

SERIES 8750XD UNITIZED CURTAIN WALL

Installation Instructions Sections 1-15

Jan 2015

PART NO. Y80B

1000 COUNTY ROAD MONETT, MO 65708 • 800.221.4169 • EFCOCORP.COM



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Minimizing Condensation

Note: Please reference EFCO's "Understanding Condensation" brochure which can be obtained through your EFCO representative.

Condensation will form on any surface when unfavorable conditions (interior temperature and relative humidity and exterior temperature) are present. When the formation of excessive condensation is a concern, it is highly recommended that a design professional is utilized to perform an analysis of the shop drawings to recommend the best possible installation methods. Please contact your EFCO representative for information on EFCO's Thermal Analysis Services.

Many current installation practices lead to an increase in the possibility of the formation of condensation. Though not all inclusive, the list of examples below illustrates conditions under which condensation is likely to occur:

1. Bridging system thermal break with non-thermally broken metal flashing or lintels that are exposed to the exterior
2. System exposure to cold air cavities
3. Interior relative humidity levels not maintained at recommended levels, see EFCO's "Understanding Condensation" brochure
4. Inadequate separation between system and surrounding condition at perimeter
5. Product combinations during the shop drawing stage that result in bridging thermal breaks of one or all products involved.

Note: Assembly Instructions (Y807) are provided as a supplement, and should be used in conjunction with the approved shop drawings.

Section 1: General Notes And Guidelines

HANDLING / STORING / PROTECTING ALUMINUM

The following guidelines are recommended to ensure early acceptance of your products and workmanship.

- A. **HANDLE CAREFULLY** - Store with adequate separation between components so the material will not rub together. Store the material off the ground. Protect materials against weather elements and other construction trades.
- B. **KEEP MATERIAL AWAY FROM WATER, MUD, AND SPRAY** - Prevent cement, plaster, and other materials from contacting with and damaging the finish. Do not allow moisture to be trapped between the finished surface and the wrapping material.
- C. **PROTECT MATERIALS AFTER ERECTION** - Wrap or erect screens of plastic sheeting over material. Cement, plaster, terrazzo, and other alkaline materials are very harmful to the finish and are to be immediately removed with soap and water. Under no circumstances should these materials be allowed to dry or permanent staining may occur.

GENERAL GUIDELINES

The following practices are recommended for all installations:

- A. **REVIEW CONTRACT DOCUMENTS** – Become thoroughly familiar with the project. Check shop drawings, installation instructions, architectural drawings and shipping lists. The shop drawings take precedence and include specific details for the project. Shop drawings govern when conflicting information exists in the assembly and installation instructions. Note any **field verified** notes on the shop drawings prior to installing. EFCO assembly and installation instructions are general in nature and cover many conditions.
- B. **INSTALL ALL FRAMING MATERIAL PLUMB, LEVEL, AND TRUE** – Proper alignment and relationships to benchmarks and column centerlines, as established by the architectural drawings and the general contractor, must be maintained.
- C. **ERECTION SEQUENCE** - The sequence of erection should be coordinated with the project general contractor to prevent delays and minimize the risk of material damage. Note: When preset anchors are required, coordinate and supervise anchor and insert placement with the general contractor including insert layout drawings, where required.

Manufacturing, assembly, glazing, and shipment of the preglazed units must be carefully coordinated with the general contractor to ensure a continuous and sustained flow of materials to the appropriate areas of the project to meet the project schedule.

- D. **PERIMETER CONDITIONS** - Verify that all job site conditions and accompanying substrates receiving the installation are in accordance with the contract documents. If deviations occur, notification must be given **in writing** to the general contractor and differences resolved before proceeding further with the installation in the area in question.
- E. **ISOLATION OF ALUMINUM** - Prevent all aluminum from coming in direct contact with masonry or dissimilar materials by means of an appropriate primer. Typical slab anchors may be set directly onto concrete surfaces in a block-out pocket at the edge of the slab. The block-out pocket is later filled in with grout thereby covering the slab anchor. In such cases, a heavy coat of zinc chromate or bituminous paint must be pre-applied to the slab anchor.
- F. **SHIPMENT VERIFICATION** - Verify contents of all material shipments received upon their arrival. Verify quantity and correct finishes. **Notify EFCO immediately of any discrepancies or damage that may have occurred.**
- G. **SEALANT** - All sealant must meet [ASTM C 920, CLASS 50]. For the purposes of these instructions, sealant is to be defined as the following: SEALANT - A weather resistant, gunnable liquid filler which when cured provides a resilient, flexible ($\pm 50\%$ movement capability min.) air and water seal between similar and dissimilar materials.

All sealant must be compatible with all surfaces on which adhesion is required, including other sealant surfaces. All frame surfaces should be clean, dry, dust, and frost free. If a primer is required, it must be applied to clean surfaces. All perimeter substrates shall be clean and properly treated to receive sealant. All sealants and primers must be applied according to the sealant manufacturers instructions and recommendations.

This system is designed and has been tested to utilize silicone sealants at all internal joineries, i.e., joint plugs, gasket intersections, etc.

Section 1: General Notes And Guidelines

It is the responsibility of the glazing contractor to submit a statement from the sealant manufacturer indicating that glass and glazing materials have been tested for compatibility and adhesion with glazing sealants, and interpreting test results relative to material performance, including recommendations for primers and substrate preparation required to obtain adhesion. The chemical compatibility of all glazing materials and framing sealants with each other and with like materials used in glass fabrication must be established.

Maintain caulk joints as shown in the approved shop drawings. A 1" minimum joint is required at the head and jamb condition to accommodate installation, building movements, and thermal expansion and contraction.

- H. **STRUCTURAL SEALANT JOINTS** - The maximum allowable size of the glass lite is controlled by the width and depth of the structural silicone joint combined with the specified design wind load (PSF or Pa). The stress on the structural silicone must not exceed 20 PSI (137 KPa) for a 6:1 safety factor.

In order to determine the structural silicone sealant contact width or bite which adheres the glass to the frame, a calculation must be performed on a job by job basis. The formula which determines the sealant width is based on using a trapezoidal load distribution rule. This formula is expressed as follows:

$$\text{Structural Sealant} = \frac{0.5 \times \text{Short Span (ft)} \times \text{Wind load (lb/ft}^2\text{)}}{\text{Sealant Design Strength (}=20 \text{ lb/in}^2\text{)} \times 12 \text{ in/ft}}$$

Bite or Contact Width (in)

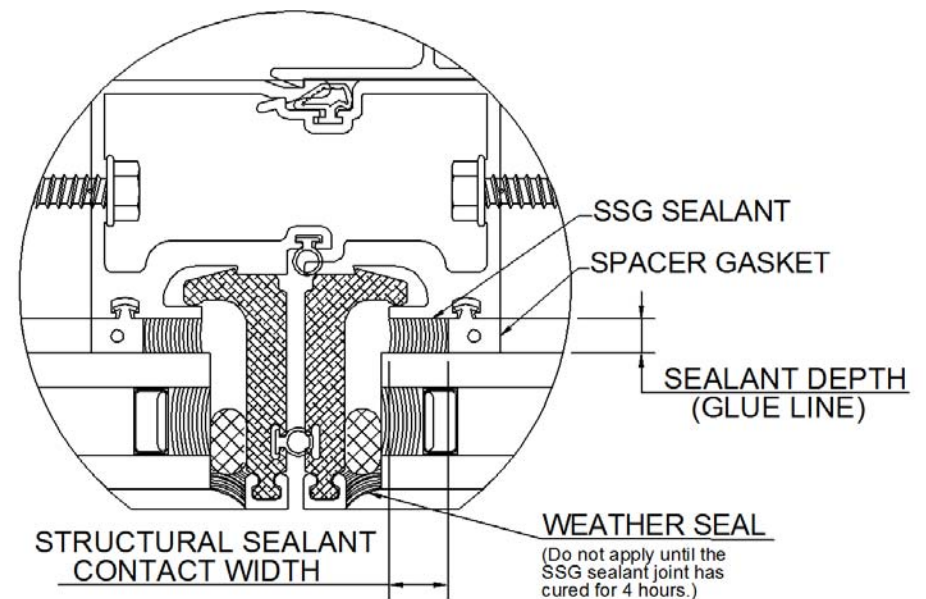
Example: Lite size is 4'0" x 5'0" and wind load for the project is 60 psf.

$$\text{Structural Sealant} = \frac{0.5 \times 4' \times 60 \text{ psf}}{20 \times 12} \text{ or } \frac{120}{240} \text{ or } .500"$$

Bite or Contact Width (in)

Sealant manufacturers, as a general rule, specify the structural sealant depth (glue line) to be one half of the contact width for a 2:1 width to height ratio. The glue line should not exceed 3/8" thickness nor be less than 1/4" thick. The standard joint size for Series 8750XD is 1/2" x 1/4". Note: Weather seals must be applied a minimum of four hours after the application of the SSG sealant joint to allow for proper cure time.

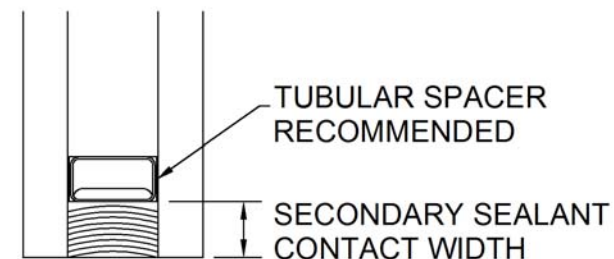
SECONDARY SEALANT JOINT DETAIL



- I. **SECONDARY SEALANT JOINT DESIGN** - The design of the secondary sealant joint is based on the 50:50 load sharing principal where the I.G. unit is comprised of two symmetrical lites of glass. The secondary sealant joint that adheres the two lites of glass together only carries half the wind load applied to the I.G. unit. Since the load is halved, the secondary sealant contact width is half that of the SSG joint. Using the example earlier for the 1/2" x 1/4" SSG joint, the secondary sealant contact width for the I.G. unit in the example is 1/4".


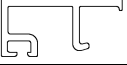
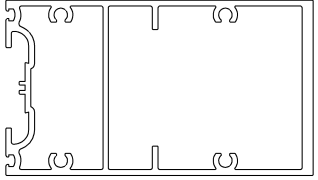
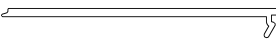
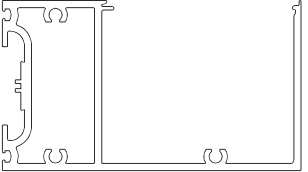
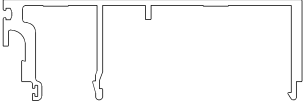
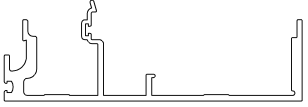
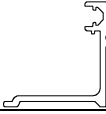
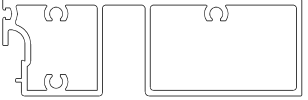
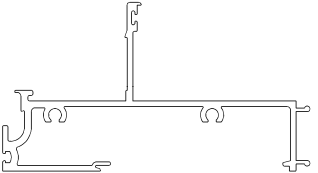
Edge deletion is required on the coated surface (#2 or #3) for hard or soft coated glazing products.

SECONDARY SEALANT JOINT DETAIL

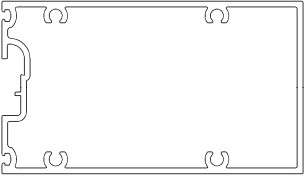
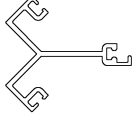





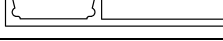




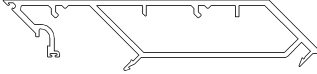



Section 2 - Parts Identification

EXTRUSION IDENTIFICATION

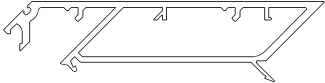
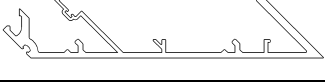


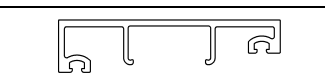

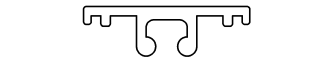
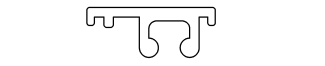

Profile	Part #	Description	Tooling/Cut Length Formula
	17T1	3" STANDARD COVER	17T1-001
	17T2	STANDARD HALF COVER	17T2-001
	17T3	STANDARD INTERMEDIATE HORIZONTAL	17T3-001, 17T3-002, 17T3-003, 17T3-004, 17T3-005, 17T3-006, 17T3-007, 17T3-008, 17T3-009, 17T3-010, 17T3-01
	17T5	HEAD OR JAMB FILLER	17T5-001, 17T5-002, 17T5-003, 17T5-004, 17T5-005, 17T5-006
	17T6	HEAD OR CUSTOM JAMB	17T6-001, 17T6-002, 17T6-003, 17T6-004, 17T6-005, 17T6-006
	17T7	SPLIT MULLION #1	17T7-001, 17T7-002, 17T7-003, 17T7-004, 17T7-005, 17T7-006
	17T8	SPLIT MULLION #2	17T8-001, 17T8-002, 17T8-003, 17T8-004, 17T8-005, 17T8-006
	17T9	SNAP IN NECK	17T9-001, 17T9-002, 17T9-003, 17T9-004, 17T9-005, 17T9-006
	17U0	STACK SILL	17U0-001, 17U0-002, 17U0-003, 17U0-004, 17U0-005, 17U0-006
	17U1	STACK HEAD	17U1-001, 17U1-002, 17U1-003, 17U1-004, 17U1-005, 17U1-006

EXTRUSION IDENTIFICATION




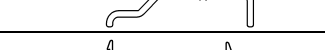
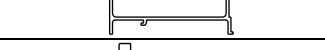
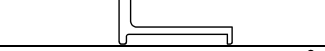
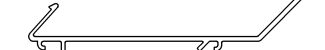
Profile	Part #	Description	Tooling/Cut Length Formula
	17U3	SSG HORIZONTAL	17U3-001, 17U3-002, 17U3-003
	17U4	90 DEG INSIDE CORNER COVER	17U4-001
	17V1	SSG DROP LEG COVER	17V1-001
	17V2	90 DEG OUTSIDE CORNER COVER	17V2-001
	17V3	EXTENDED LEG SSG COVER	17V3-001, 17V3-002, 17V3-003, 17V3-004, 17V3-005, 17V3-006, 17V3-007
	17V4	STANDARD SSG COVER	17V4-001
	17V5	5/8" THERMAL DOOR STOP COVER	DOOR FRAME CLEAR OPENING (NEED PREP)
	17V6	INTERIOR HORIZ. SNAP TRIM	STOCK LENGTH (NEED PREP)
	17V9	TRANSOM DOOR HEADER	DOOR FRAME CLEAR OPENING (NEED PREP)
	17W2	1/2" THERMAL DOOR STOP COVER	DOOR FRAME CLEAR OPENING (NEED PREP)
	17W3	SSG 90 DEG OUTSIDE CORNER COVER	17W3-001
	17W4	SSG 90 DEG INSIDE CORNER COVER	17W4-001
	17W6	MALE 90 DEG INSIDE CORNER HALF	17W6-001, 17W6-002, 17W6-003, 17W6-004, 17W6-005, 17W6-006, 17W6-007
	17W7	FEMALE 90 DEG INSIDE CORNER HALF	17W7-001, 17W7-002, 17W7-003, 17W7-004, 17W7-005, 17W7-006, 17W7-007

Section 2 - Parts Identification

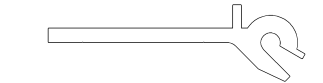


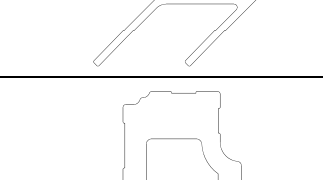
EXTRUSION IDENTIFICATION

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	17W8	MALE OUTSIDE CORNER HALF	17W8-001, 17W8-002, 17W8-003, 17W8-004, 17W8-005, 17W8-006, 17W8-007
	17W9	FEMALE OUTSIDE CORNER HALF	17W9-001, 17W9-002, 17W9-003, 17W9-004, 17W9-005, 17W9-006, 17W9-007
	17X5	3" COVER FOR 1 1/4" GLAZING AND VENTS	17X5-001
	17X6	HALF COVER FOR 1 1/4" GLAZING AND VENTS	17X6-001
	17X7	3" COVER FOR 1" GLAZING OVER VENTS	17X7-001
	17X8	STANDARD SSG COVER FOR VENT LOCATIONS	17X8-001
	17X9	SSG COVER INTER. HORIZONTAL VENT OVER VENT	17X9-001
	17Y0	SSG COVER FOR VENTS AT SILL OR HORIZONTAL	17Y0-001
	17Y1	SSG COVER FOR VENTS AT JAMBS	17Y1-001

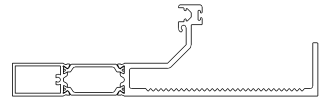
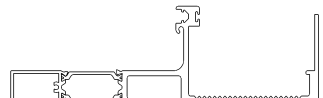
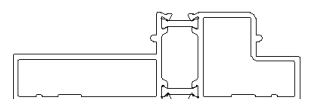
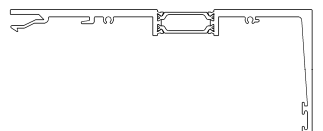
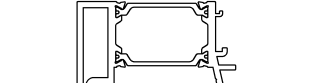
FABRICATED PART EXTRUSION IDENTIFICATION

Profile	Part #	Description	Tooling/Cut Length Formula
	17T4	HANGER	FM41
	17U2	.090 X 3.000 BAR	FM39
	17U8	DYNAMIC LOAD CLIPS	FM48
	17U9	STATIC LOAD CLIPS	FM45, FM46 & FM47
	17V0	SPLIT MULL CLIP	FM40
	17V8	DYNAMIC LOAD CLIPS	FM49, FM50, FM51, FM52 & FM53
	17W5	CORNER SNAP CLIP	FM70

FABRICATED PART EXTRUSION IDENTIFICATION



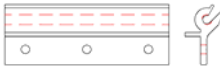


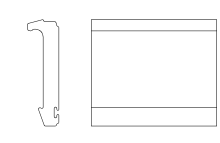
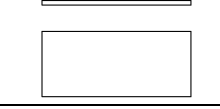

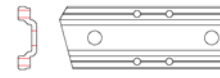
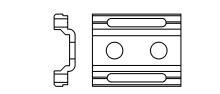
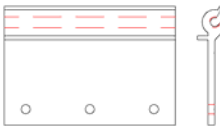
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	17X0	90° OUTSIDE CORNER MULLION ANCHOR	FM43
	17X1	90° INTSIDE CORNER MULLION ANCHOR	FM44
	17Z7	INSIDE OUTSIDE CORNER GUIDE CLIP	FM78
	17Z8	SUN SHADE BRACKET	FM82

COMPOSITE IDENTIFICATION

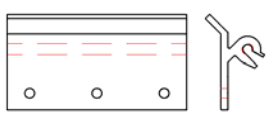
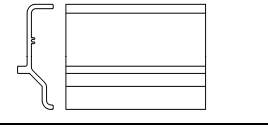
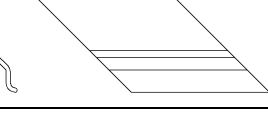
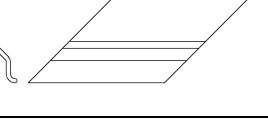

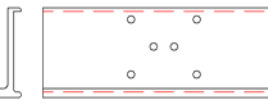
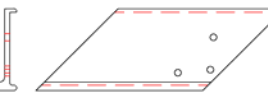
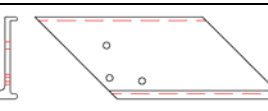
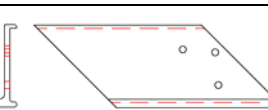
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	1H91	STATIC SILL CAN	STOCK LENGTH 1H91-001
	1H92	DYNAMIC SILL CAN	STOCK LENGTH 1H92-001
	1H93	DOOR ADAPTOR	FABRICATED ONLY (NEED PREP)
	1H94	SUB HEAD FOR 7 1/2" SYSTEM DEPTH	FABRICATED ONLY (NEED PREP)
	1H97	SCREW APPLIED THERMAL JAMB ADAPTOR	STOCK LENGTH

Section 2 - Parts Identification

“ F ” PART IDENTIFICATION

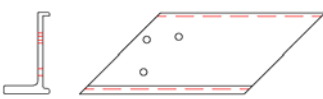
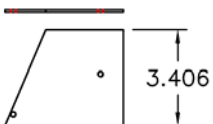
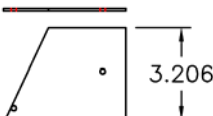


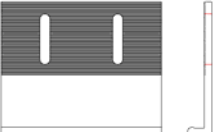
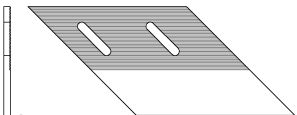
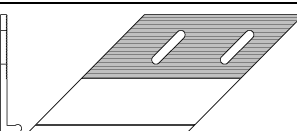
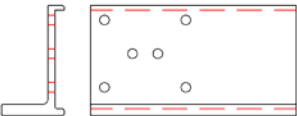

Profile	Part #	Description	Materials
	FM05	HOOK ANCHOR (LEFT)	17D2 (MILL)
	FM06	HOOK ANCHOR (RIGHT)	17D2 (MILL)
	FM07	90 DEG OUTSIDE CORNER MULLION ANCHOR	17F3 (MILL)
	FM11	MULLION ANCHOR	17D1 (MILL)
	FM17	ANCHOR BOLT RETAINER	12D8 (MILL)
	FM38	LARGE DURACAST CLIP	LC46 PAINTED DARK BROWN
	FM39	SILL CAN END CAP BEHIND DOOR JAMB	17U2 FINISH PER JOB
	FM40	SPLIT MULLION ATTACHMENT CLIP	17V0 CLEAR ANODIZED
	FM41	RIGHT HAND HANGER/LOAD CLIP	17T4 (MILL)
	FM42	OPTIONAL RETRACTABLE HANGER	17T4 (MILL)
	FM43	90 DEG OUTSIDE CORNER MULLION ANCHOR	17X0 (MILL)

“ F ” PART IDENTIFICATION

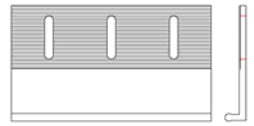
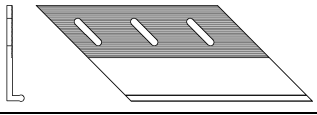
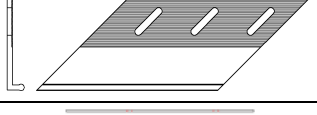

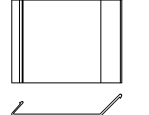
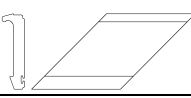
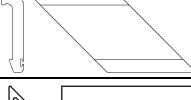
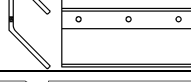


