bead of sealant and set the ends of gasket in place. Tool squeeze out sealant.



NOTE: Non-typical detail. Detail provided to illustrate hoisting hole sealing requirements. Refer to sheet Figure 25 14 Figures 21, 22 and 23 for typical sealant methods of horizontal splice and air seal gasket.

Set silicone sheets at hoisting hole locations

25

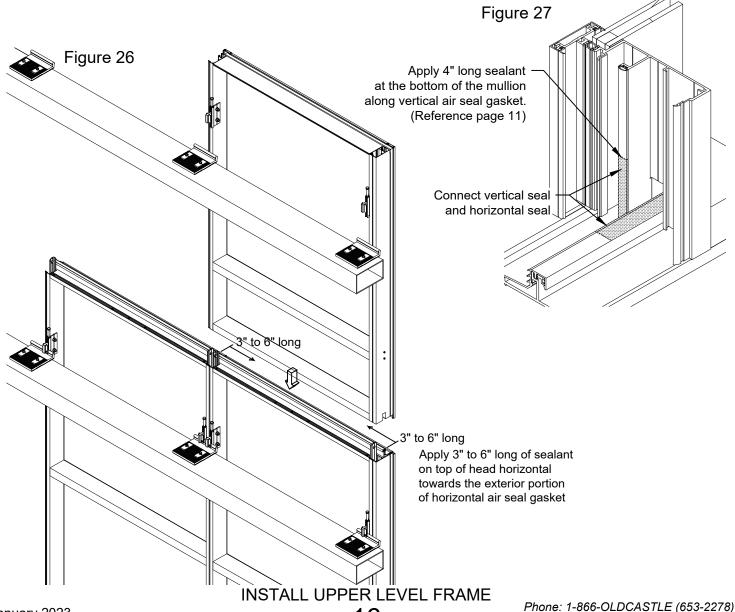
SEAL HOISTING HOLES (WITH SHEAR ANGLE)

4. INSTALL FIRST FRAME AT UPPER LEVEL

Before proceeding to upper level, check all horizontal joints at lower level to make sure they are properly sealed and horizontal air seal gaskets have been applied (reference page 9).

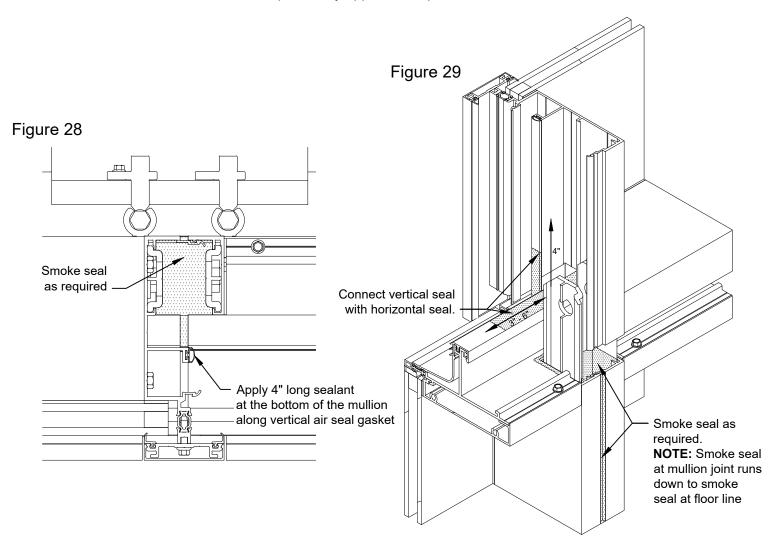
Apply a 3" to 6" long bead of silicone sealant towards exterior portion of the horizontal air seal gasket (reference page 11) on top of head horizontal at each end at the frame below. This sealant will marry into the 4" sealant applied to the vertical air barrier gasket. (reference page 12) (NOTE: Apply these sealants only just prior to installing the unit. DO NOT allow to skin) Install the first frame at upper level by lifting the frame over head horizontal and shear sleeve/lifting lug and lower the frame down.

Use the adjustment bolt on anchor bracket to adjust the elevation of the frame. **NOTE:** Do not use adjustment screw to raise unit. Use shims if necessary to maintain the nominal distance between bottom of the mullion and top of the head horizontal. Remove shims after adjustment.