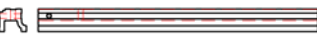
Profile	Part #	Description	Materials
	FM44	90 DEG INSIDE CORNER MULLION ANCHOR	17X1 (MILL)
	FM45	STATIC SILL LOADING CLIP	17U9 (MILL)
	FM46	LEFT HAND STATIC SILL LOADING CLIP FOR 90 DEG OUTSIDE CORNERS	17U9 (MILL)
	FM47	RIGHT HAND STATIC SILL LOADING CLIP FOR 90 DEG OUTSIDE CORNERS	17U9 (MILL)
	FM48	DYNAMIC LOAD CLIP (TOP HALF)	17U8 (MILL)
	FM49	DYNAMIC LOAD CLIP (BASE)	17V8 (MILL)
	FM50	LEFT HAND 90 DEG INSIDE CORNER DYNAMIC LOAD CLIP (BASE)	17V8 (MILL)
	FM51	RIGHT HAND 90 DEG INSIDE CORNER DYNAMIC LOAD CLIP (BASE)	17V8 (MILL)
	FM52	LEFT HAND 90 DEG OUTSIDE CORNER DYNAMIC LOAD CLIP (BASE)	17V8 (MILL)

Section 2 - Parts Identification

“ F ” PART IDENTIFICATION

Profile	Part #	Description	Materials
	FM53	RIGHT HAND 90 DEG OUTSIDE CORNER DYNAMIC LOAD CLIP (BASE)	17V8 (MILL)
	FM55	DYNAMIC SILL END DAM	.090 THICK ALUMINUM SHEET (MILL)
	FM56	STATIC SILL END DAM	.090 THICK ALUMINUM SHEET (MILL)
	FM59	SERRATED WASHER FOR 3/8" FASTENER	17D3 (MILL)
	FM60	SERRATED WASHER FOR 1/2" FASTENER	17D3 (MILL)
	FM61	11" SLAB ANCHOR	17D4 (MILL)
	FM62	LEFT HAND SLAB ANCHOR FOR 90 DEG CORNERS	17D4 (MILL)
	FM63	RIGHT HAND SLAB ANCHOR FOR 90 DEG CORNERS	17D4 (MILL)
	FM64	LEFT HAND JAMB DYNAMIC LOAD CLIP (BASE)	17V8 (MILL)
	FM65	RIGHT HAND JAMB DYNAMIC LOAD CLIP (BASE)	17V8 (MILL)

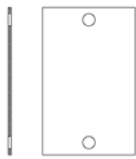
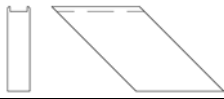




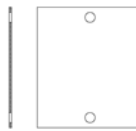

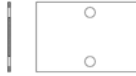













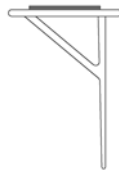

“ F ” PART IDENTIFICATION

Profile	Part #	Description	Materials
	FM66	16" HIGH LOAD SLAB ANCHOR	17D4 (MILL)
	FM67	LEFT HAND HIGH LOAD SLAB ANCHOR FOR CORNERS	17D4 (MILL)
	FM68	RIGHT HAND HIGH LOAD SLAB ANCHOR FOR CORNERS	17D4 (MILL)
	FM69	SUB HEAD END DAM	.090 THICK ALUMINUM (MILL)
	FM70	INSIDE/OUTSIDE CORNER MULLION ATTACHMENT CLIP	17W5 CLEAR ANODIZED
	FM71	DURACAST CORNER CLIP #1	LC46 PAINTED DARK BROWN
	FM72	DURACAST CORNER CLIP #2	LC46 PAINTED DARK BROWN
	FM78	CORNER ALIGNMENT CLIP	17X7 (MILL)
	FM79	SPLICE SLEEVE FOR 17N1 SUB HEAD	ABB2 (MILL) SHEET ALUM
	FM80	SPLICE SLEEVE FOR 1H94 SUB HEAD	ABB2 (MILL) SHEET ALUM
	FM82	SUNSHADE BRACKET FOR 11" & 13" ARMS	17Z8 (MILL)

Section 2 - Parts Identification




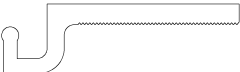
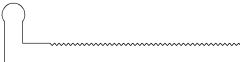
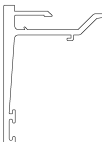



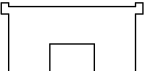

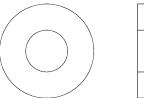
PART IDENTIFICATION

EXISTING EXTRUSIONS, PARTS, FASTENERS & WEATHERING ID


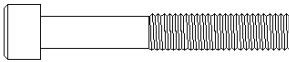



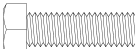
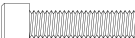








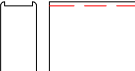

Profile	Part #	Description	Materials	Profile	Part #	Description	Materials
	H12A	FIXED FRAME GASKET #1	PVC FOAM (BLACK)		HD25	CAPTURED OUT-SIDE CORNER JOINT PLUG	EPDM GP SPONGE (BLACK)
	H12B	FIXED FRAME GASKET #2	PVC FOAM (BLACK)		HD26	CAPTURED INSIDE CORNER JOINT PLUG	EPDM GP SPONGE (BLACK)
	H12C	FIXED FRAME GASKET #3	PVC FOAM (BLACK)		LC45	SSG THERMAL SPACER	DURACAST (PAINTED DARK BROWN)
	H12D	90 DEG CORNER FRAME GASKET #1	PVC FOAM (BLACK)		LC46	STANDARD THERMAL SPACER	DURACAST (PAINTED DARK BROWN)
	H12E	90 DEG CORNER FRAME GASKET #2	PVC FOAM (BLACK)		9865	2-PC DOOR STOP USED WITH 9866	ALUMINUM
	H12F	90 DEG CORNER FRAME GASKET #3	PVC FOAM (BLACK)		9866	SNAP COVER USED WITH 9865	ALUMINUM
	H12G	MULLION CAP GASKET	PVC FOAM (BLACK)		LC50	THERMAL POCKET FILLER	HIGH IMPACT PVC (BLACK)
	H12H	90 DEG CORNER MULLION CAP GASKET	PVC FOAM (BLACK)		WA12	SUBHEAD WEATHERING	ALCRYN AND PVC (BLACK)
	HC05	FOAM SEALANT BACKER	PVC FOAM (GREY)		WC20	INSIDE CORNER EXTERIOR BULB	EPDM (BLACK)
	HC13	FIXED FRAME SILICONE SPLICE SHEET	SILICONE SHEET (BLACK)		WEA2	STACK GASKET	EPDM (BLACK)
	HC14	SSG FRAME SILICONE SPLICE SHEET	SILICONE SHEET (BLACK)		WEA4	GLAZING DART FOR VENTS	SANTOPRENE (BLACK)
					LC54	STACK SWEEP	PVC WITH VHB TAPE
					12D8	BOLT RETAINER EXTRUSION	12D8 (MILL)

Section 2 - Parts Identification

EXISTIING EXTRUSIONS, PARTS, FASTENERS & WEATHERING ID

Profile	Part #	Description	Tooling/Cut Length Formula
	17D1	MULLION ANCHOR EXTRUSION	17D1 (MILL)
	17D2	STANDARD HOOK ANCHOR EXTRUSION	17D2 (MILL)
	17D3	SILL WASHER EXTRUSION	17D3 (MILL)
	17M6	UNDER SLAB ANCHOR EXTRUSION	17M6 (MILL)
	17M7	SLAB ANCHOR EXTRUSION	17M7 (MILL)
	17N1	SUB HEAD COVER EXTRUSION	17N1 FINISH PER JOB
	9123	HEADER GLASS STOP	9123 FINISH PER JOB
	9914	HEADER DOOR STOP	9914 FINISH PER JOB
	HN09	STANDARD SETTING BLOCK	HNO9 SILICONE
	HN32	HEADER SETTING BLOCK	HN32 SILICONE
	HIQ2	UNIT HANGER MOUNTING NUT	IHQ2 #3/8-16 HEX NUT-ZC
	ILK6	UNIT HANGER BOLT WASHER/SPACER	ILK6 #12 (1/4-ID., 9/16-OD.) FWSHR 18-8

EXISTIING EXTRUSIONS, PARTS, FASTENERS & WEATHERING ID

Profile	Part #	Description	Materials
	M141	HANGER LOCK WASHER	M141 SPRGLW BLK STL
	M176	SLAB HANGER JACKING BOLT	1/2-13 X 3 1/2 SHSS-MS 18-8
	M170	SLAB HANGER JACKING SCREW	1/2"-13 X 1 1/2" SOCKET SET SCREW W/ CUP POINT STEEL
	M171	SLAB HANGER LOCKING SCREW	#1/4-14 X 1 1/2 HW- -SMS SG TEK/3
	M173	UNIT HANGER BOLT LOCK NUT	1/4-20 NYLON INSERT HEX NUT -18-8
	M174	MULLION MOUNTING BOLT	
	MTZ0	UNIT HANGER BOLT	MTZ0 - 1/4"-20 X 1" SHCS-MS 18-8
	LC23	NECK SPACER	PVC (BLACK)
	SPZ1	END DAM SCREW	#8-15 X 3/4 PL-PH-SMS 18-8 AB
	SPZ3	DOOR STOP MOUNTING SCREW	#8-15 x 1 1/4 PL-PH-SMS 18-8 A
	STC7	JAMB/HEAD END DAM MOUNTING SCREW	#6-18 X 3/8 PL-PH-SMS 18-8 A
	WA02	BULB WEATHERING FOR DURACAST	EPDM (BLACK)
	WC18	OFFSET SSG SPACER	SILICONE (BLACK)
	WC21	VERTICAL STACK AIR SEAL	SILICONE (BLACK)
	WC22	5/16" WEDGE DRY GLAZE EXTERIOR GASKET	EPDM (BLACK)
	WNC1	STANDARD JOINT PLUG	EPDM SPONGE (BLACK)
	WSD2	STANDARD DRY GLAZE INTERIOR GASKET	EPDM SPONGE (BLACK)

Section 2 - Package Identification

“ K ” PACKAGE IDENTIFICATION

Part	Description	Finish	Cut Length	Tooling Reference	Parts used For Assembly
KV19	HANGER/LOAD CLIP	MILL	FM41 - 6.223	PUNCH	FM41 (2) MTZO (4) M173 (4)
KV20	OPTIONAL RETRACTABLE HANGER	MILL	FM42 - 3.000	CUT & MILL	FM42 (2) MTZO (4) M173 (4)
KV21	90 DEG OUTSIDE CORNER MULLION ANCHOR	MILL	FM43/17 - 8.000	CUT & DRILL	FM43 (1) FM17 (1) M170 (1) M172 (3) M174 (3) M176 (1)
KV22	90 DEG INSIDE CORNER MULLION ANCHOR	MILL	FM44/17 - 8.000	CUT & DRILL	FM44 (1) FM17 (1) M170 (1) M172 (3) M174 (3) M176 (1)
KV23	RIGHT HAND 90 DEG OUTSIDE CORNER SLAB ANCHOR	MILL	FM62 - 16.000	CUT & MILL	FM62 (1) FM60 (2)
KV24	JAMB OR 90 DEG INSIDE CORNER SLAB ANCHOR	MILL	FM61 - 11.000	CUT & MILL	FM61 (1) FM60 (2)
KV25	MULLION DYNAMIC LOADING CLIP	MILL	FM49 - 8.000	CUT	FM49 (1) FM48 (1) STB1 (6)
KV26	LEFT HAND JAMB DYNAMIC LOADING CLIP	MILL	FM64 - 8.000	CUT	FM64 (1) FM48 (1) STB1 (6)
KV27	STANDARD MULLION ANCHOR	MILL	FM11/17 - 8.000	CUT & DRILL	FM11 (1) FM17 (1) M170 (1) M172 (3) M174 (3) M176 (1)
KV28	RIGHT HAND JAMB DYNAMIC LOADING ANCHOR	MILL	FM65 - 5.500	CUT	FM65 (1) FM48 (1) STB1(6)
KV29	INSIDE CORNER DYNAMIC LOADING CLIP	MILL	FM50/51 - 8.000	CUT	FM50 (1) FM51 (1) FM48 (1) STB1 (6)
KV30	OUTSIDE CORNER DYNAMIC LOADING CLIP	MILL	FM52/53 - 8.000	CUT	FM52 (1) FM53 (1) FM48 (1) STB1 (6)
KV31	DYNAMIC SILL END DAM	MILL	FM55 - 5.188	SHEAR & PUNCH	FM55 (1) STC7 (2)
KV32	STATIC SILL END DAM	MILL	FM56 - 4.188	SHEAR & PUNCH	FM56 (1) STC7 (2)
KV34	LEFT HAND 90 DEG OUTSIDE CORNER SLAB ANCHOR	MILL	FM63 - 16.000	CUT & MILL	FM63 (1) FM60 (2)
KV35	HIGH LOAD RIGHT HAND 90 DEG OUTSIDE CORNER SLAB ANCHOR	MILL	FM67 - 21.000	CUT & MILL	FM67 (1) FM60 (3)
KV36	HIGH LOAD LEFT HAND 90 DEG OUTSIDE CORNER SLAB ANCHOR	MILL	FM68 - 21.000	CUT & MILL	FM68 (1) FM60 (3)
KV37	HIGH LOAD MULLION, JAMB OR 90 DEG INSIDE CORNER SLAB ANCHOR	MILL	FM66 - 21.000	CUT & MILL	FM66 (1) FM60 (3)
KV39	STACK SILICONE END DAM	SILICONE	HC13 - 5.250		HC13 (1) WO7V (4")
KV41	SUB HEAD END DAM	MILL	FM69 - 8.156	SHEAR & PUNCH	FM69 (1) SPZ1 (2)
KV43	DOOR JAMB END CAP	PER JOB	FM39 - 3.000	SHEAR	FM39 (1) WO7V (3")
KV46	RIGHT HAND SLAB HOOK ANCHOR	MILL	FM06 - 3.000	CUT & MILL	FM06 (1) M171 (1)
KV47	LEFT HAND SLAB HOOK ANCHOR	MILL	FM05 - 3.000	CUT & MILL	FM05 (1) M171 (1)
KV48	11" & 13" SUN SHADE ARM MOUNTING BRACKET	MILL	FM82 - 13.000	CUT & DRILL	FM82 (1) S124 (5) S134 (6)
KV49	INSIDE OR OUTSIDE CORNER ALIGNMENT CLIP	MILL	FM78 - 4.000	CUT & MILL	FM78 (1) STC7 (3)

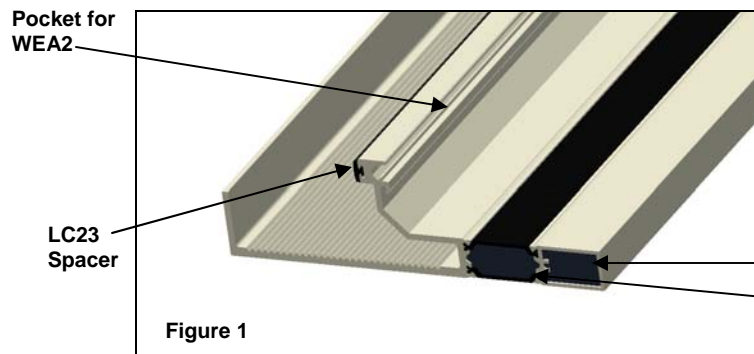
Section 3 - Static Starter Sill Preparation and Installation

Projects will be produced by EFCO in one of two ways: 1) As a stock length product where all fabrication, assembly, and glazing will be performed by the customer, or: 2) Prefabricated "knock down" where EFCO fabricates the materials, and the customer performs the assembly, and glazing. The materials shown here in the installation instructions may be received in the field with varying degrees of shop assembly, with some items shop installed, and other items to be field installed. Certain assembly and installation procedures shown and described in this document may be performed in the shop or the field at the discretion of the assembler.

1. Preparation of the Static Starter Sill:

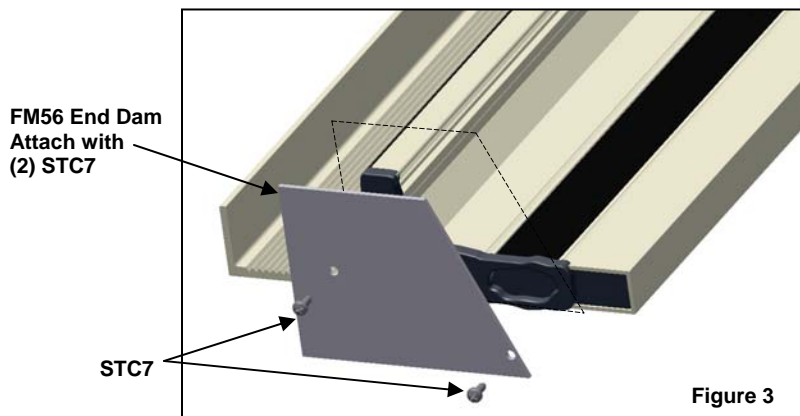
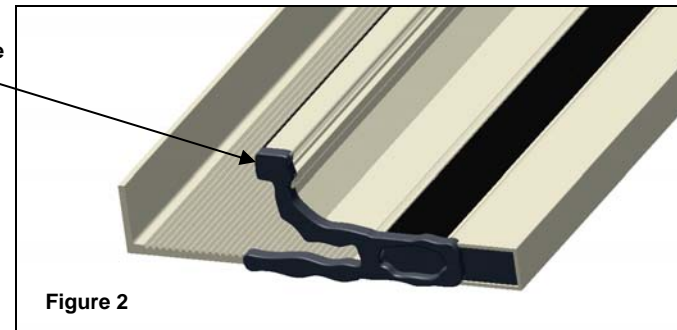
- a. The static starter sill may have an end dam pre-attached and sealed at the jamb condition. Ensure that the end dam is properly applied and sealed to the starter sill as described below. This is a critical seal and the joint must be carefully tooled to create a watertight seal. See Figures 1, 2, 3 & 4.
- b. The starter sill may have LC23 spacer pre-applied. The LC23 is cut to the length of the starter sill. The WEA2 gasket will not be applied at this point, it will be applied once all sections of the sill are set to avoid having seams or splices. This will be covered later in these instructions.
- c. Plug the both ends of the tubular section of the starter sill by recessing backer rod at least 1" into the end of the tube. Fill the voids in the tube and between the thermal struts with sealant and tool smooth.

Clean all sealant contact surfaces using an approved solvent or cleaner of all oils and other contaminants. The sealant manufacturer's preparation and application instructions should be followed exactly. If sealant primer is required, apply it per the primer/sealant manufacturer's instructions.

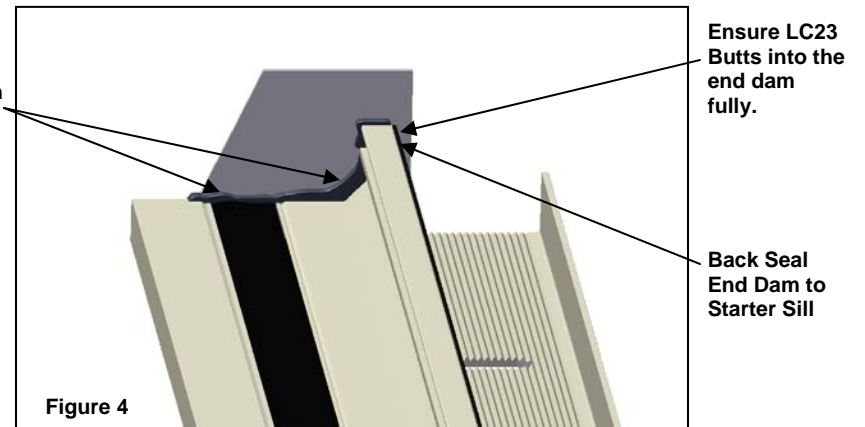


Silicone Sealant along profile to be covered by end dam

Plug with backer rod and fill the voids in the tube and between the thermal struts with sealant and tool sealant



Tool sealant smooth into joints.



Section 3 - Static Starter Sill Preparation and Installation

- d. A static loading clip (FM45) is required at each jamb and intermediate vertical. Two are required at corner mullion conditions (FM46 and FM47). The anchors are used to transfer end load reactions from the verticals into the anchoring system. Before installation of the static starter sill, slide the appropriate number of static loading clips into each section of starter sill. See Figures 5 and 6.
- e. Slide the static loading clips into final position before the starter sill anchor bolts have been applied.

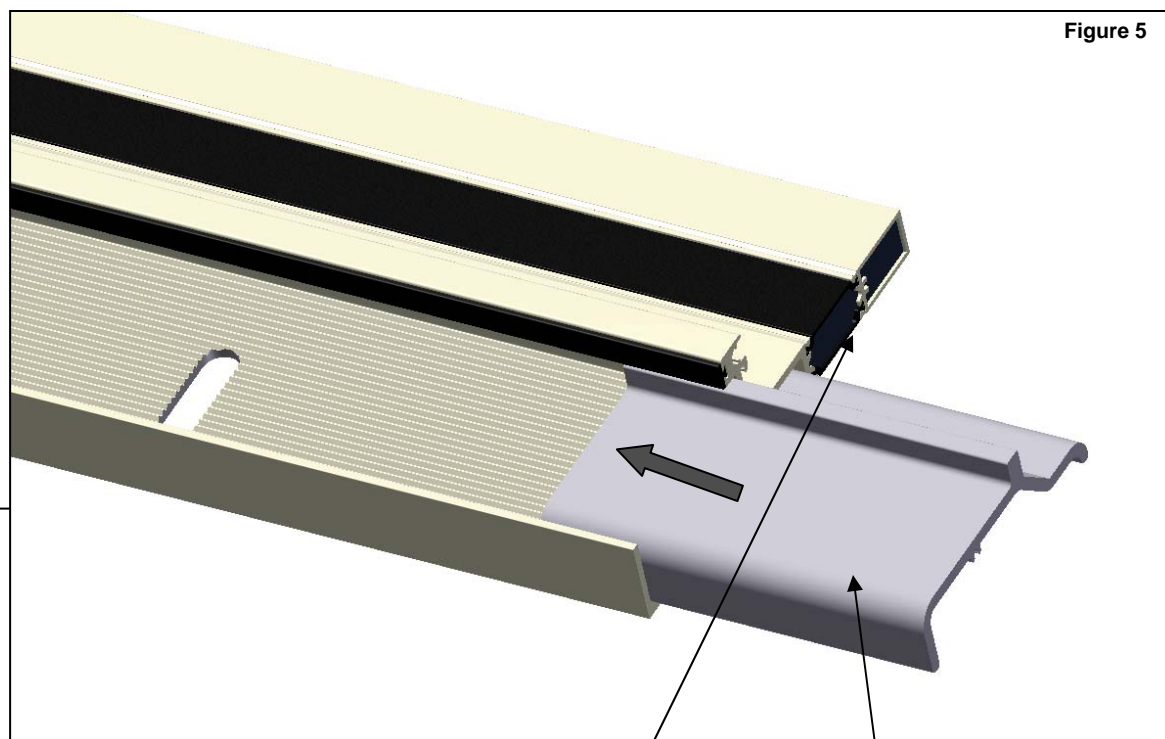


Figure 5

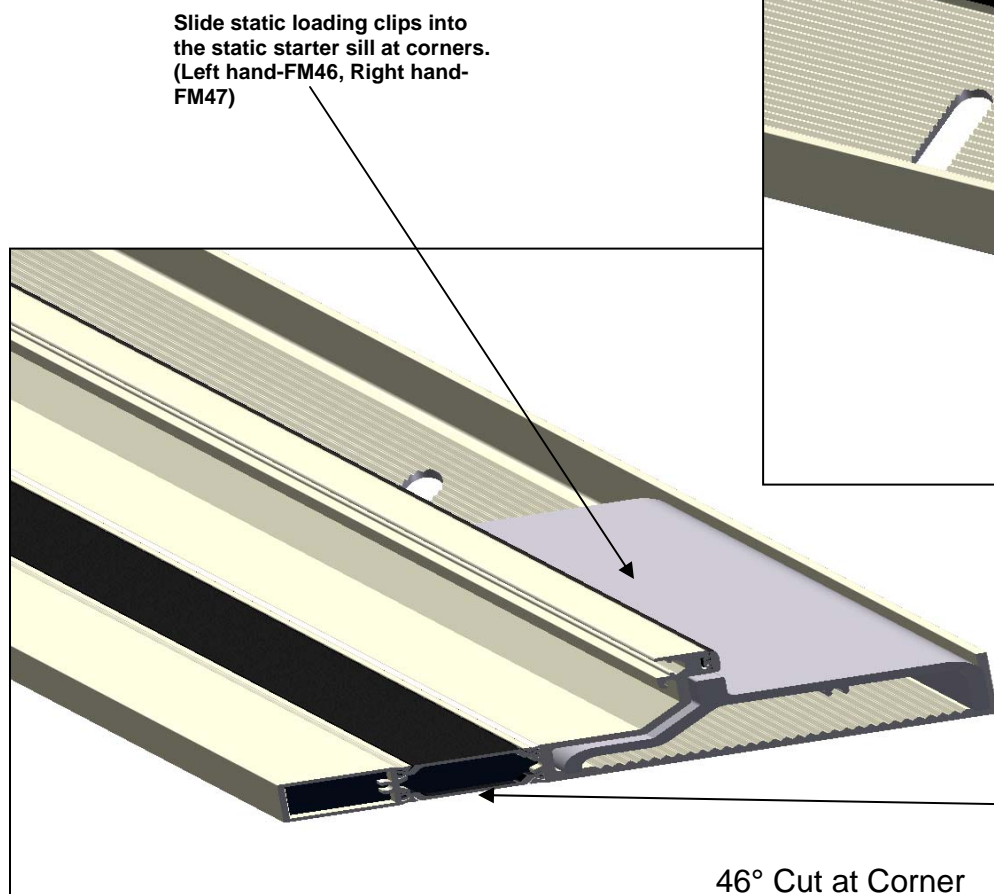
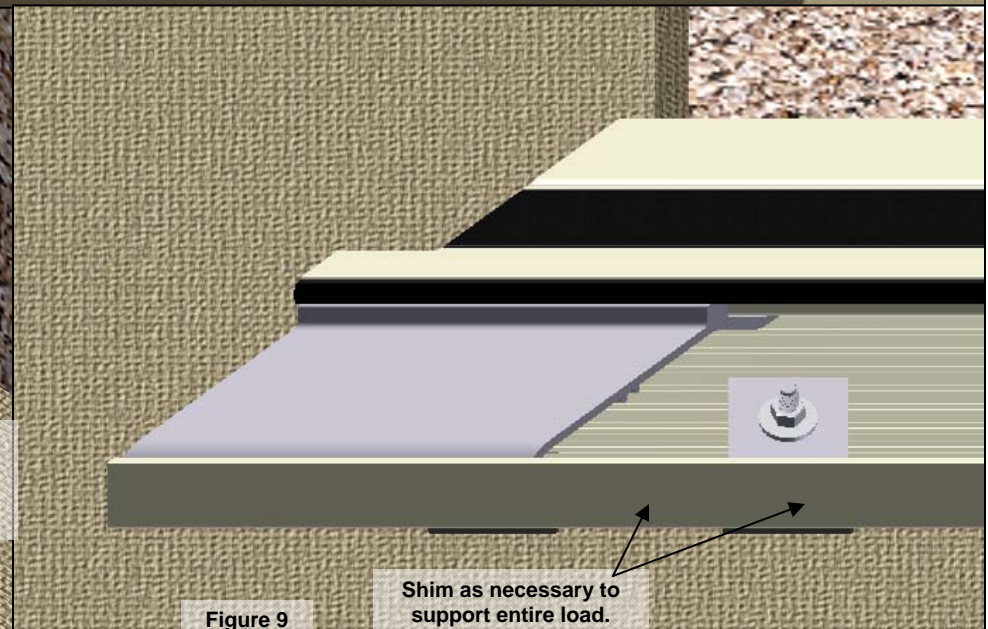
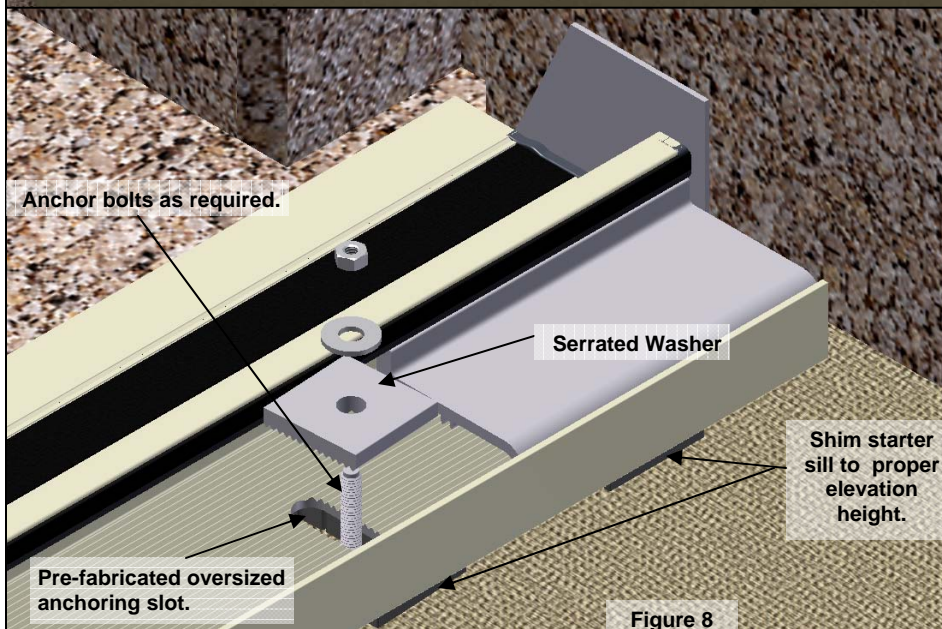
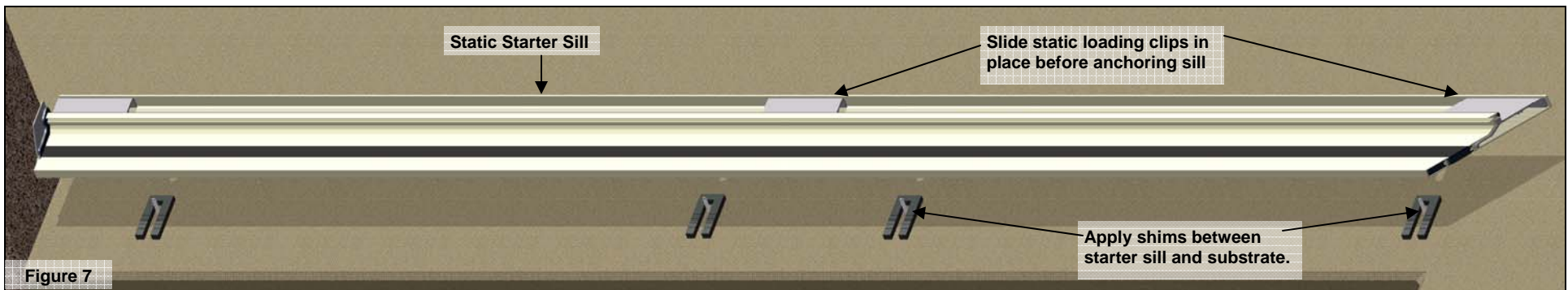


Figure 6

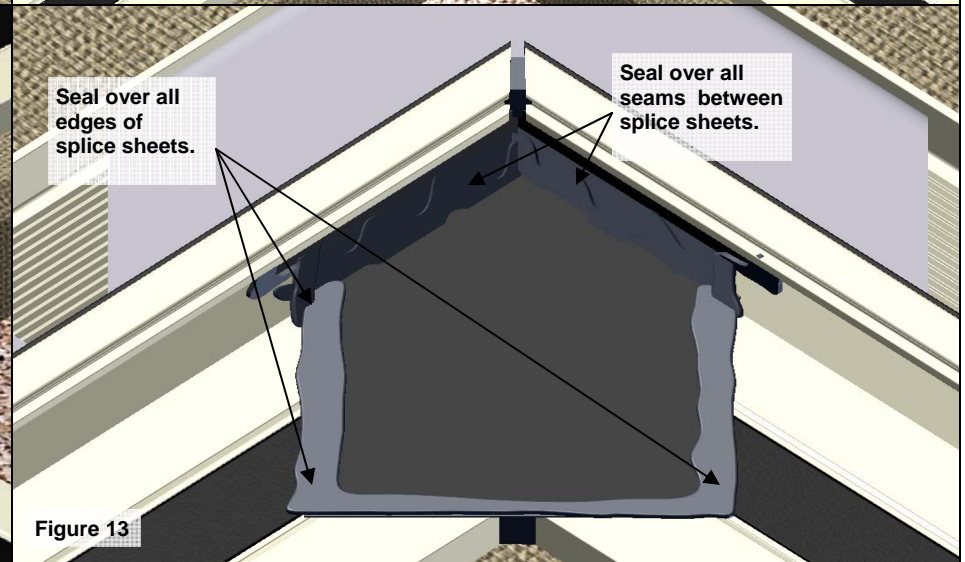
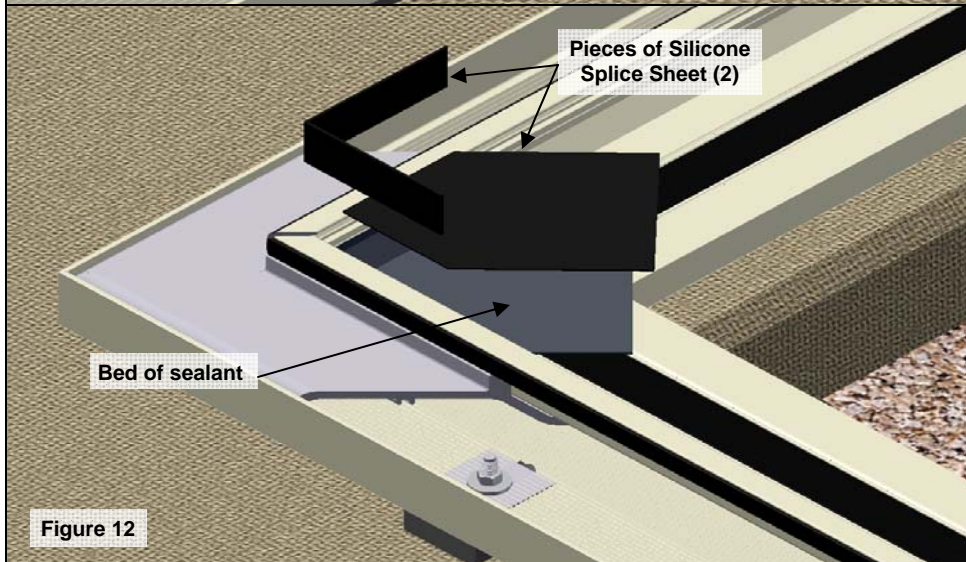
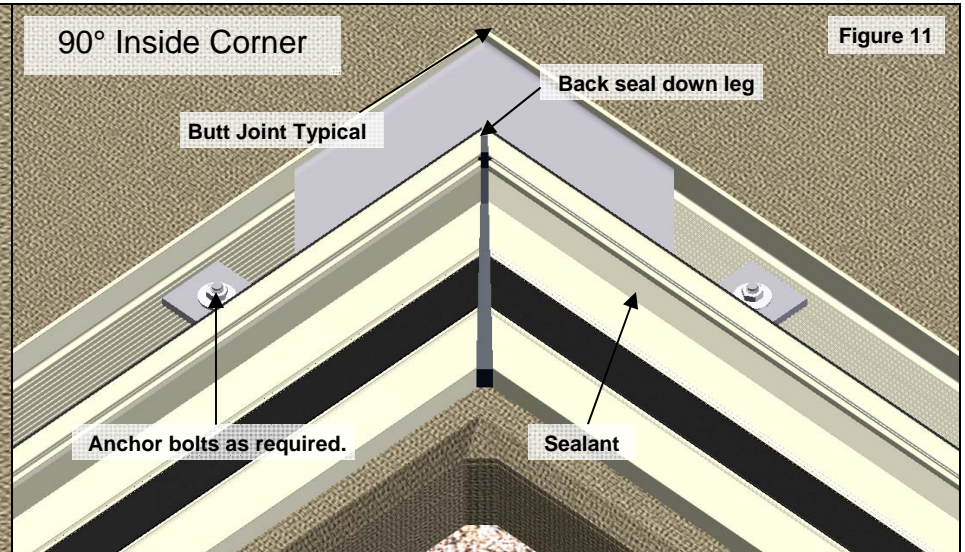
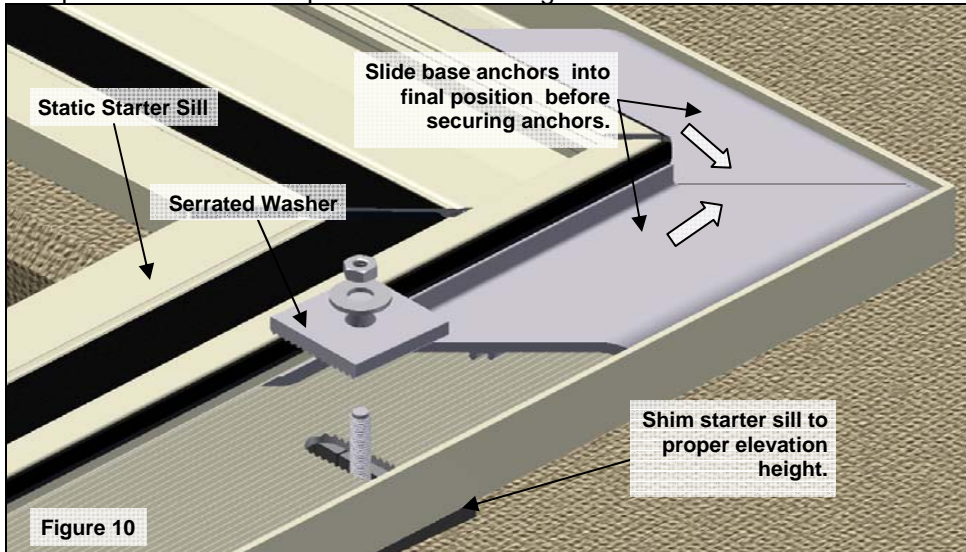
Section 3 - Static Starter Sill Preparation and Installation

2. Verify that all job site conditions and accompanying substrates receiving the installation are in tolerance and are in accordance with the contract documents.
3. Pre-cleaning the substrates where the caulk joints will be applied later may be advisable prior to setting the starter sill. Final cleaning and sealant primer application where required should be performed only immediately before caulk joint sealant application.
4. Use established bench marks to ensure the accuracy of the starter sill location. Precise measurements and coordination with regard to established bench marks are critical to ensure that the starter sills are installed in the correct location. Improperly installed, or miss-located starter sills will cause significant problems for the remainder of the erection process. Align with slab anchors on all floors above before unit installation starts. **See page 24** and shop drawings.
5. Refer to the approved shop drawings for type, size, and specific anchor details. Shim the starter sill to the proper elevation height making sure the starter sill is level. The shims used must be full bearing shims. The shims must fully support the entire load bearing surface of the starter sill at each anchor location. Refer to the project structural calculation package and final approved shop drawings for detailed information.
6. EFCO recommends minimum of a 1/2" caulk joint between the starter sill and the substrate.
7. When applying anchor bolts to the starter sill, pre-fabricated serrated washers (FM59 or FM60) must be used. The serrated washers will lock the starter sill into position when the anchor bolt is tightened. See Figures 7 thru 9. After verifying the final position of the starter sill, secure the anchor bolts as required.



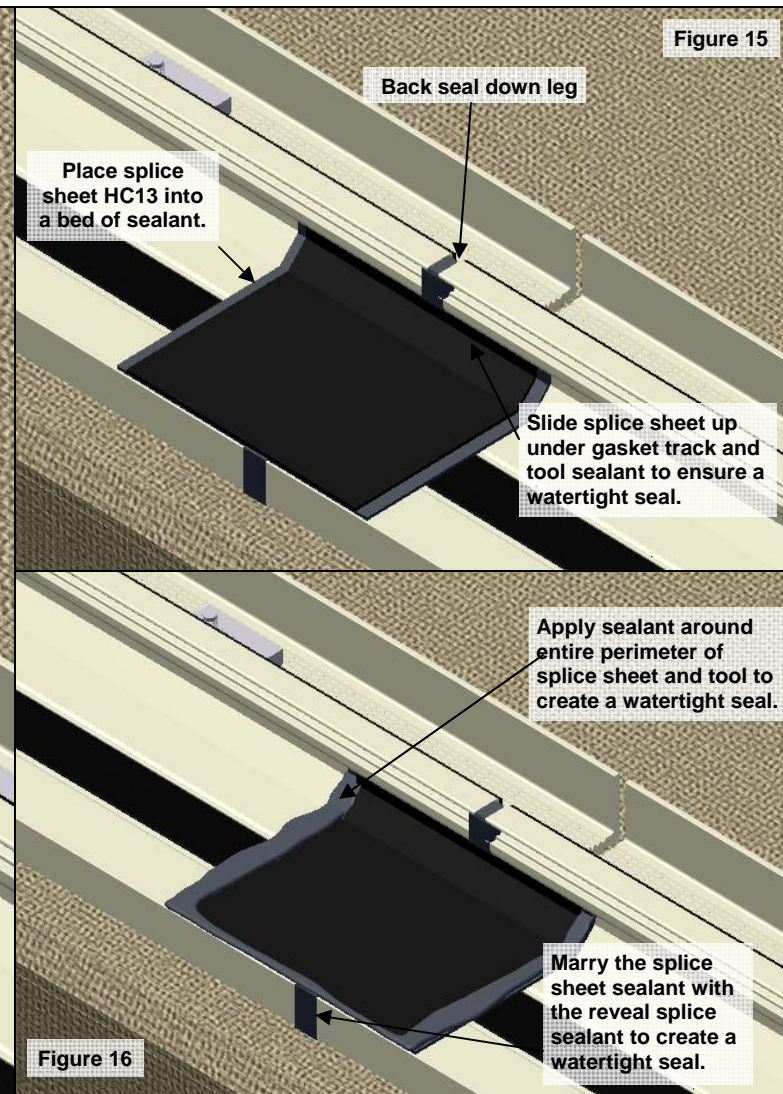
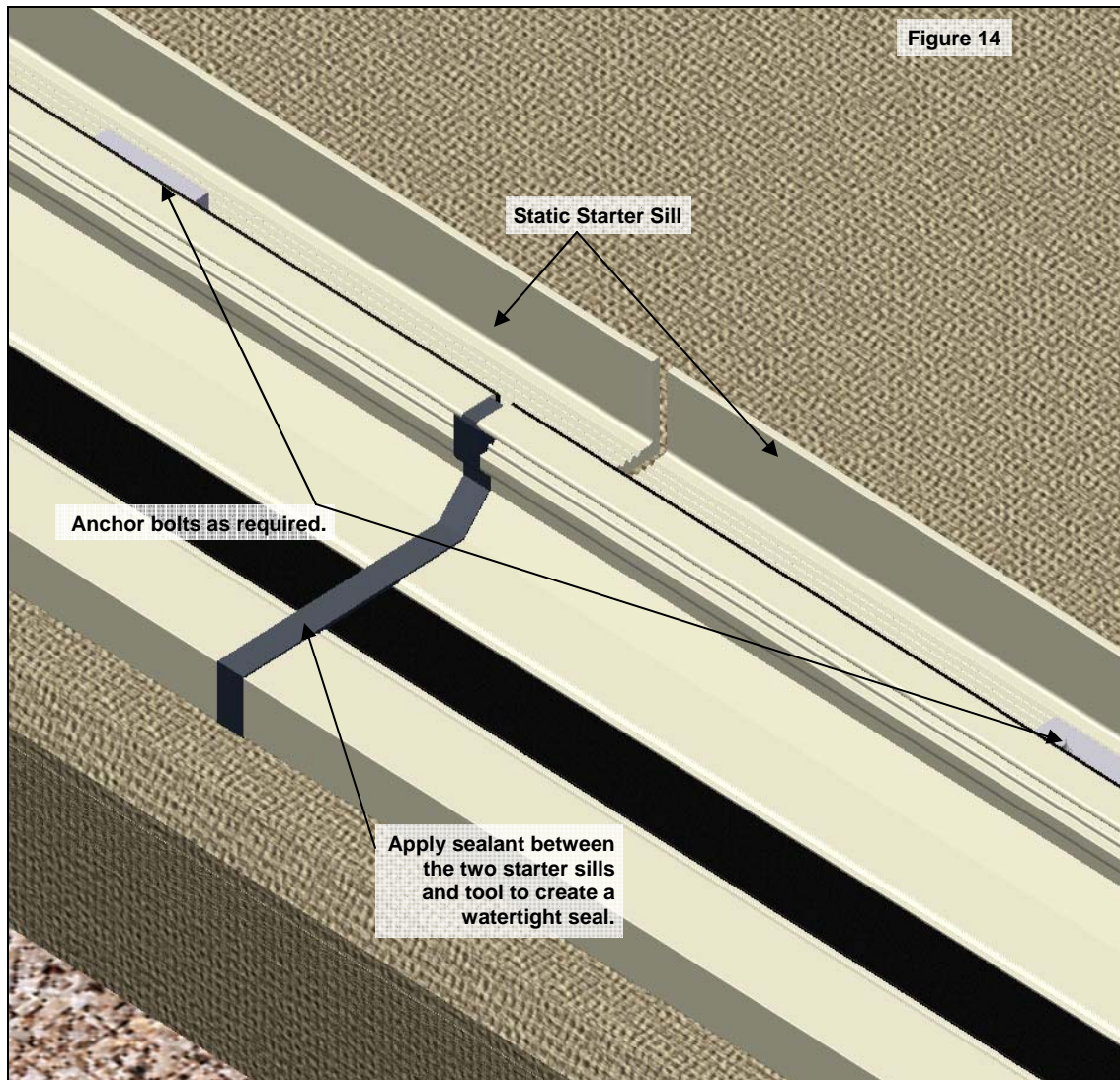
Section 3 - Static Starter Sill Preparation and Installation (90° Inside Corner)

8. *Using an approved solvent or cleaner, clean the sealant contact surfaces of the corner splice joint of all oils and other contaminants.*
9. The starter sill will be spliced at corner conditions. Refer to the approved shop drawings for project specific joint size.
10. Anchor the new starter sill section ensuring the starter sill is level and while maintaining the appropriate joint size at the splice joint.
11. Slide the base anchors into the corner, butting them together.
12. Apply sealant into the joint between the sections of starter sill and tool smooth to create a water tight seal. Use backer rods in the joint where appropriate. The splice joint width will vary per project requirements. See Figure 11.
13. Apply a bed of sealant over joint then and use pieces cut from HC13 silicone splice sheet to cover joint. Apply sealant around the edges and seams of the pieces cut from the splices sheet. See Figures 12 and 13.