5. INSTALL ADJACENT FRAMES AT UPPER LEVEL

Just prior to installing the next frame, apply sealant at the bottom of the first frame up vertical air seal gasket GP-186 for approximately 4" long above horizontal air seal gasket. Connect the vertical seal with the horizontal seal which was previously applied on top of the head horizontal.



Install the next frame by lifting the frame 4" to 6" above previous frame to clear the sleeves and head horizontals. Move the next frame to the left to engage the outer mullion hooks; then rotate the next frame towards building to snap inner hooks; once snapped, slide the next frame down to engage horizontal air seal at stack joint. (Reference page 18)

Again use adjustment bolt on anchor bracket to set the final elevation of the frame, then freeze the lateral movement by installing FS-8 screw on anchor hook.

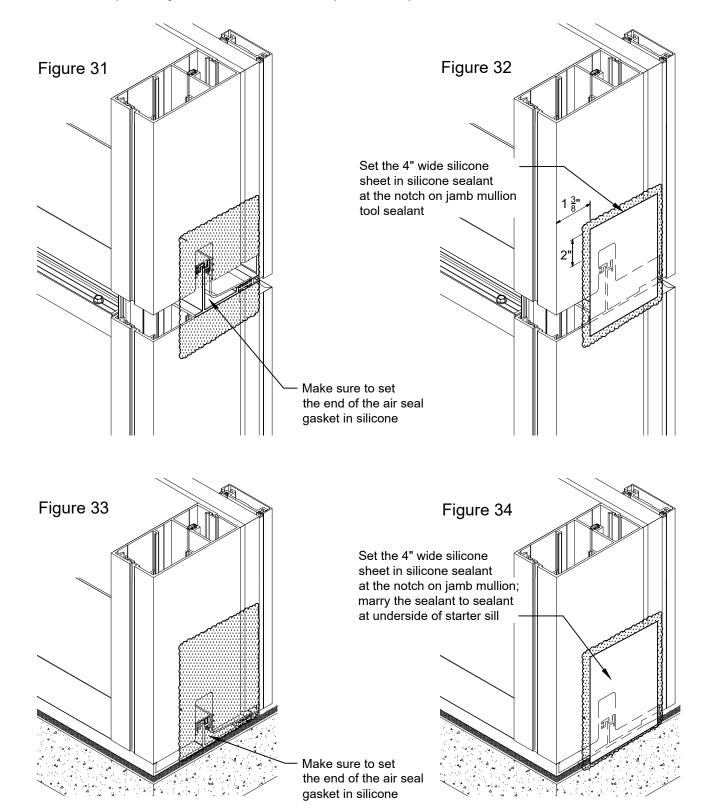
Repeat in the same method for installing the rest of the frames.

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- 1. Lift the next frame up to clear the starter sill
- 2. Move to the left to engage vertically.
- 3. Slide the next frame down to engage horizontal air seal Figure 30

1. SEAL AT THE NOTCH ON JAMB MULLION

For jamb frames at expansion joints or starter sills, apply sealant at the notch on mullion above and below the expansion joint. Set silicone sheet in place as required.



$\mathsf{RELIANCE}^{^{\!\top\!}}\mathsf{UNIT}\;\mathsf{WALL}\;\text{-}\;\mathsf{INSTALLATION}\;\mathsf{MANUAL}$

7" SYSTEM		
RU-662	Male Corner Mullion 90° Outside Captured	
RU-662	Female Corner Mullion 90° Outside Captured	
RU-632	Male Mullion Captured	
] RU-634	Female Mullion Captured	
RU-667	Jamb Captured	
RU-658	Jamb Non Captured	
RU-651	Male Mullion Non Captured	
] RU-652	Female Mullion Non Captured	
RU-653	Head Horizontal Non Captured	
RU-637	Filler Trim for Head Horizontal	
RU-650	Dead Load Sill Starter	
RU-649	Stack Horizontal @ Stack Condition	
[aa] RU-644	Head Horizontal @ Stack Condition	
PU-639	Sill 1" Infill, Captured	
RU-638	Standard Horizontal Captured	