Section 3 - Static Starter Sill Preparation and Installation (Splices)

14. **Using an approved solvent or cleaner, clean the sealant contact surfaces shown below of all oils and other contaminants.**
15. The starter sill should be spliced per the shop drawings. Refer to the approved shop drawings for specific locations and conditions.
16. Anchor the starter sill sections ensuring they are level and while maintaining the appropriate joint size and splice joint.
17. Apply sealant into the joint between the sections of starter sill and tool to create a water tight seal. The splice joint width will vary per project requirements. See Figure 14.
18. Set HC13 or HC14 silicone splice sheet in a bed of sealant centered on the starter sill splice joint as shown in Figures 15 and 16. Force the splice down onto the gutter, forcing out all air bubbles.
19. Apply sealant around the edges of the splice an tool smooth and water tight. See Figure 16.



Section 3 - Static Starter Sill Preparation and Installation (90° Outside Corner)

20. Using an approved solvent or cleaner, clean the sealant contact surfaces of the corner splice joint of all oils and other contaminants.

21. The starter sill will be spliced at corner conditions. Refer to the approved shop drawings for project specific joint size.

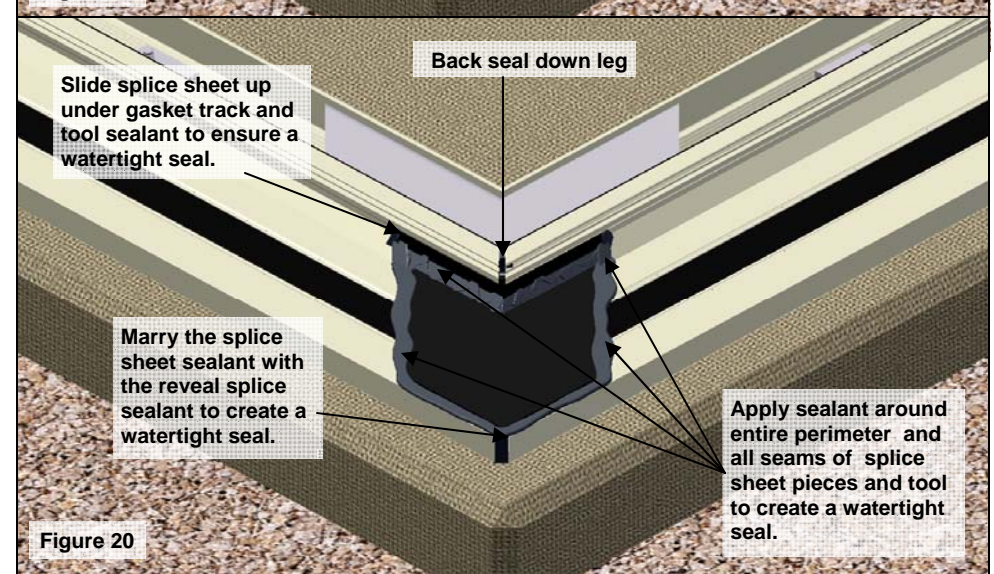
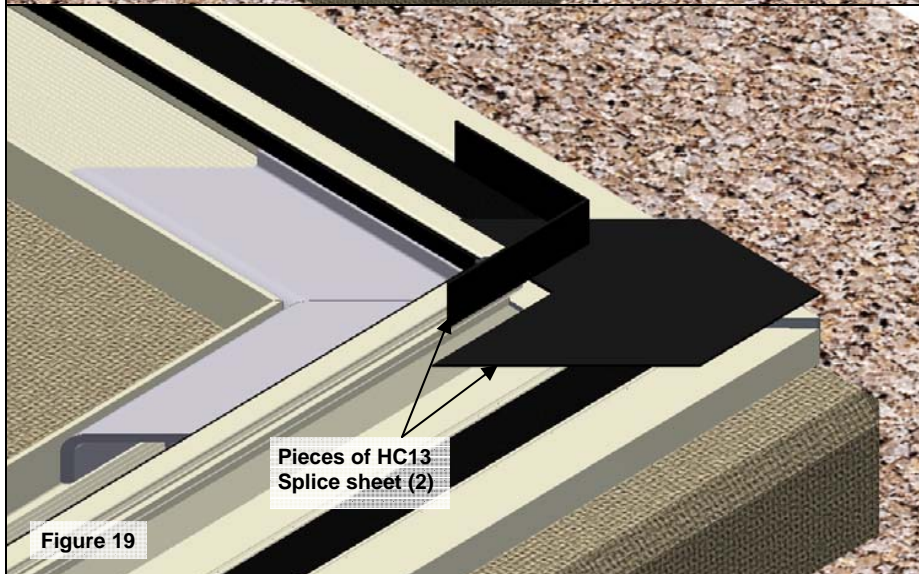
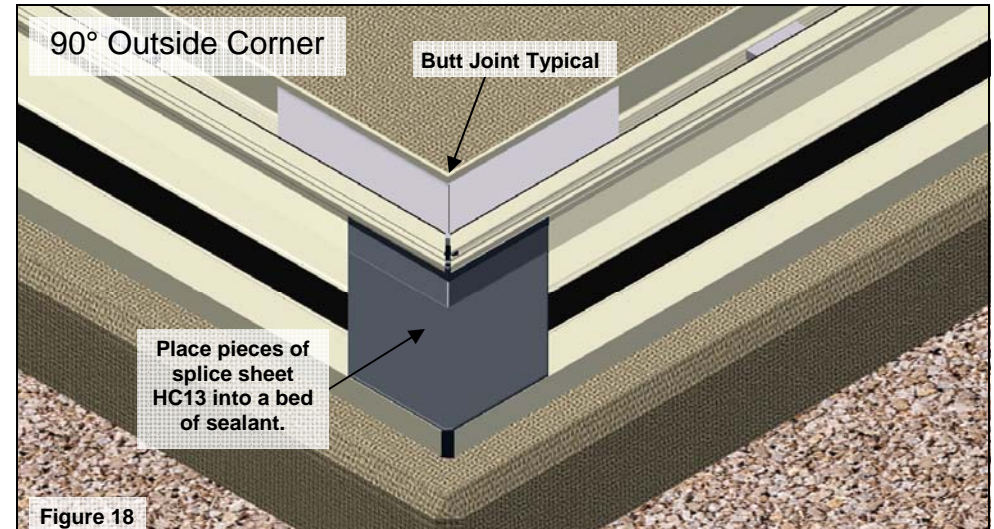
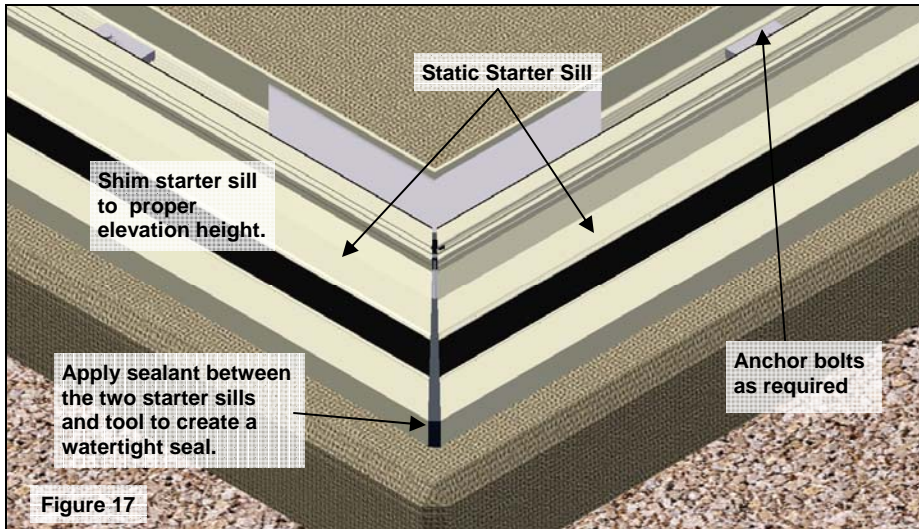
22. Anchor the new starter sill section ensuring the starter sill is level and while maintaining the appropriate joint size at the splice joint.

23. Slide the static loading clips into the corner, butting them together.

24. Apply sealant into the joint between the sections of starter sill and tool smooth to create a water tight seal. Use backer rods in the joint where appropriate.

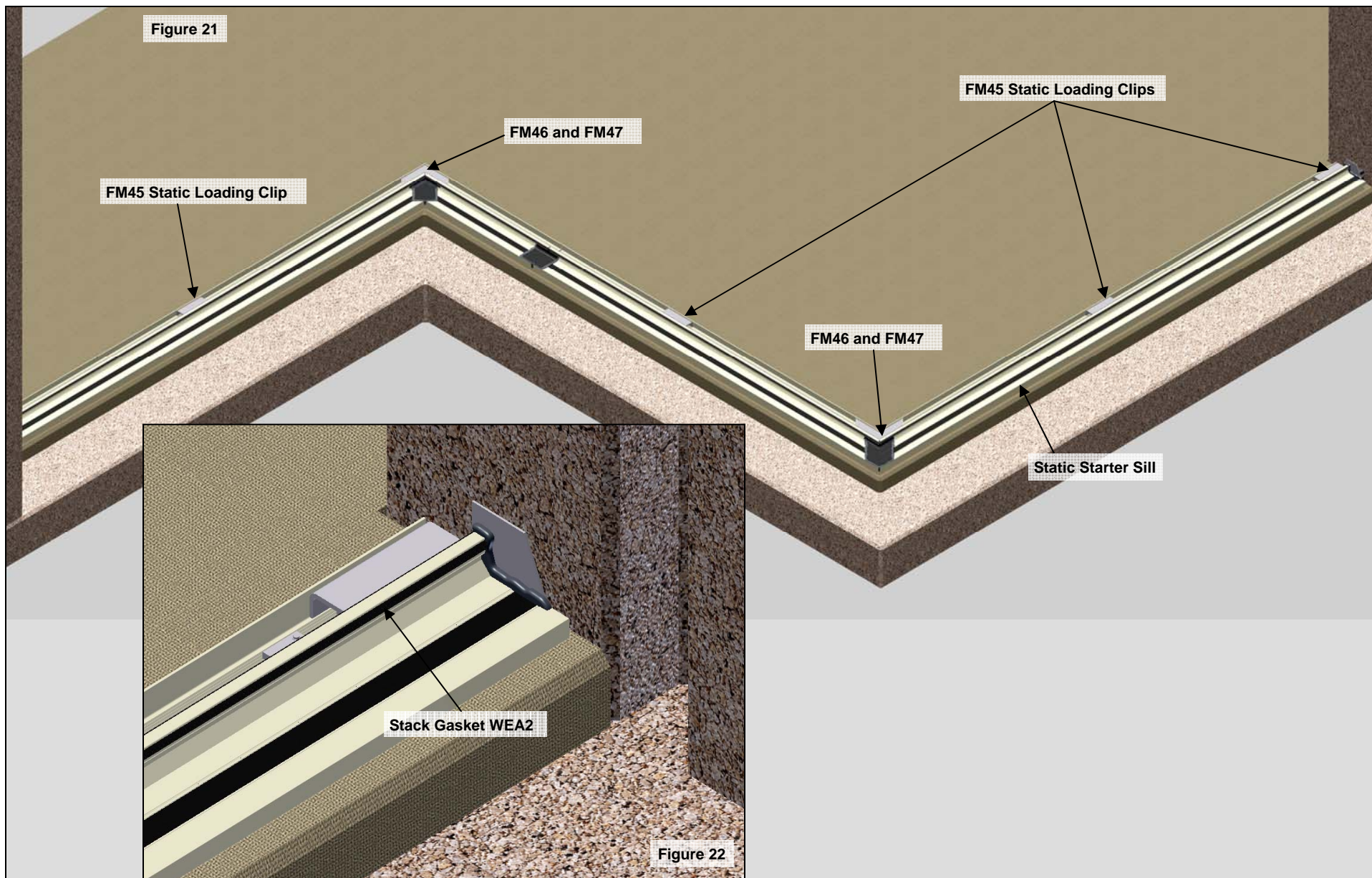
The splice joint width may vary per project requirements. See Figure 17.

25. Apply a bed of sealant over joint and use pieces cut from HC13 silicone splice sheet cover joint. Apply sealant around the edges and seams of the pieces cut from the splices sheet. See Figures 18, 19 and 20.



Section 3 - Static Starter Sill Preparation and Installation

26. Finish installing starter sill sections as previously described until the installation is completed.
27. Push Stack Gasket WEA2 into gasket reglet beginning at one jamb condition and continuing to next jamb condition. Gasket should run continuously through all corners and splices. Ensure that the gasket is not stretched while performing this task. See Figures 21 and 22.
28. Installation of the Static Starter Sill is now complete.

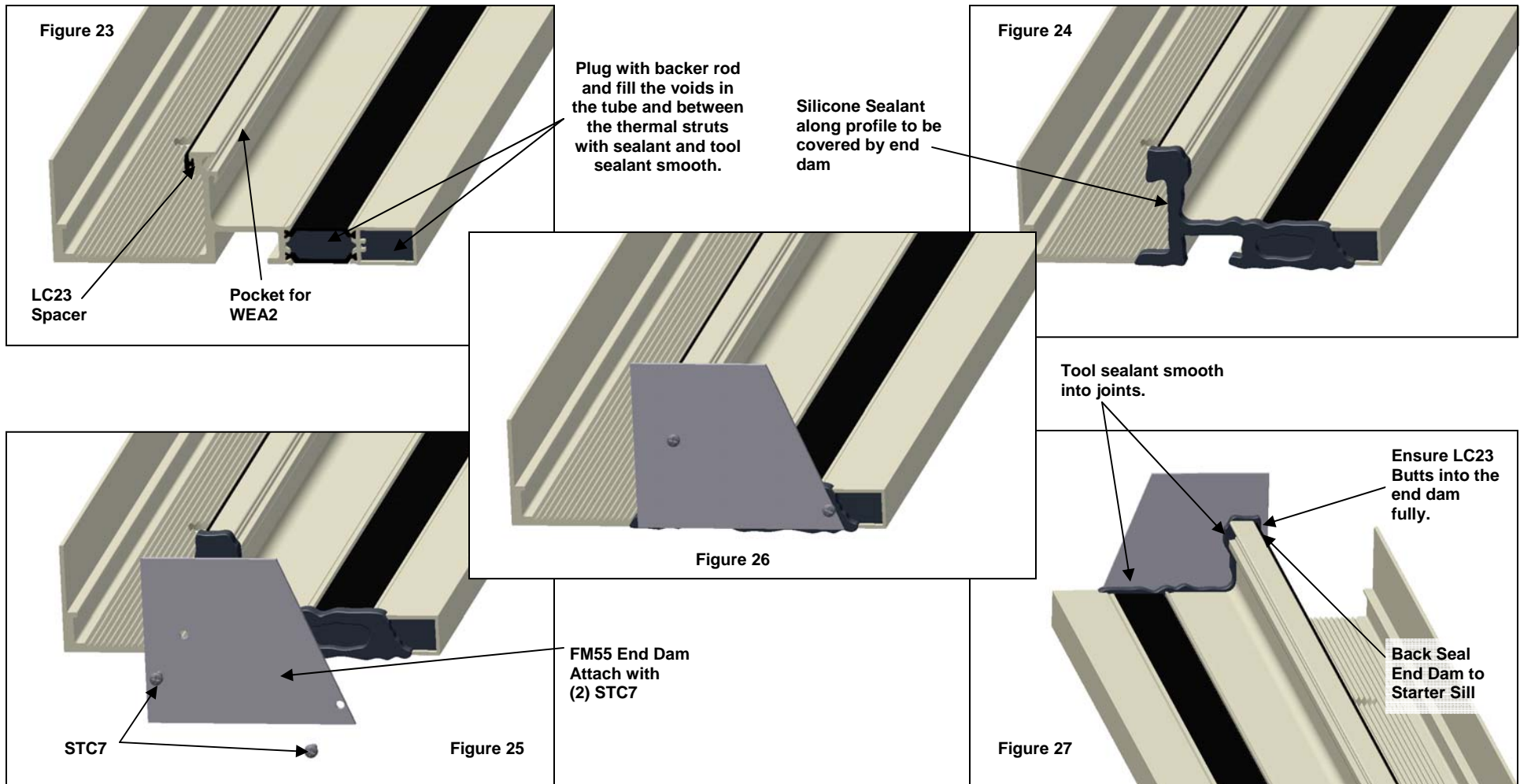


Section 4 - Dynamic Starter Sill Preparation and Installation

1. Preparation of the Dynamic Starter Sill:

- The dynamic starter sill may have an end dam pre-attached and sealed at the jamb condition. Ensure that the end dam is properly applied and sealed to the starter sill as described below. This is a critical seal and the joint must be carefully tooled to create a watertight seal. See Figures 23 thru 27.
- The starter sill may have LC23 spacer pre-applied. The LC23 is cut to the length of the starter sill. The WEA2 gasket will not be applied at this point it will be applied once all sections of the sill are set to avoid having unnecessary seams or splices. This will be covered later in these instructions.
- Plug the both ends of the tubular sections of the starter sill by recessing backer rod at least 1/4" into the end of the tube. Fill the voids in the tube and between the thermal struts with sealant and tool smooth.

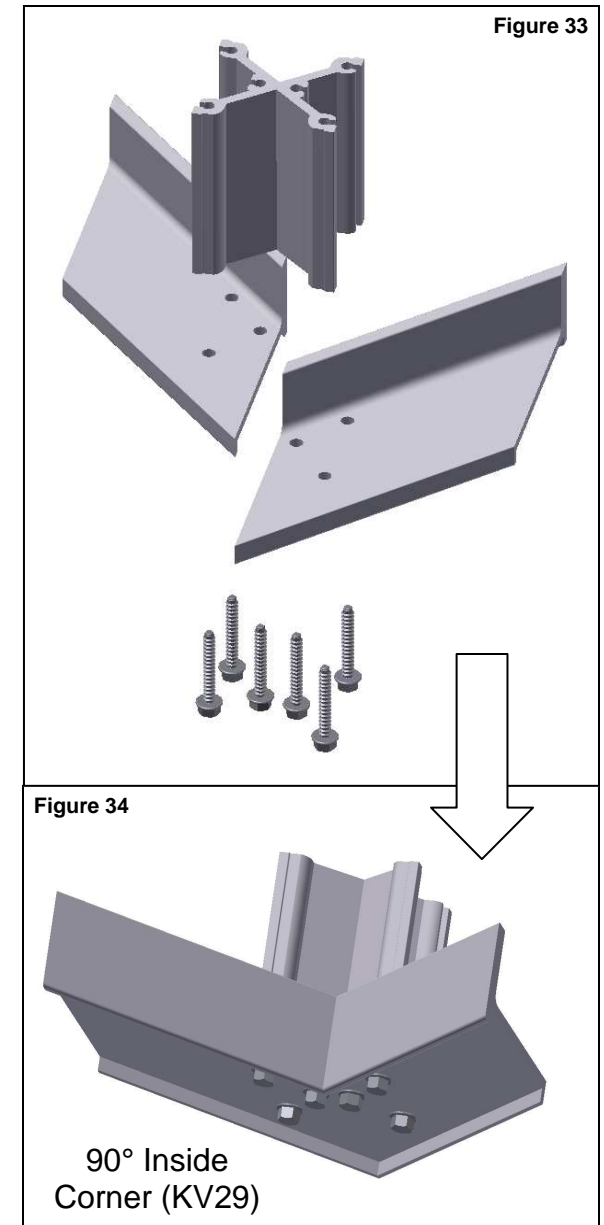
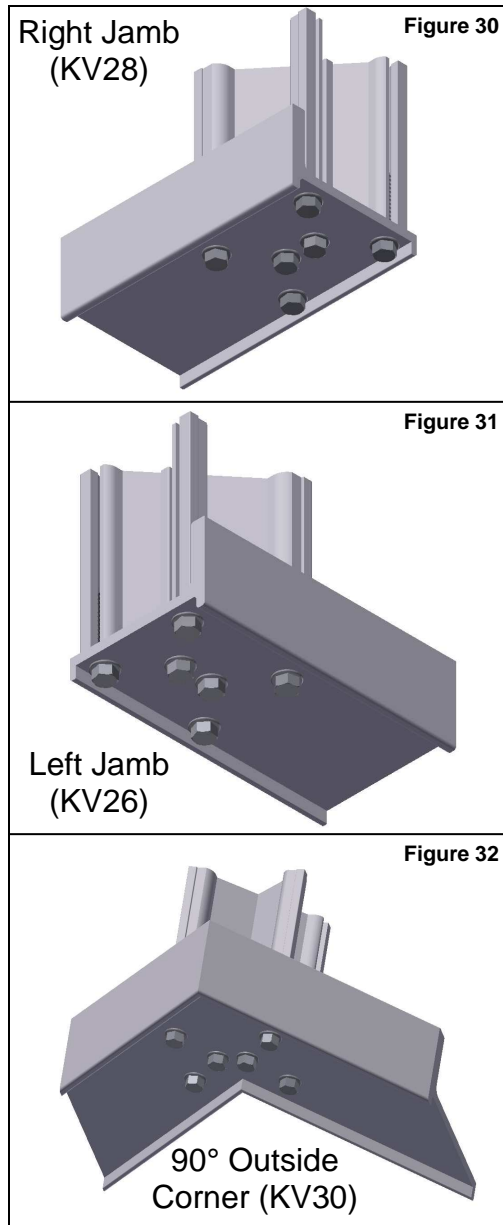
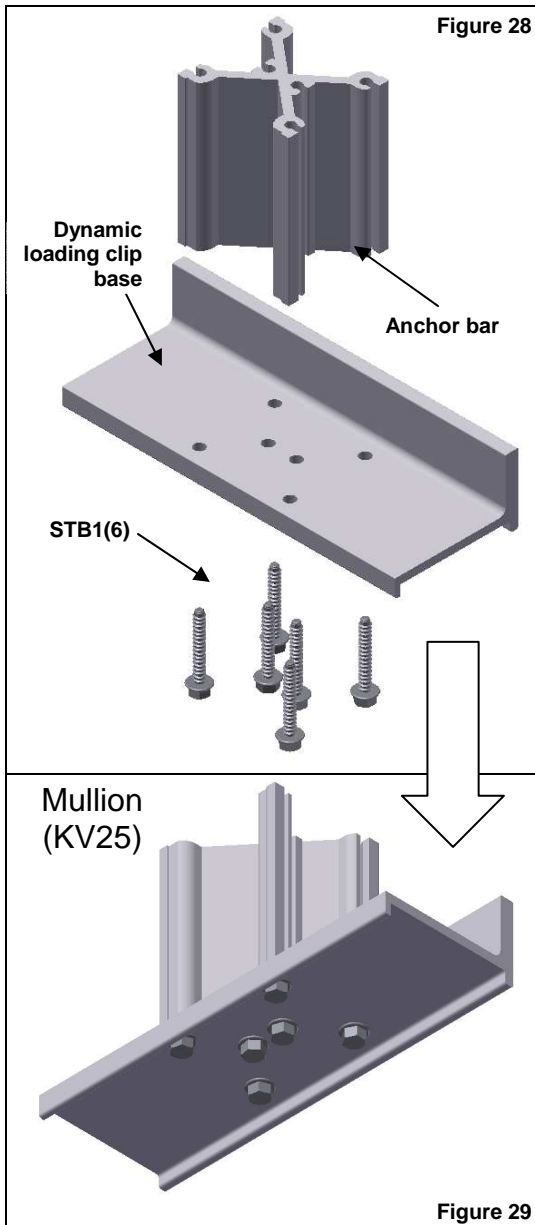
Clean all sealant contact surfaces using an approved solvent or cleaner of all oils and other contaminants. The sealant manufacturer's preparation and application instructions should be followed exactly. If sealant primer is required, apply it per the primer/sealant manufacturer's instructions.



Section 4 - Dynamic Starter Sill Preparation and Installation

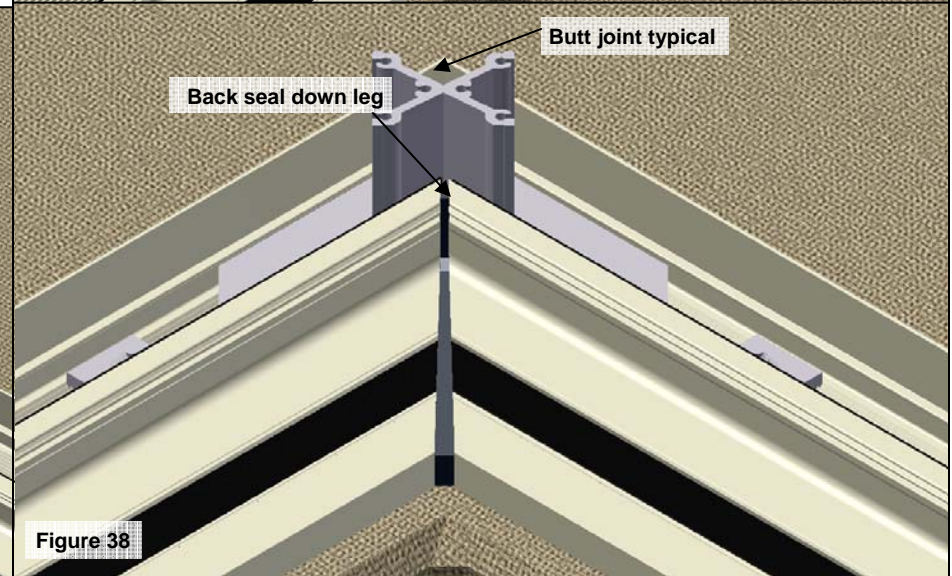
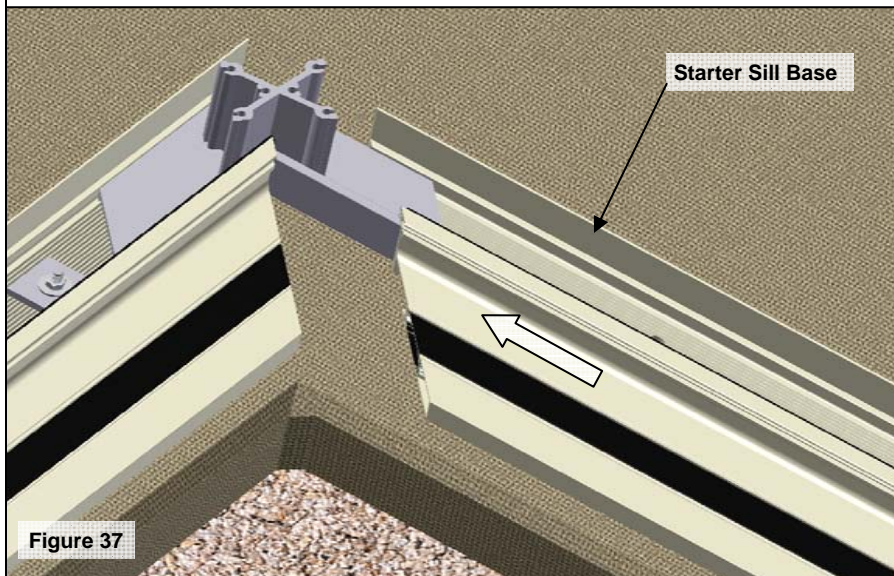
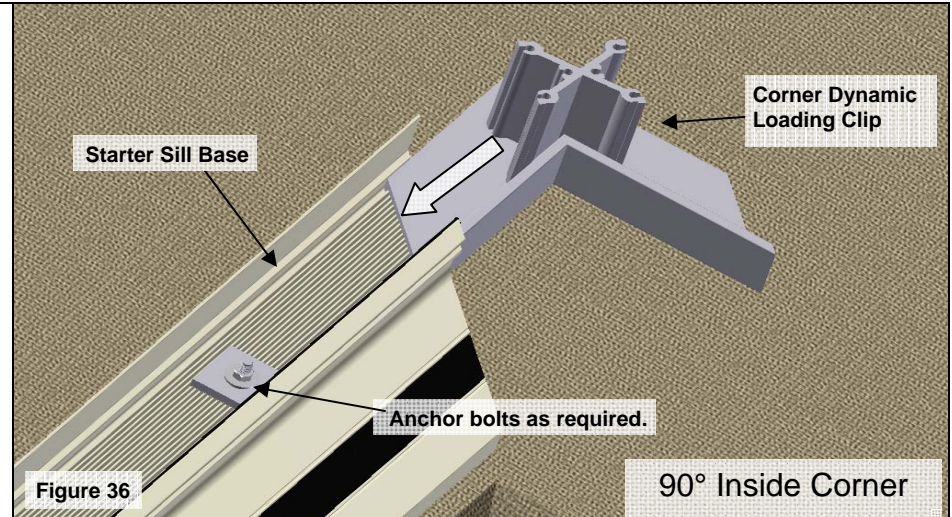
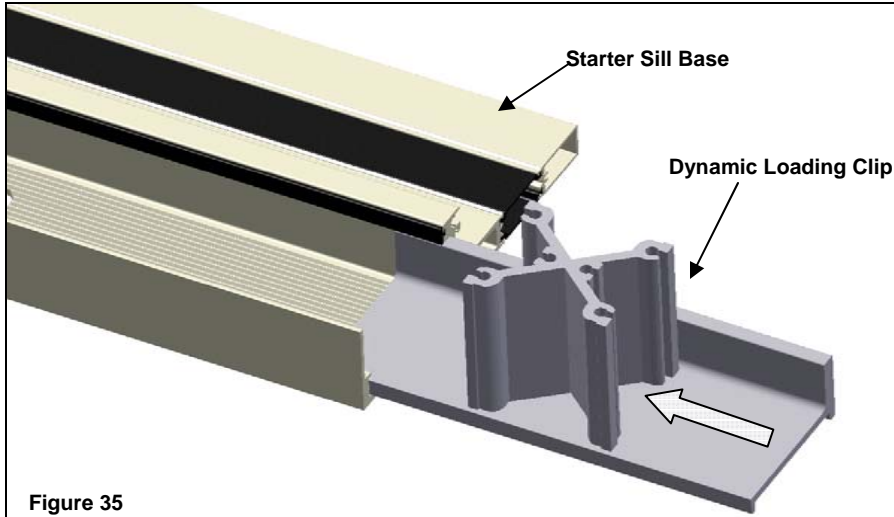
2. Dynamic loading Clip Assembly:

- Assemble the dynamic loading clips by attaching the anchor bar to the loading clip base with (6) STB1 fasteners. Anchors may come to the field preassembled, depending on project requirements. Refer to the final shop drawings for project specific information.
- Offset dynamic loading clips are required at the jamb conditions. Outside and inside corner conditions will require different dynamic loading clips.



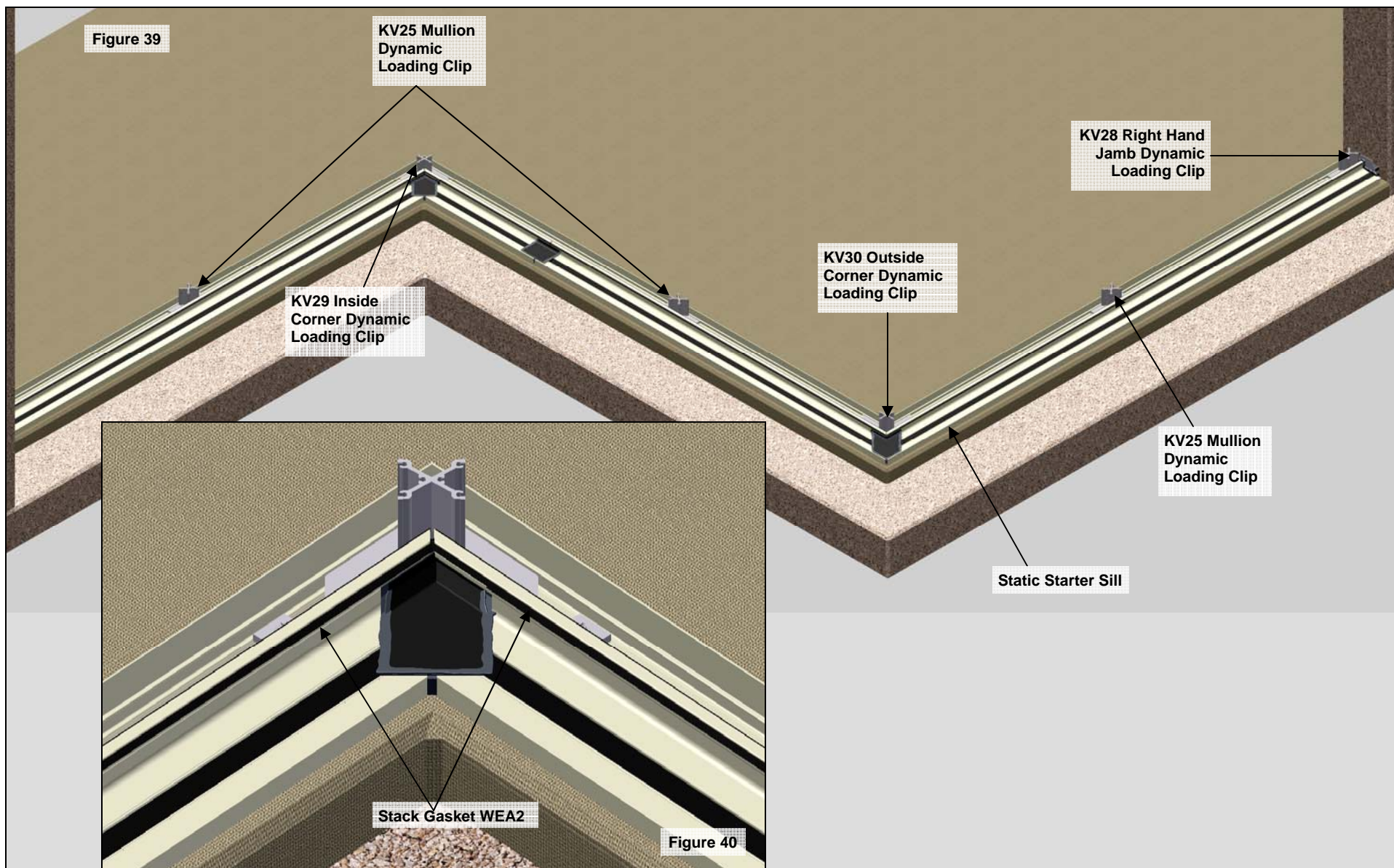
Section 4 - Dynamic Starter Sill Preparation and Installation

3. Slide in dynamic loading clips. The dynamic loading clips with the exception of the corners must be installed before the dynamic starter sill sections are set and anchored. See Figure 35.
4. Reference pages 14 –18 “Static Starter Sill Installation” for Setting, shimming and anchoring the dynamic starter sill sections. The only difference will be at the corner conditions as a result of the dynamic loading clips (see step 5).
5. At corner conditions slide corner dynamic loading clip into starter sill section that is already anchored then slide the second starter sill section to it. See figures 36 and 37.
6. Anchor the second starter sill section ensuring the starter sill is level and while maintaining the appropriate joint size at the splice joint.
7. Reference pages 15 –17 for sealing corners joints and splice joints.



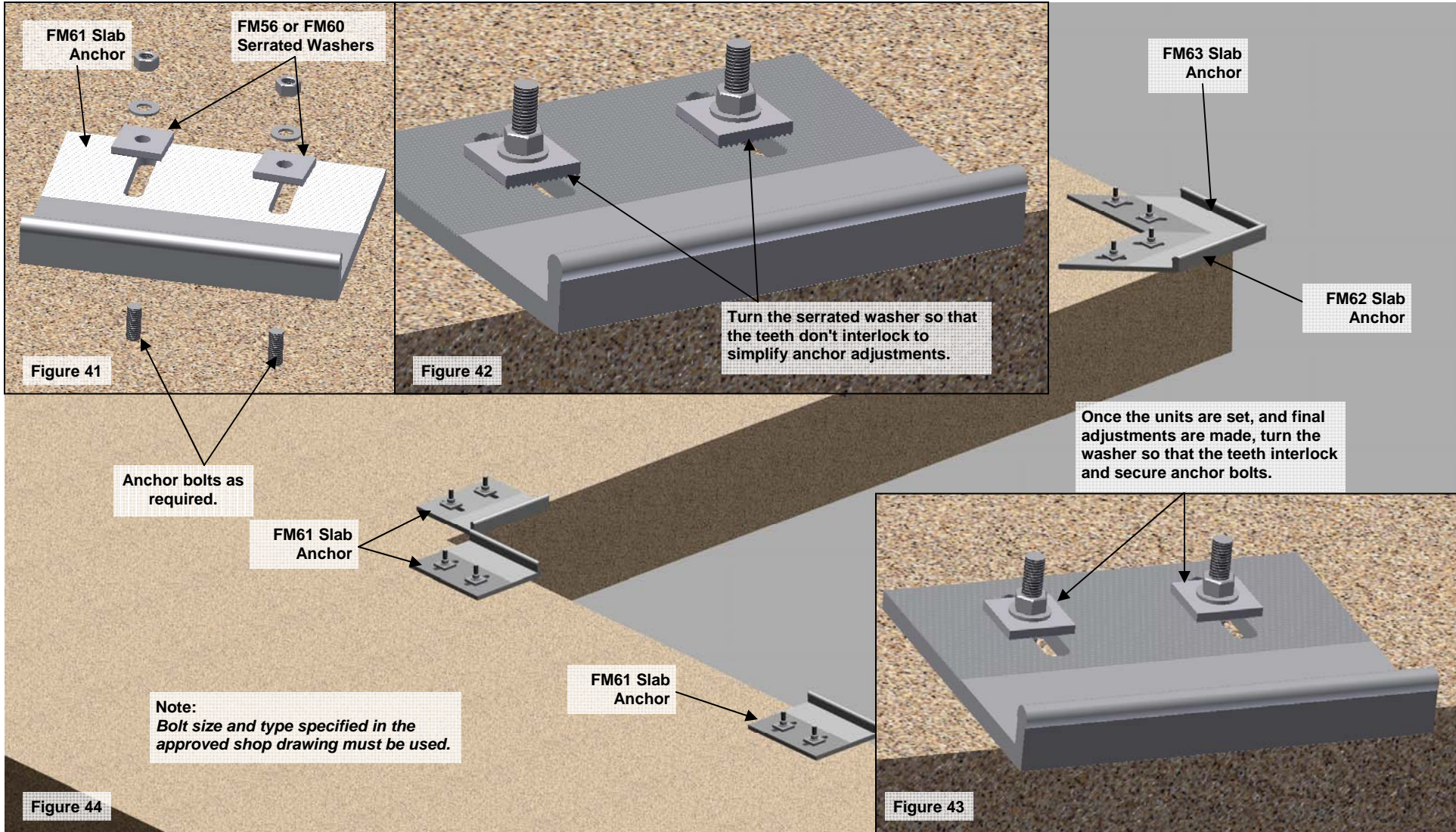
Section 4 - Dynamic Starter Sill Preparation and Installation

8. Finish installing starter sill sections as previously described until the installation is completed.
9. Push Stack Gasket WEA2 into gasket reglet beginning at one jamb condition and continuing to next jamb condition. Gasket should run continuously through all corners and splices. Ensure that the gasket is not stretched while performing this task. See Figures 39 and 40.
10. Installation of the Dynamic Starter Sill is now complete.



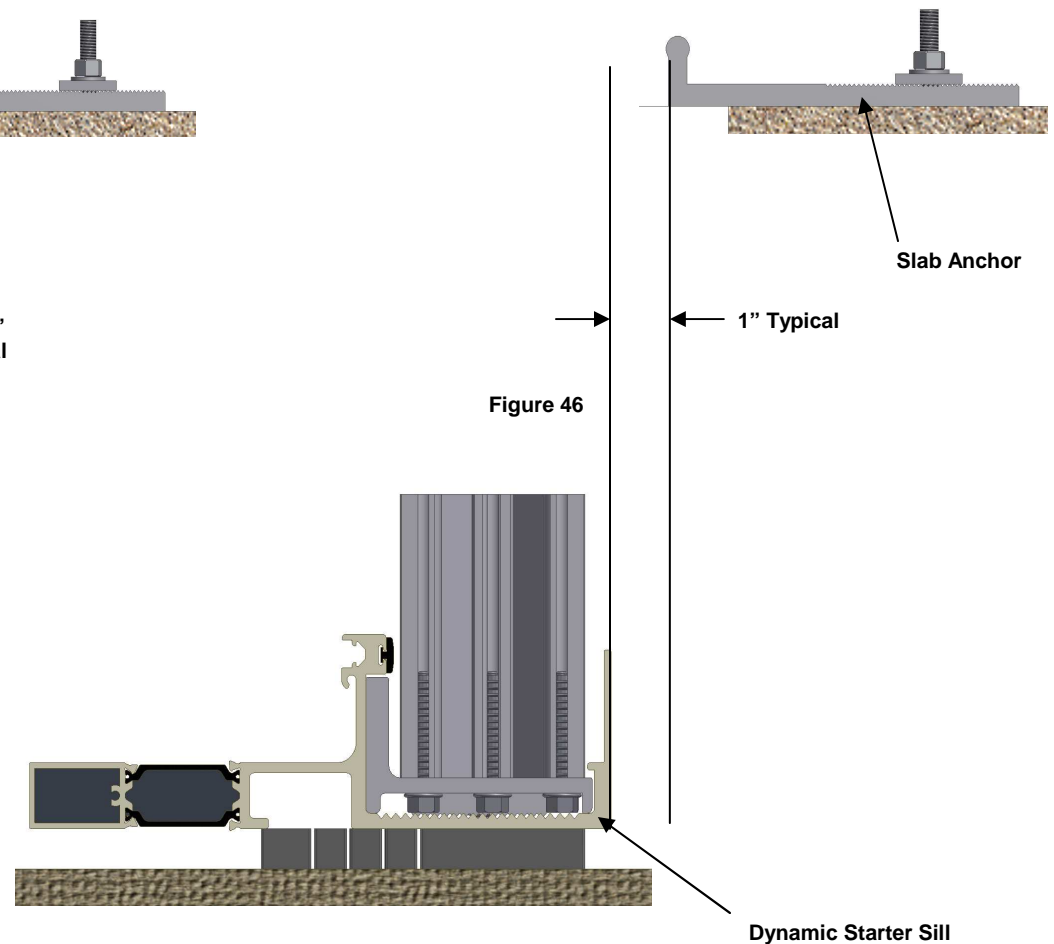
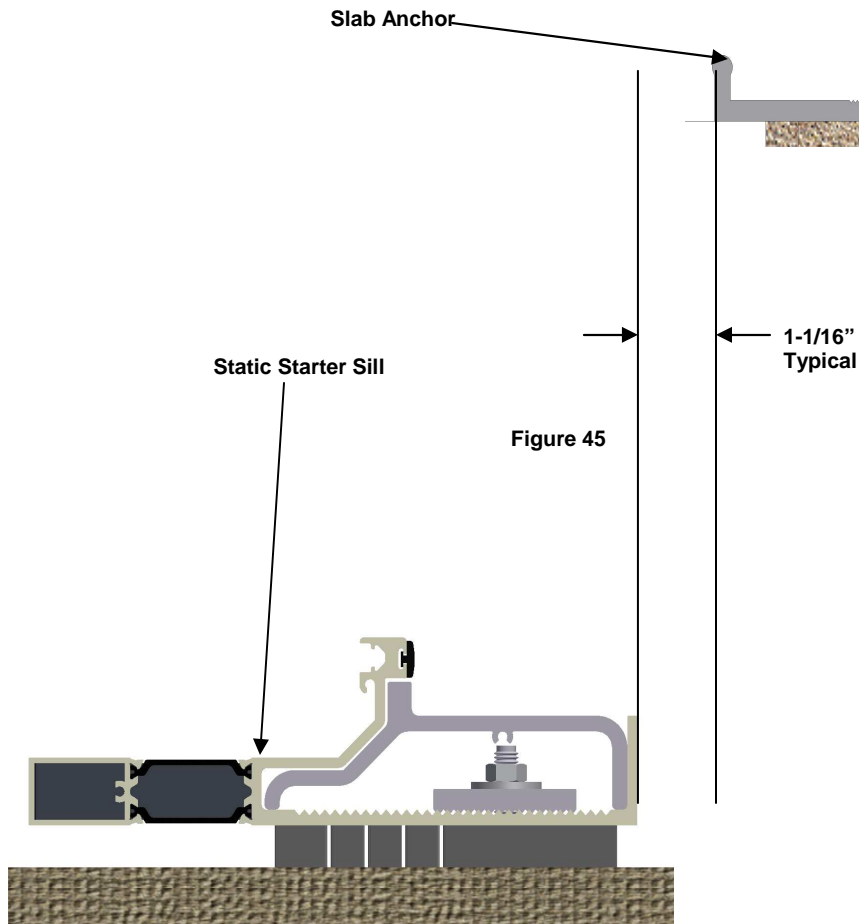
Section 5 - Intermediate Floor Slab Anchor Installation

1. Set the slab anchors into the opening inserting anchor bolts into the slots in the approximate locations required. Do not use shims between the slab anchor and the slab. Use bituminous coating or other appropriate primer to separate slab anchor from substrate. Anchors are typically located at the mullion center line at intermediate locations. Jamb anchor locations vary. Refer to the approved final shop drawings for location.
2. Apply flat and lock washers and the serrated washers onto the anchor bolts. Turn the serrated washer so that the teeth don't interlock to simplify anchor adjustments. Leave the nuts loose enough to allow free movement of the anchor assembly. Once the units are set, and final adjustments are made, turn the serrated washers so that the teeth interlock and secure the anchor assembly.
3. Refer to the final approved shop drawings or supplemental installation instructions for more information.