RU-636	Head Horizontal Captured
RU-673	Sill Non Captured
RU-654	Standard Horizontal Non Captured
, " " RU-670	Dead Load Sill, Captured
TH RU-671	Dead Load Sill, Non Captured
8" SYSTEM	
RU-762	Male Corner Mullion 90° Outside Captured
RU-763	Female Corner Mullion 90° Outside Captured
RU-732	Male Mullion Captured
] RU-734	Female Mullion Captured
RU-767	Jamb Captured
RU-758	Jamb Non Captured
RU-751	Male Mullion Non Captured
RU-752	Female Mullion Non Captured
RU-753	Head Horizontal Non Captured
 RU-737	Filler Trim for Head Horizontal

RU-750	Dead Load Sill Starter
RU-749	Stack Horizontal @ Stack Condition
[] RU-744	Head Horizontal @ Stack Condition
PU-739	Sill, Captured
RU-738	Standard Horizontal Captured
RU-736	Head Horizontal Captured
RU-773	Sill Non Captured
RU-754	Standard Horizontal Non Captured
PU-770	Dead Load Sill, Captured
TH RU-771	Dead Load Sill, Non Captured
COMMON EXTRUSIONS	
RU-642	Pressure Plate for 3 1/2" Face Cap @ Stack, Captured
WW-1505	3 1/2" Face Cap @ Stack Condition, Captured
ፈ ሜ WW-162	Pressure Plate for 2 1/2" Face Cap (Typ.), Captured
WW-110	2 1/2" Face Cap @ Typical Condition, Captured
RU-641	Pocket Filler, Captured

EXTRUSION LIST 20

RU-737

$\mathsf{RELIANCE}^{^{\!\top\!}}\mathsf{UNIT}\;\mathsf{WALL}\;\text{-}\;\mathsf{INSTALLATION}\;\mathsf{MANUAL}$

RU-657	Perimeter Filler, Non Captured
SPW-1482	Perimeter Filler Cap, Non Captured
RU-230	Pressure Plate for 90° Corner Face Cap Captured
RU-231	Face Cap for 90° Corner Condition Captured
ACCESSORIES	
FS-289	Hex Head Bolt 3/8" X 1 1/4"
FSW-80	Flat Washer For 3/8" Bolt
FSN-81	Nut For 3/8" Bolt
FS-74	Hex Head Bolt 1/2"-13 X 2"
FSW-73	Flat Washer For 1/2" Bolt
FSW-71	Lock Washer For 1/2" Bolt
FSN-69	Nut For 1/2"-13 Bolt
[]	Typical Assembly Fastener
Eliminis FS-322	Vertical Pressure Plate, Pocket Filler / Chicken Head Fastener
‡ FS-325	Horizontal Pressure Plate Fastener (#12-24 X 1-11/32 HWH Self Drilling Screw)
с илининиши FS-347	Adjustment Bolt 3/8"-16x5" Square Head Cup Point Bolt

FS-346	Taplock Threaded Insert 3/8"-16x11/16"
FS-317	Attachment Pin
 UW-465	Silicone Splice 4"
 UW-466	Silicone Splice 2"
GP-492	Formed Silicone Boot for Sealing of 90° O.S. Corner
GP-483	Santoprene Weather Gasket
GP-142	EPDM Isolator
@ GP-50008	EPDM / Silicone Gasket
@	EPDM / Silicone Weatherseal Gasket
GP-185	Air Seal Gasket @ Stack
GP-186	Air Seal Gasket @ Sill
GP-484	1" X 1/4" Setting Block
GP-485	5/16" X 1/2" Spacer Block
HP-17	Edge Block Modified as Needed
3M™ VHB™ SGT	3M Structural Glazing Tape (NOT Provided by O.B.E)
UCW-8759	Serrated Washer

UCW-387	Anchor Lug Typical
(V) RU-668	7" Mullion Anchor Typical
UCW-20050	7" Mullion Anchor 90° O.S. Corner
UCW-309	Anchor Plate Typical
UCW-200	Serrated Anchor Plate Washer
UCW-6006	Lifting Lug Typical
) UCW-6012	Lifting Lug 90° O.S. Corner
RU-647	Dead Load Block
(U) 	8" Mullion Anchor Typical
<u>හ</u>	8" Mullion Anchor 90° O.S. Corner
RU-201	7" Sill Shear Angle
RU-204	8" Sill Shear Angle
RU-645	Stack Shear Angle

ACCESSORY LIST 21

UCW-8759