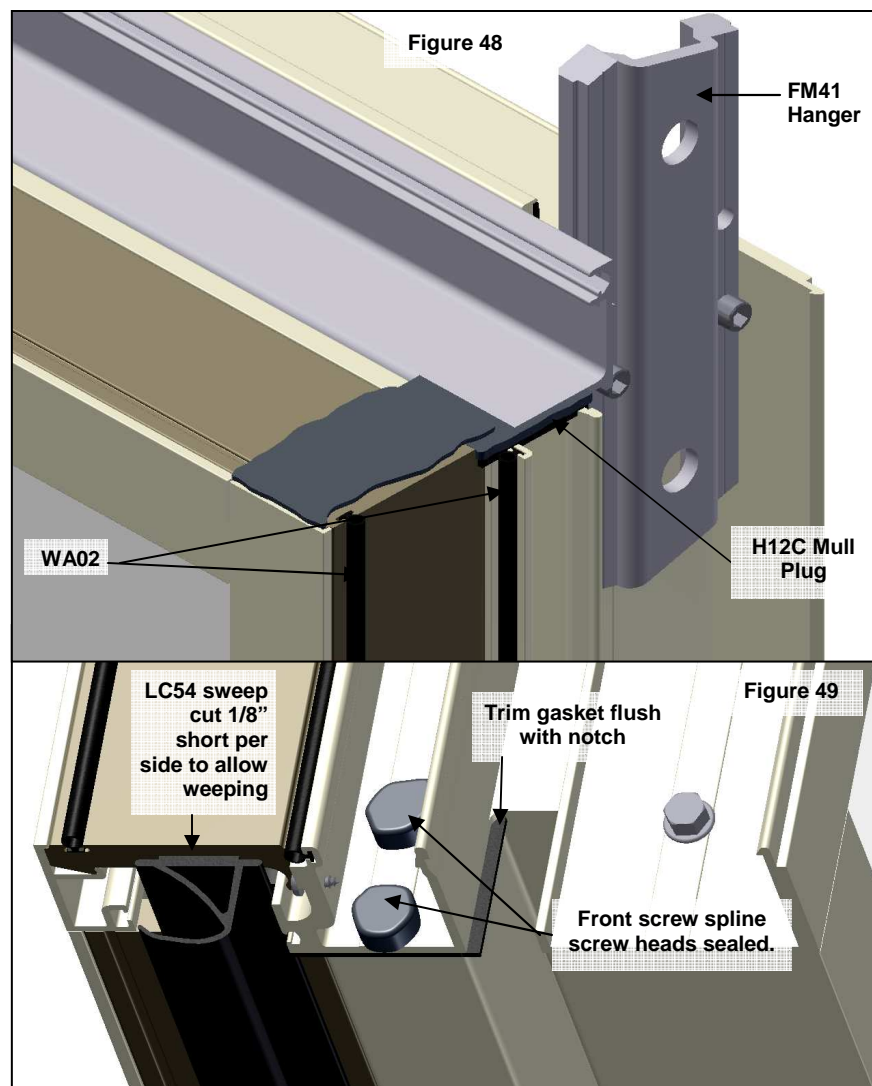
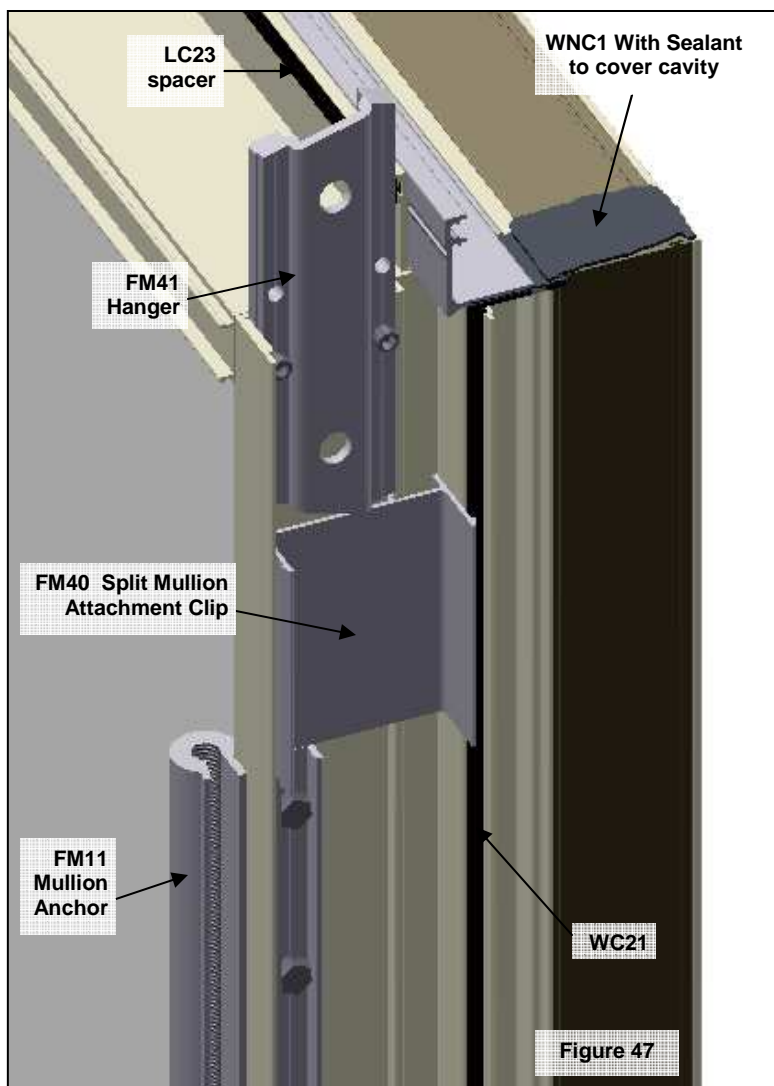
Section 5 - Intermediate Floor Slab Anchor Installation

4. Slab anchors on all floors must be aligned with each other and with the starter sill.
 - a. Use established bench marks to ensure the accuracy of the starter sill location and the alignment of the slab anchors. Precise measurement and coordination with regard to established bench marks are critical to ensure that both the starter sills and slab anchors are installed in the correct location. Improperly installed or mis-located starter sills or slab anchors will cause significant problems for the remainder of the install.
 - b. In order to accommodate variation in slab size and location. It is important to place and align all slab anchors before final anchorage of the starter sill.
 - c. The typical spacing between the front face of the slab anchors and the interior face of the static sill is 1-1/16". See figure 45 below.
 - d. The typical spacing between the front face of the slab anchors and the interior face of the dynamic sill is 1". See figure 46 below.
 - e. Refer to the final approved shop drawings or supplemental installation instructions for more information.



Section 6 - Unit Inspection and Preparation for Installation

1. Before installing the units, follow this checklist to ensure they are ready for installation:
 - a. **Inspect the units to ensure that each unit has all external gaskets and screws.** The WA02 and WC21 gaskets will be shop crimped in place. Verify these gaskets have been crimped securely to the frame. Always check for proper crimping and for missing gaskets.
 - b. **Using an approved solvent or cleaner, clean the vertical and horizontal stack gaskets of all oils and other contaminants (LC23, LC54, WC21 and WA02).**
 - c. Mullion plugs are required at the head. Also plugs are required at the head end of the captured system at the end of the Duracast verticals. The mullion plugs are shop applied and sealed in place. Check to ensure the mullion plugs have been properly applied.
 - d. All front screw spline screws head should be sealed. See figure 49.



Section 6 - Unit Inspection and Preparation for Installation

- e. **Using an approved solvent or cleaner, clean the sealant contact surfaces of the expansion cavity of the stack sill and jamb of all oils and other contaminants.** See Figure 50.
- f. Apply a generous amount of sealant in both ends of the stack cavity approximately 4" to 6" long. See Figure 50.
- g. Place the HC05 foam sealant backer into one end of the stack cavity with approximately 4" extending out of the cavity at split mullion and about 1/2" extending from the face at jamb. The HC05 foam sealant backer should be applied to the jamb or split mullion half where the backer will be exposed after the frame has been set. See Figure 50. The HC05 will be applied at both side of the jamb condition unit on each row. All sequential units will get sealant on both side but will only get one HC05. These units will get the HC05 in the side opposing the previous unit.
- h. Generously apply sealant to surface of the HC05 that will contact the stack leg of the sill or unit below. This should be done just before the unit is set.
- i. Apply a continuous bead of sealant up the entire split mullion along the WC21 gasket and the adjacent snap leg (top to bottom). See figure 51.

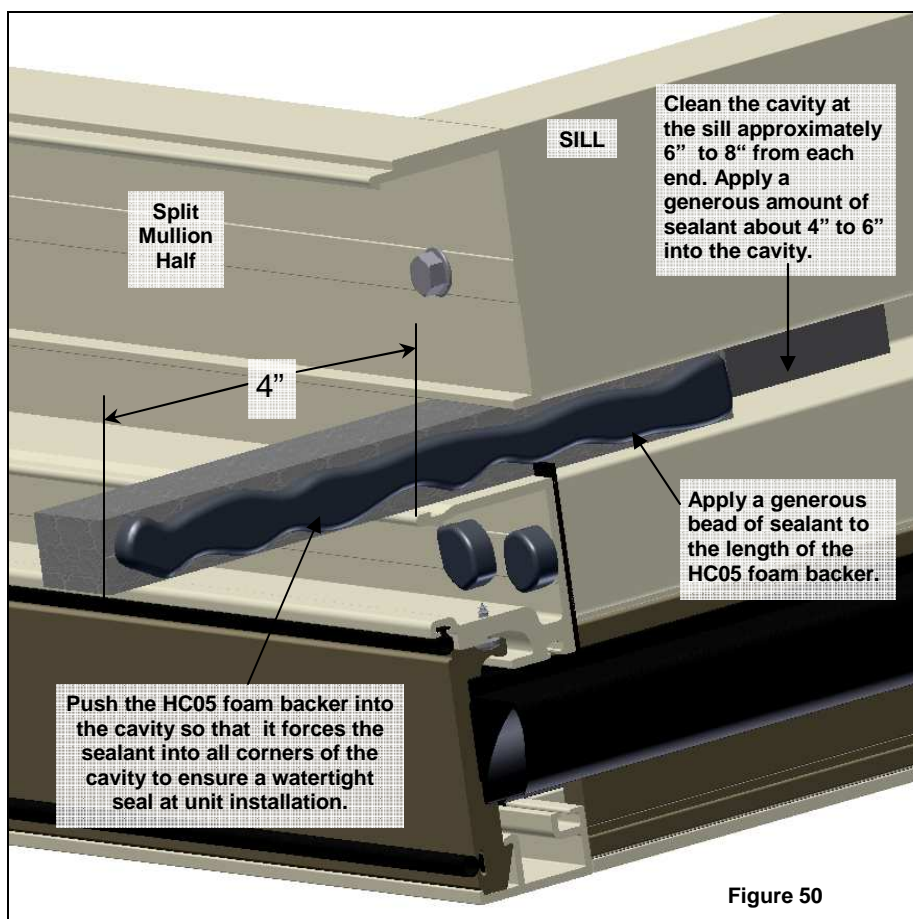


Figure 50

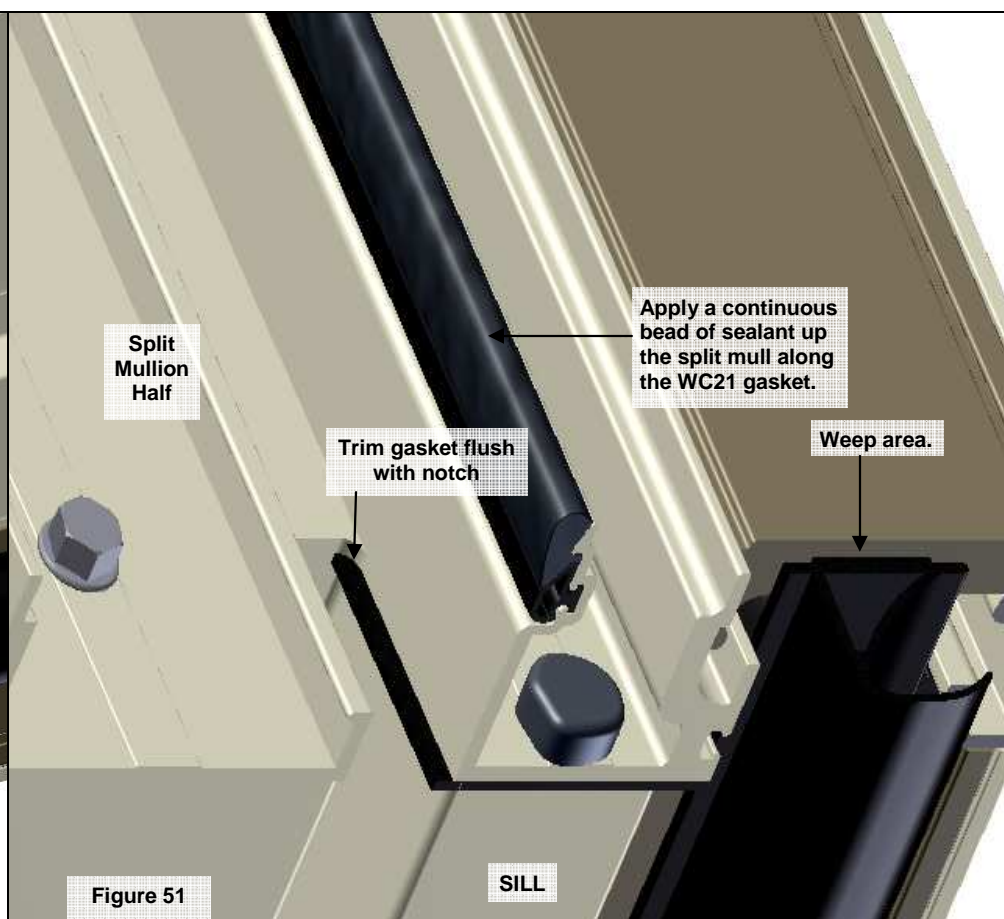
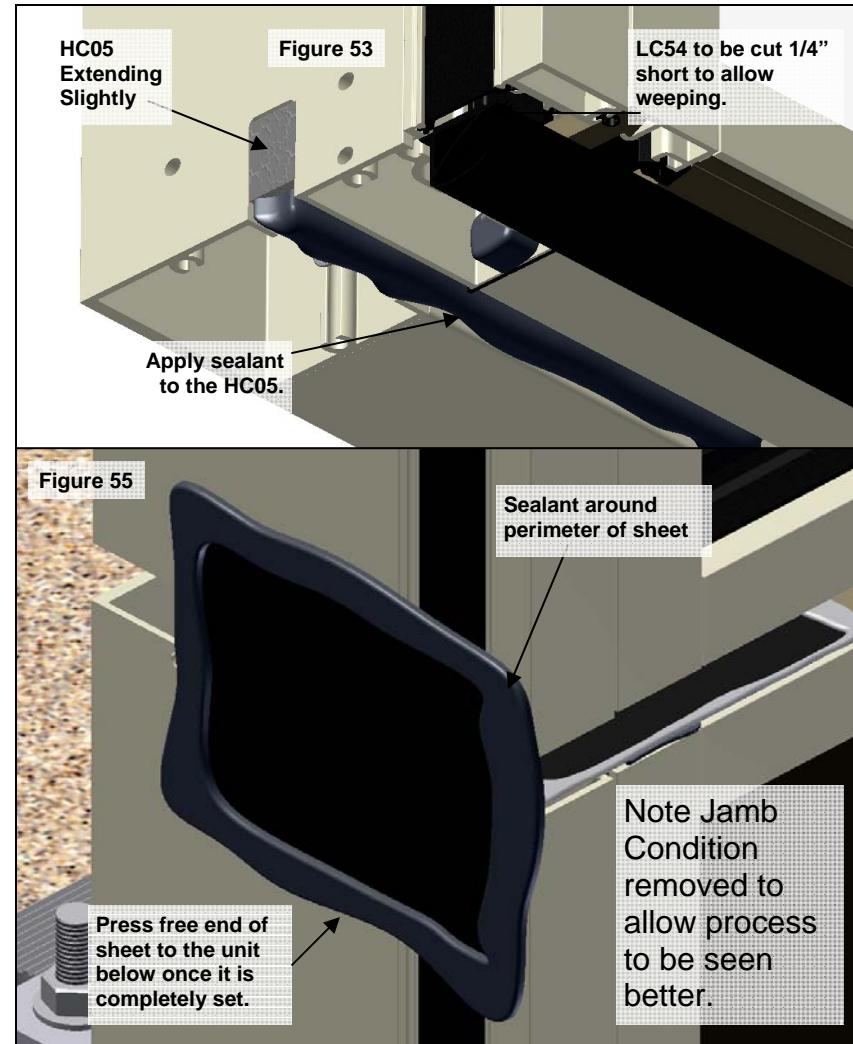
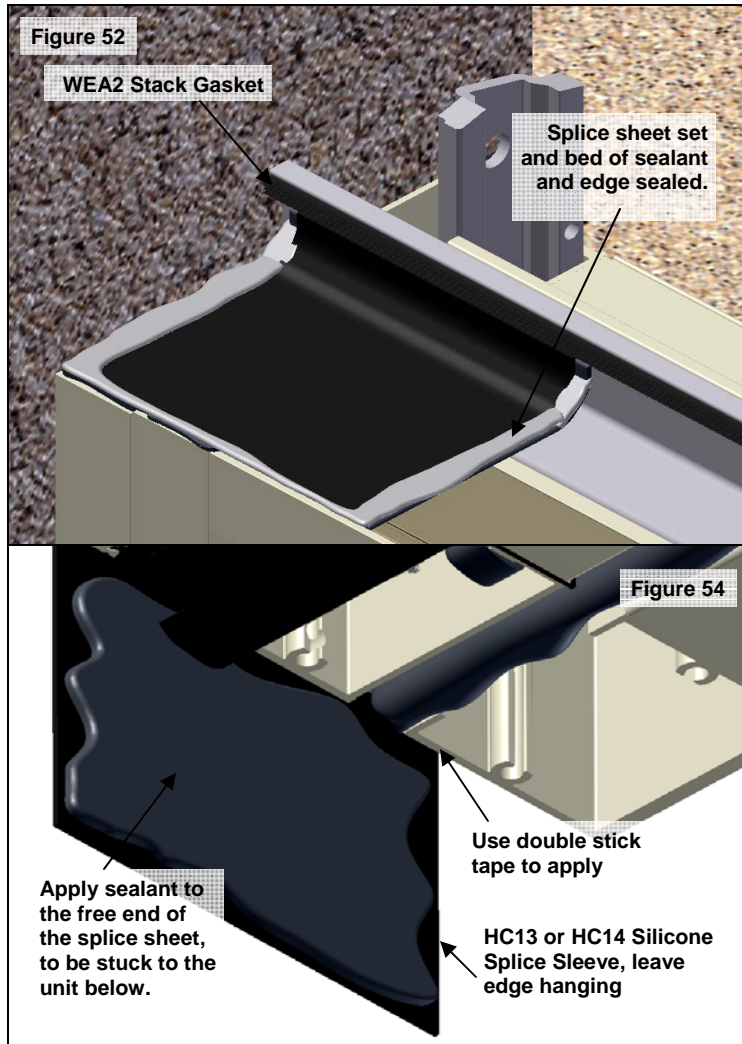


Figure 51

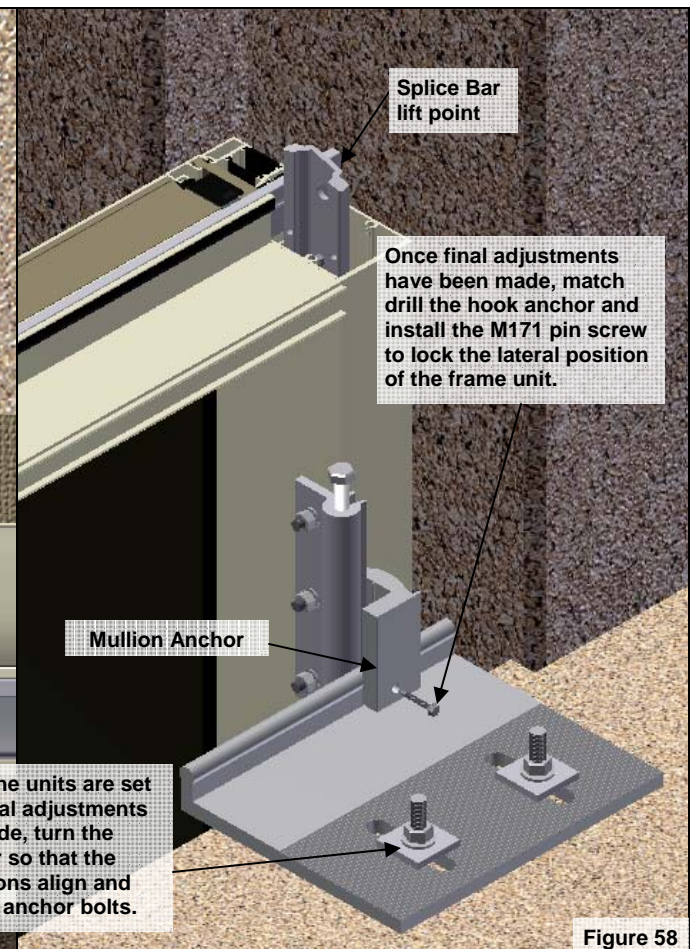
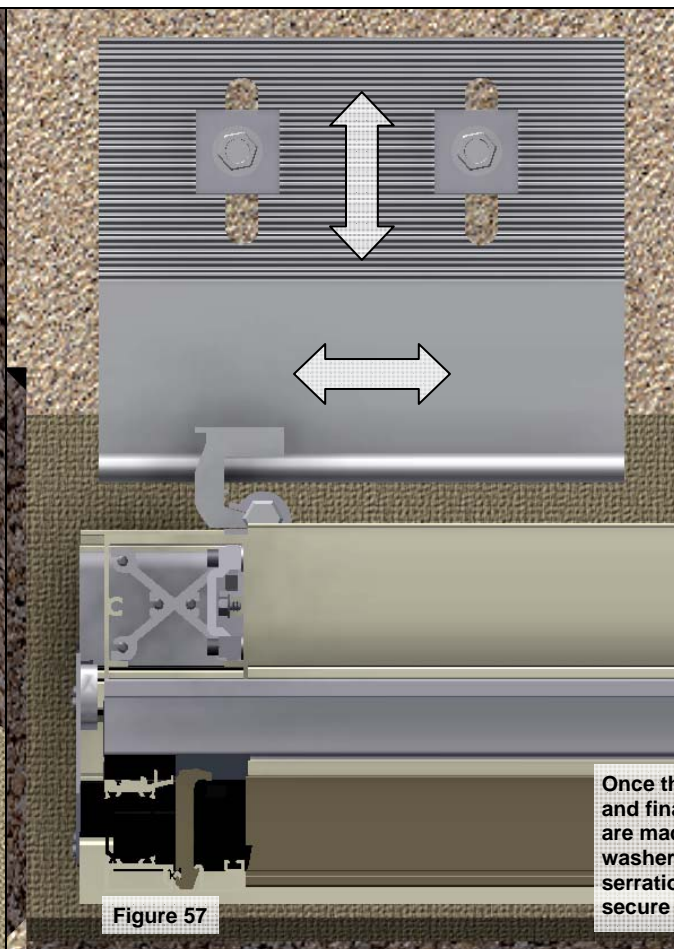
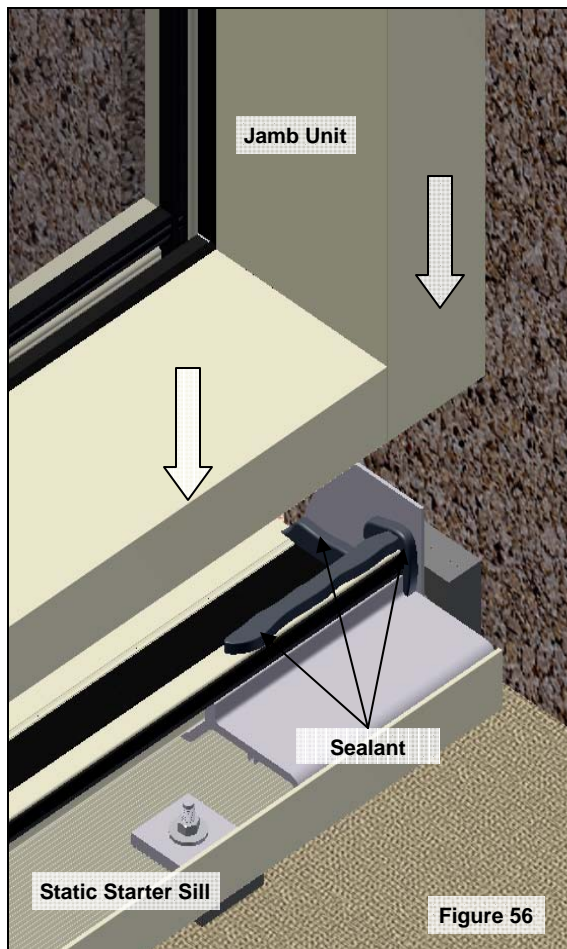
Section 6 - Unit Inspection and Preparation for Installation

2. Preparations are different at the jamb condition units.
 - a. Apply backer rod and sealant into the hollows of the jamb adapter.
 - b. Apply a splice sheet following steps 2-6 on page 33. See figure 52. Note: steps a & b can be done before or after the unit is set. Steps c thru e must be done immediately before the unit above is set.
 - c. Apply HC05 sealant backer per instructions on page 26. See figure 53. Note that the HC05 only needs to extend slightly past the face of the mull.
 - d. A splice sheet will be applied the condition side of the unit to act as an end dam. There is a special splice sheet for this application with double stick tape on one end. (KV39) Use this tape to attach the splice sheet to the unit. See figure 54.
 - e. Apply sealant to the side of the splice sheet that is hanging this will be used to seal it to the unit below. See figure 54.
 - f. Once the unit is completely set press the hanging end of the splice sheet to the unit below and smooth to remove any bubbles. See figure 55.
 - g. Finally liberally apply sealant around the perimeter of the splice sheet. See Figure 55.



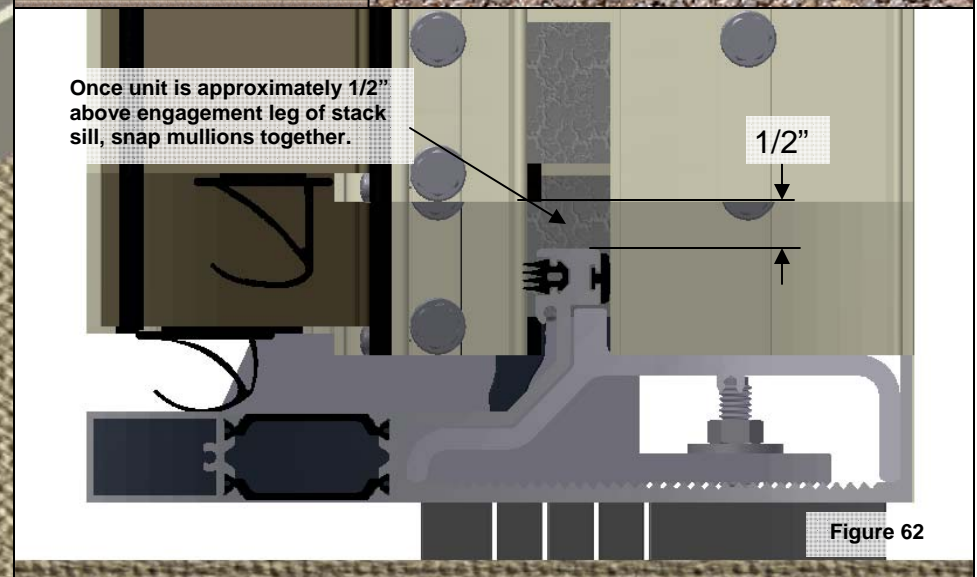
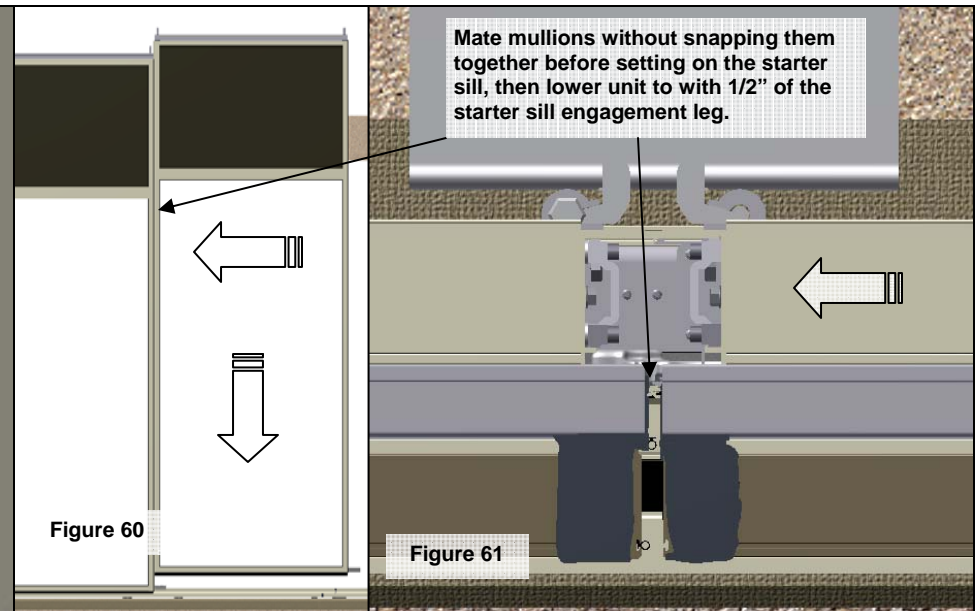
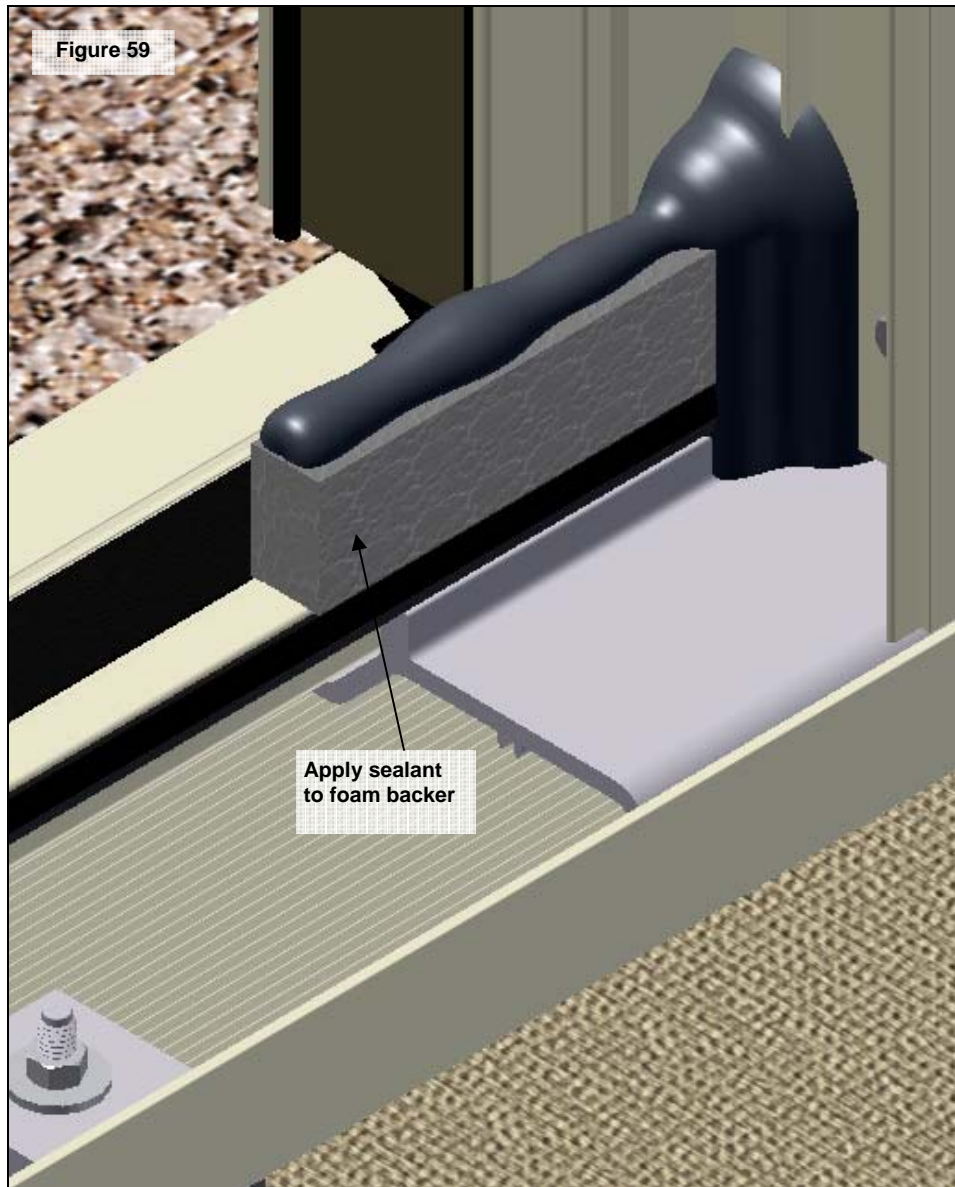
Section 7 - Setting Units at Static Starter Sills

1. Static starter sills are used with installations that don't require provisions for vertical movements at the beginning floor of the curtain wall.
2. Ensure that end dam is properly sealed and apply a bead sealant to top of stack leg about 8" long where HC05 foam sealant backer will contact it.
3. Units are typically installed from left to right from as seen from the exterior of the building. Install each frame unit in sequence, starting at the left jamb unit.
4. Units are lifted by the splice bars attached at the head of each unit. These bars are also used to align the units when stacked vertically.
5. Lower the jamb unit down into position onto the starter sill. The hook anchors should also be be hooked onto the slab anchors. The unit should now be setting hard on the starter sill. See Figures 56 and 58.
6. If the starter sill was properly installed and the unit is square and is setting hard on the starter sill, the unit will be at the proper elevation and will be level and plumb from side to side.
7. Compare the jamb unit to established bench marks and move the unit side to side to position it laterally to the final required location.
8. Adjust the unit for plumb, parallel to the plane of the wall, by sliding the slab anchor forward or backward until the unit is plumb. See Figure 57.
9. Rotate the serrated washers where the serrations align with the serrations in the anchor and secure the slab anchor's anchor bolts. See Page 23 Figure 43. Match drill the slab anchors through the hook anchors on both sides of the unit, and install the pinning screw to lock the frame unit into the final position. See Figure 58.



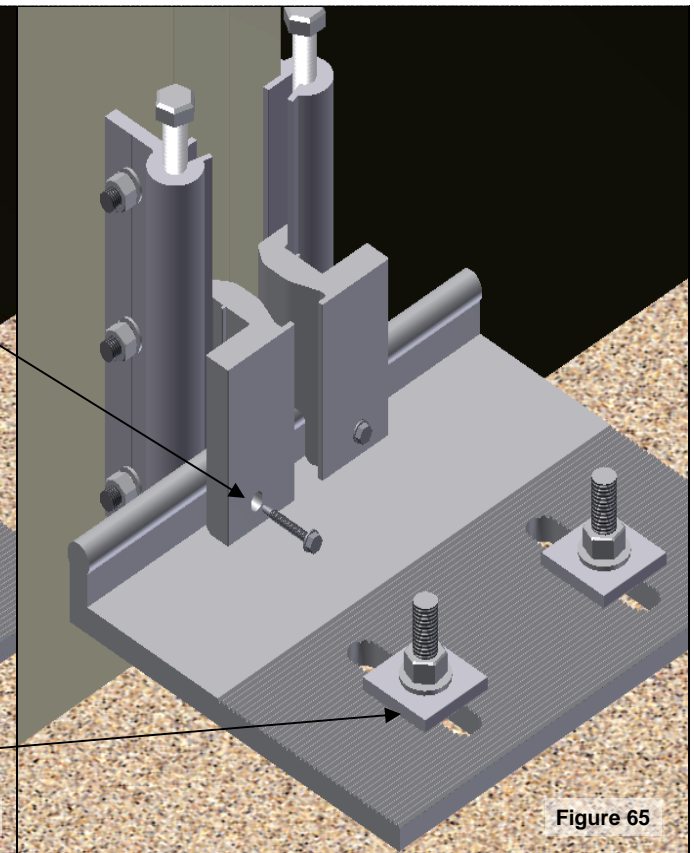
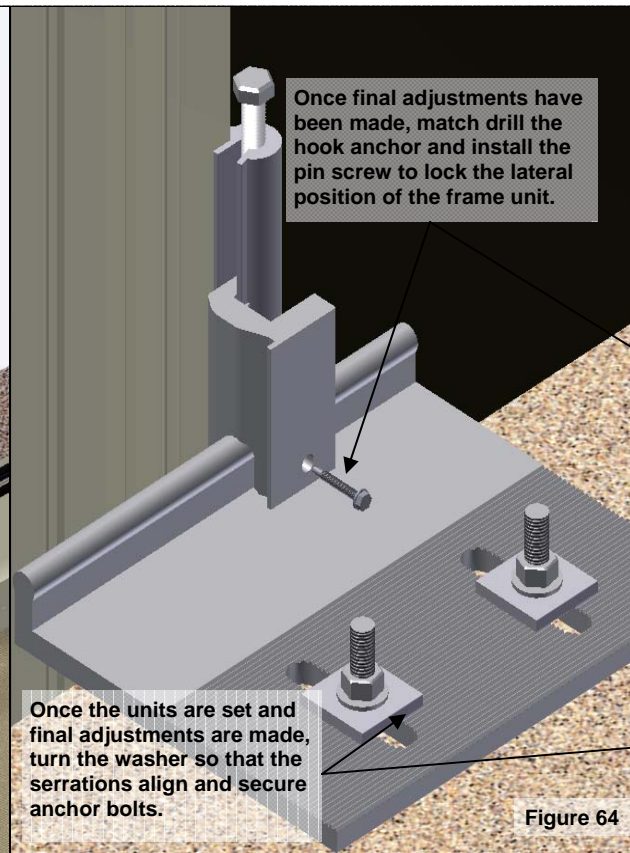
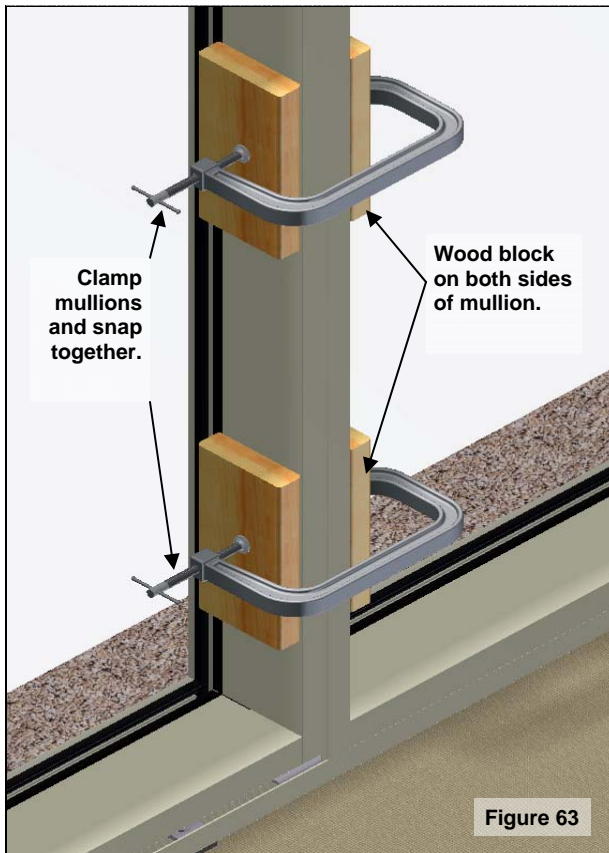
Section 7 - Setting Units at Static Starter Sills

10. Before setting the next unit apply a generous amount of sealant to the foam sealant backer. Run a bead down the entire length . See Figure 59.
11. Set the next unit after the jamb unit by nesting the vertical stacking mullions together without snapping them. See Figure 61.
12. Lower the unit to the static starter sill, but still be approximately 1/2" above the engagement leg of the starter sill. The unit hook anchors should have enough vertical adjustment to hook onto the slab anchors.



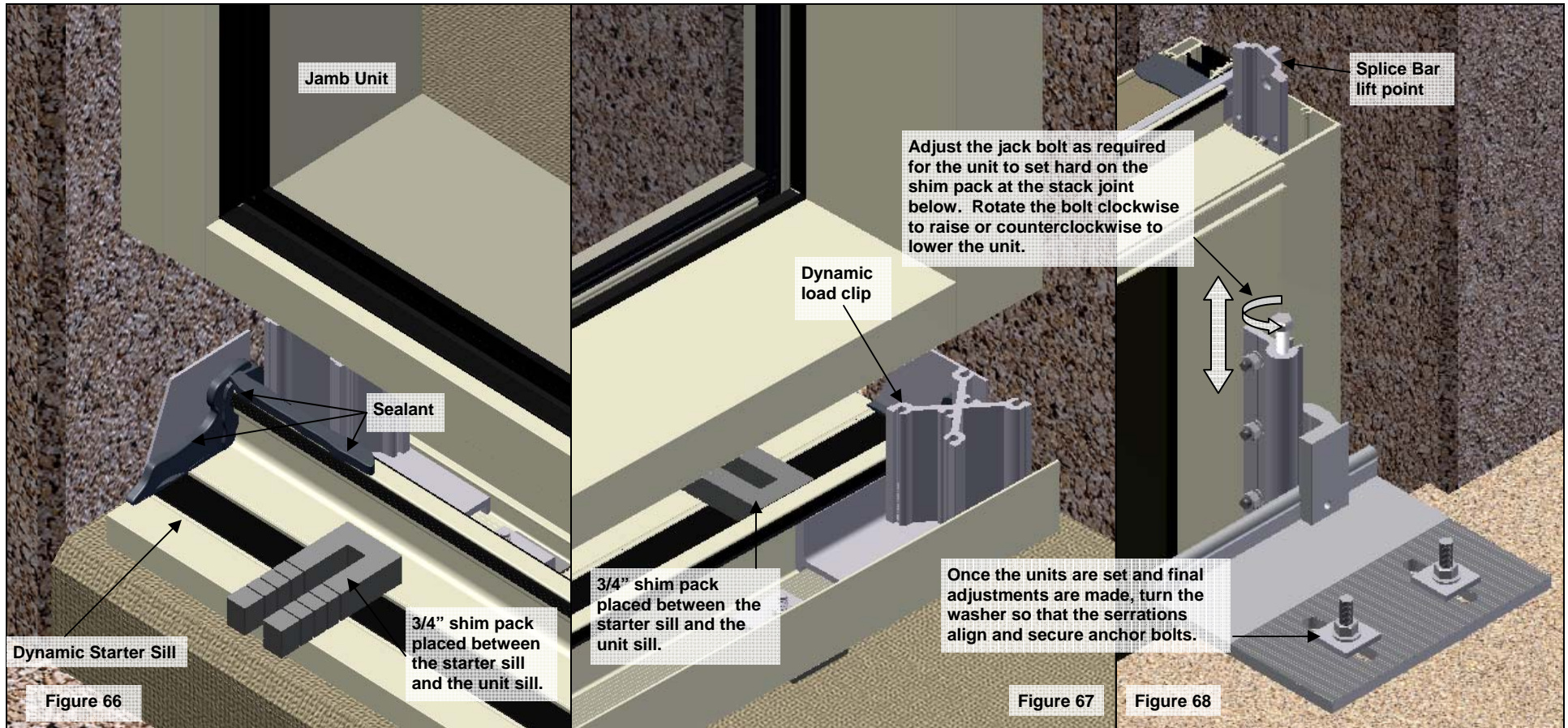
Section 7 - Setting Units at Static Starter Sills

13. Once the unit is approximately 1/2" above the engagement leg of the starter sill, use clamps to snap the mullions together. Place one clamp at the center of the mullion at the bottom of the units. Use wood blocks to protect the finished surfaces of the mullions. Tighten the clamp until the mullion halves begin to snap together. Place another set of wood blocks and a clamp a couple of feet up the unit mullions and tighten it until the mullions snap together. Repeat this process up the length of the mullion until the mullion halves are snapped together continuously. It may be necessary to work from one clamp to the next several times, or move the clamps to ensure the mullions are snapped together evenly. See Figure 63.
14. Lower the unit the rest of the way down until it sets hard on the static starter sill.
15. Slide the unit laterally to adjust the mullion width to 3". This will allow 1/8" for expansion at each mullion.
16. Adjust the free end of the unit for plumb, parallel to the plane of the wall, by sliding the slab anchor forward or backward until the unit is plumb.
17. Rotate the serrated washers where the serrations align with the serrations in the anchor and secure the slab anchor's anchor bolts.
18. Match drill the slab anchors through the hook anchors on both sides of the unit, and install the pinning screws to lock the frame unit into the final position. See Figures 64 and 65.
19. Repeat steps 10 through 18 until all units on the static starter sill level have been installed.
20. When erecting a long run of units, check overall frame location dimensions at every fifth unit to avoid dimensional buildup and to ensure that units are properly positioned with regard to established bench marks.
21. Proceed to "Section 9 - Applying Critical Seals and Stack Gasket".



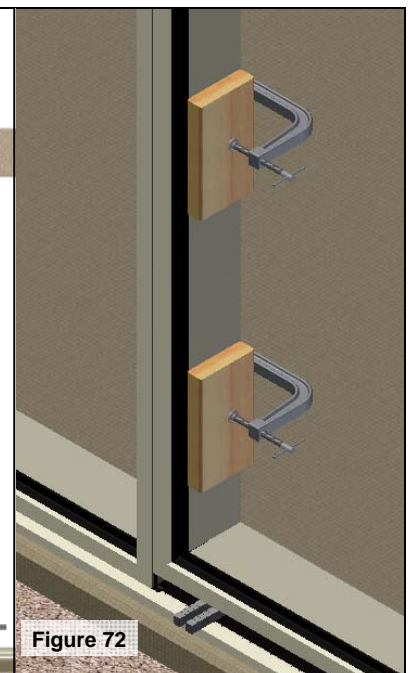
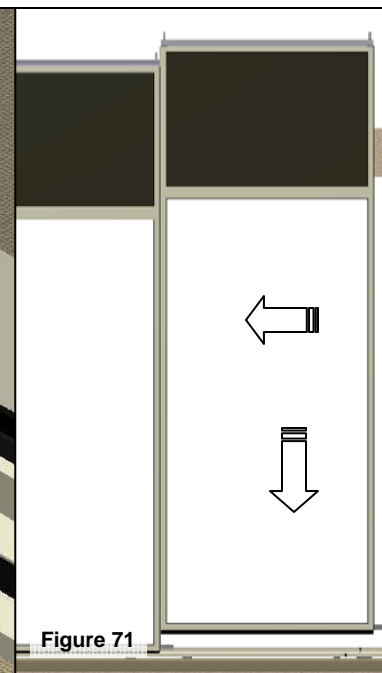
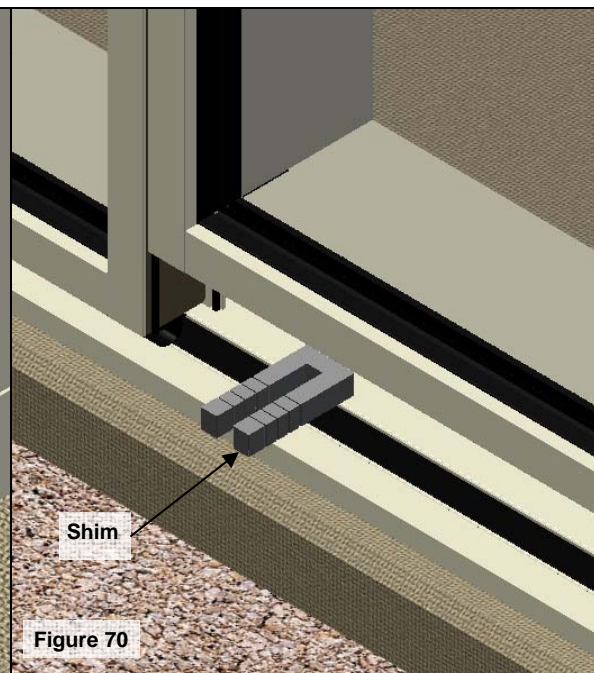
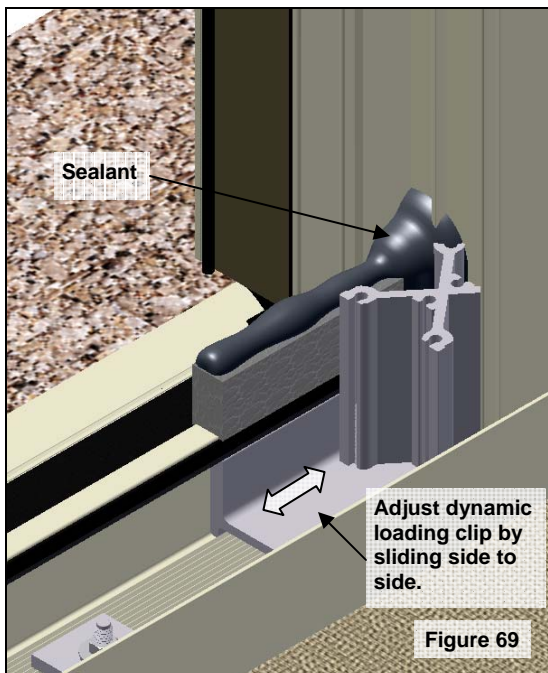
Section 8 - Setting Units at Dynamic Starter Sills

1. Dynamic starter sills are used with installations that require provisions for vertical movements at the beginning floor of the curtain wall.
2. Setting unit units at the dynamic starter sill is very similar to setting units at the static starter sill. There are however a few differences. These differences are explained verbally and graphically below. Also reference pages 26 through 28 "Setting Units at Static Starter Sills".
3. Place temporary 3/4" shims between the unit sill and the front of the dynamic starter sill. The shims are used to maintain the correct spacing at the stack joint area of the starter sill. See Figures 66 and 67.
4. Lower the jamb unit down into position while inserting the dynamic load clip (FM48) and stacking the unit onto the starter sill. The hook anchors should also be hooked onto the slab anchors. The unit should now be setting hard on the shims.
5. Reference page 28 steps 6-8 for plumbing unit and fastening slab anchors.
6. Tighten the jack bolts of the mullion anchors just tight enough so that the shims can be removed and the unit stays in the nominal position. Remove the shims between the sill and the starter sill that were applied in step 3.
7. Set the unit to the required elevation height and level it by turning the jack bolt at each mullion anchor clockwise to raise, or counterclockwise to lower the unit in to the final position.
8. Match drill the slab anchors through the hook anchors on both sides of the unit, and install the pinning screws to lock the frame unit into the final position. See Figure 58 on page 28.



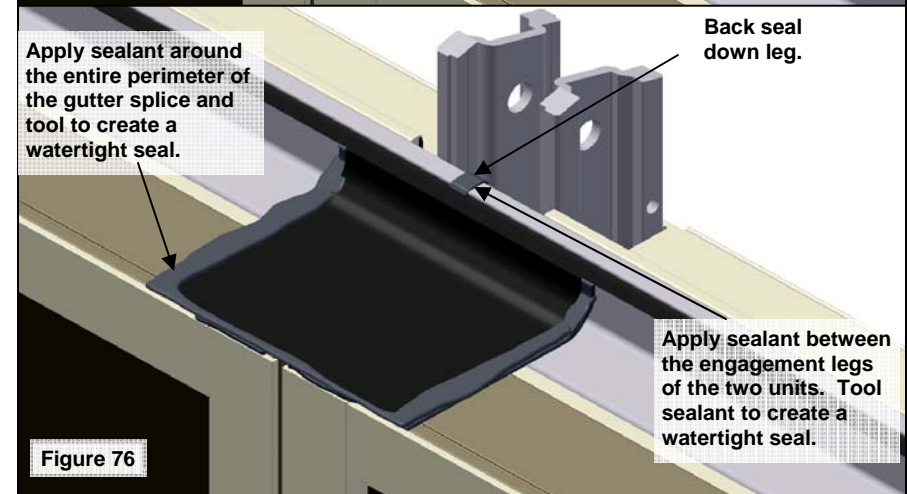
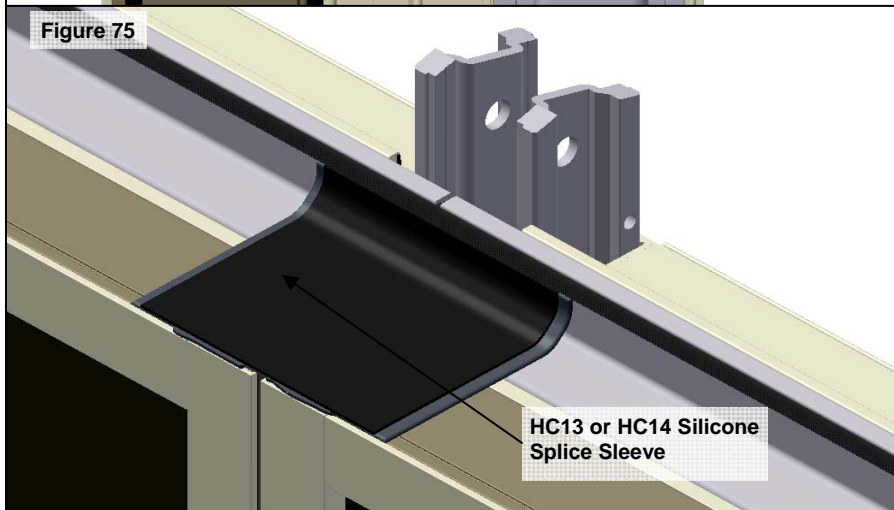
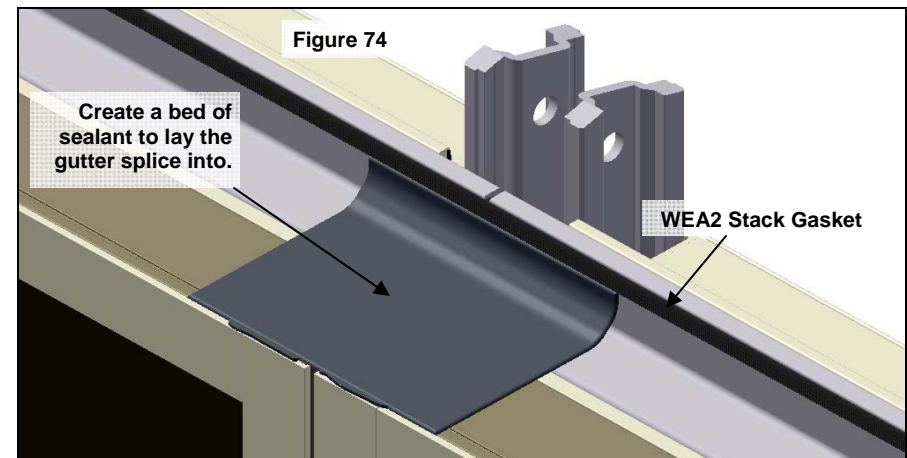
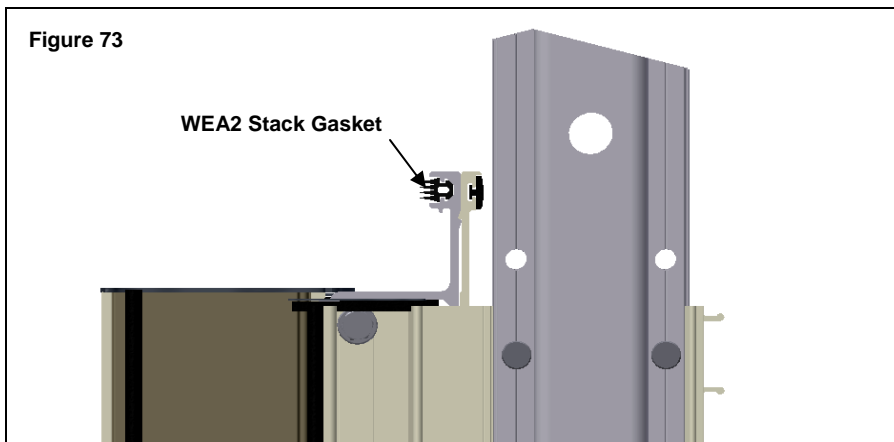
Section 8 - Setting Units at Dynamic Starter Sills

9. Before setting the next unit adjust the dynamic loading clip so that it aligns with the vertical. The anchor can be slid from side to side on the insert.
10. Next apply a generous amount of sealant to the foam sealant backer. Run a bead down the entire length. See Figure 69.
11. Set the next unit after the jamb unit by nesting the vertical stacking mullions together without snapping them. See Figure 61 on page 29.
12. Lower the units enough to engage the slab anchor bar (FM48) at the sill, but still be approximately 1/2" above the engagement leg of the starter sill. The unit hook anchors should have enough vertical adjustment to hook onto the slab anchors. Reference page 29.
13. Place temporary 3/4" shims between the unit sill and the front of the dynamic starter sill.
14. Once the unit is approximately 1/2" above the engagement leg of the starter sill, use clamps to snap the mullions together. Reference Figure 63 and step 13 on page 30. See also Figure 72 below.
15. Lower the unit down into position to completely engage the anchor bars (FM48) and the unit sets hard on the shims between the unit sill and the dynamic starter sill. The hook anchors should also be hooked onto the slab anchors.
16. Adjust the jack bolt as required for the unit to set hard on the shim pack at the starter sill below.
17. Reference steps 15-17 on page 30 for adjusting and plumbing, then fastening slab anchors
18. Tighten the jack bolts of the mullion anchors just tight enough so that the shims at the starter sill below can be removed and the unit stays in the nominal position. Remove the shims between the sill and the starter sill that were applied in step 13.
18. Set the unit to the required elevation height and level it by turning the jack bolt at each mullion anchor clockwise to raise, or counterclockwise to lower the unit in to the final position.
19. Match drill the slab anchors through the hook anchors on both sides of the unit, and install the pinning screws to lock the frame unit into the final position.
20. Repeat steps 9 through 20 until all units on the dynamic starter sill level have been installed.
21. When erecting a long run of units, check overall frame location dimensions at every fifth unit to avoid dimensional buildup and to ensure that units are properly positioned with regard to established bench marks.
22. Proceed to "Section 9 - Applying Critical Seals and Stack Gasket".



Section 9 - Applying Critical Seals and Stack Gasket

1. Once a complete row of units has been installed the WEA2 stack gasket must be applied from the roll to avoid unnecessary splicing. See Figures 73 and 74.
2. A splice is also required at the gutter at the top of the units, before units are stacked on top of them. **Clean the gutter sill sealant contact surfaces using an approved solvent or cleaner of all oils and other contaminants where the gutter splice will be applied. The sealant manufacturer's preparation and application instructions should be followed exactly. If sealant primer is required, apply it per the primer/sealant manufacturer's instructions.**
3. Apply a bed of sealant on the gutter that will cover the area where the splice sheet (HC13 or HC14) will be applied. When creating the bed of sealant, apply a generous amount of sealant directly on top of the primary seal location as shown in Figure 74.
4. The sealant must go from the front of the gutter up the engagement leg to the WEA2 gasket track. The sealant bed must be wide enough to cover the entire area of the gutter splice. See Figure 74.
5. Lay the gutter splice into the bed of sealant. Press the gutter splice up under the WEA2 gasket track. See Figure 75. Smooth the splice down onto the gutter, forcing out all air bubbles.
6. Apply sealant around the perimeter of the gutter splice. Tool the sealant to ensure a watertight seal at the splice. See Figure 76.
7. Apply sealant in the gap between the two snap in legs for the WEA2 gasket, across the top of the engagement leg and down the back leg. Tool the sealant into all voids to ensure a watertight seal. See Figure 76.



Section 10 - Setting Typical Intermediate Units

1. Install each frame unit in sequence, starting at the left jamb unit.
2. Lift the jamb unit with the splice bars at the head of the unit.
3. Ensure the HC05 caulk backer has been inserted into the sill as shown in Figure 50 on page 26. Note that jamb units will receive HC05 on both ends of the sill. Subsequent units will require HC05 on the right end only of the unit sill as viewed from the exterior.
4. When stacking units vertically, place a temporary 1" shim between the units as shown in Figure 77. The shims are used to hold the unit in the nominal installed position.
5. Lower the jamb unit down into position to engage the unit hanger load clips (FM41) at the stack joint. The hook anchors should also be hooked onto the slab anchor. (See Figure 58 on page 28) The unit should now be setting hard on the shims.
6. The final adjustment and setting of a typical intermediate jamb condition unit is the same as the final adjustment and setting at sill units. See steps 5-8 on page 31 for adjustment and final setting of the unit.

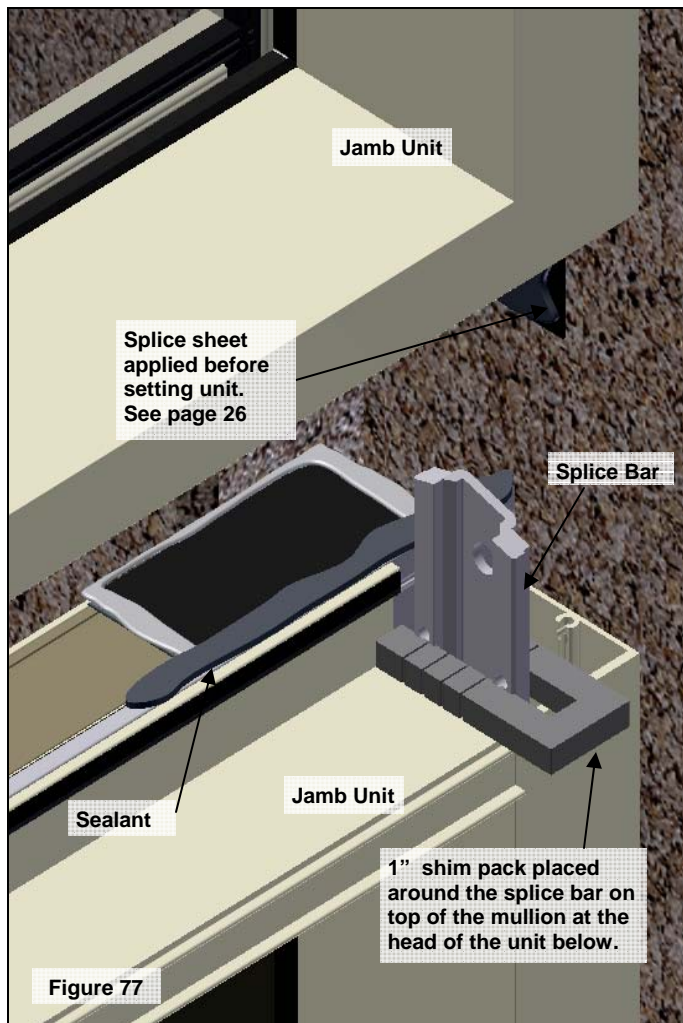


Figure 77

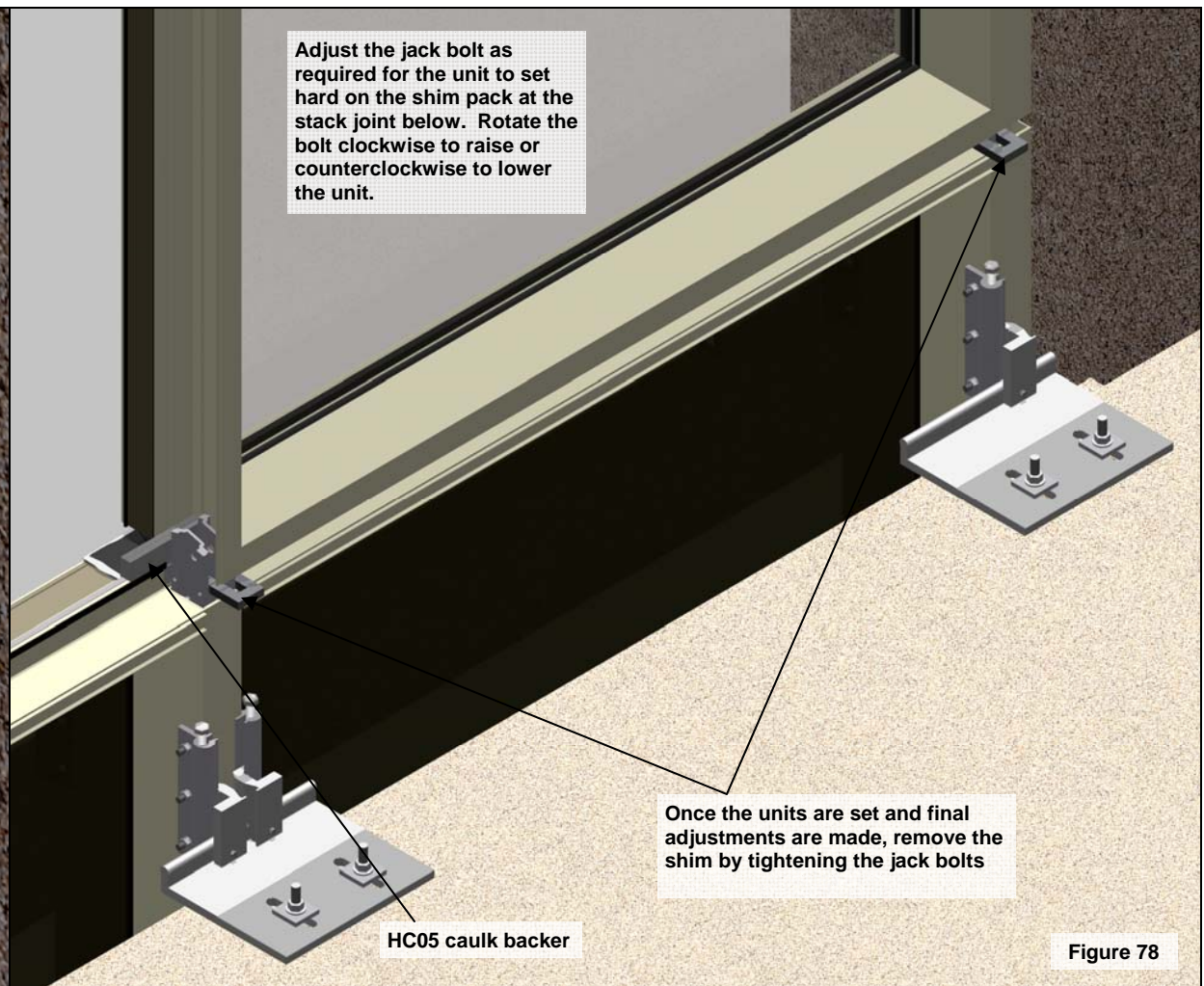
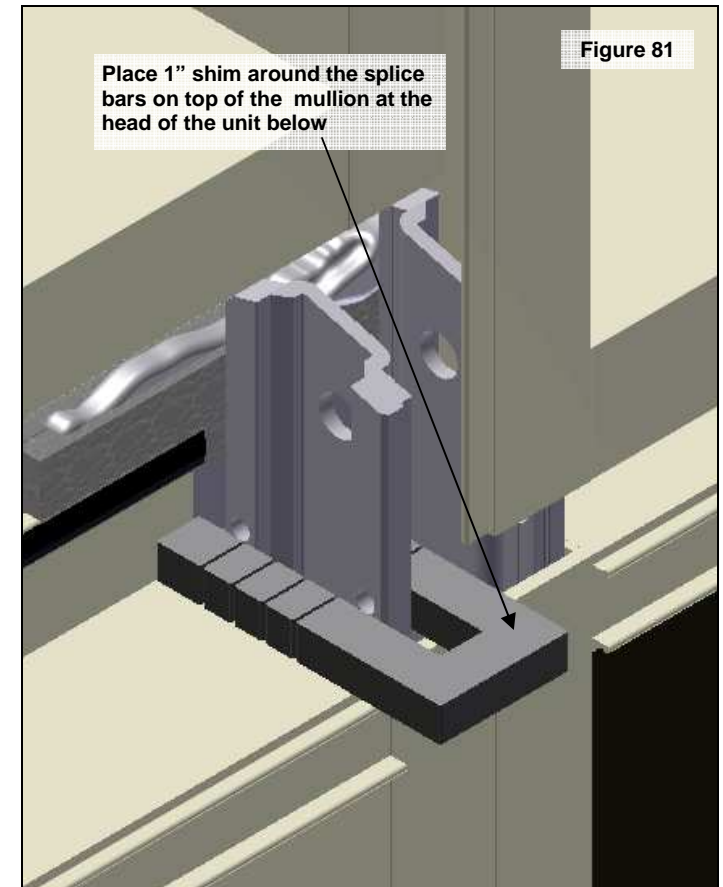
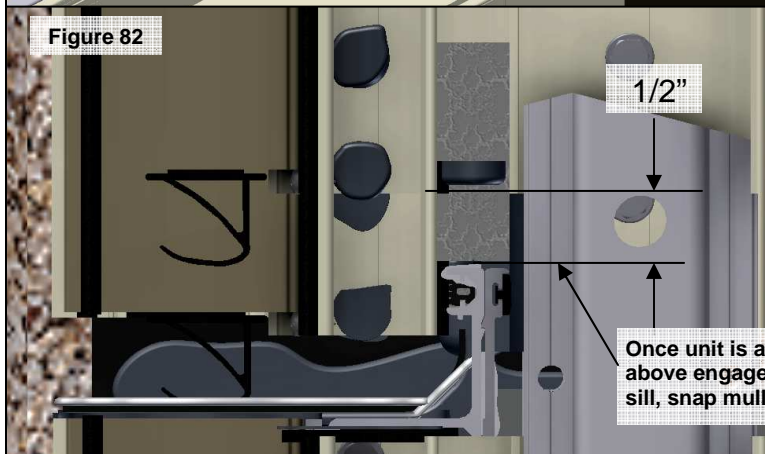
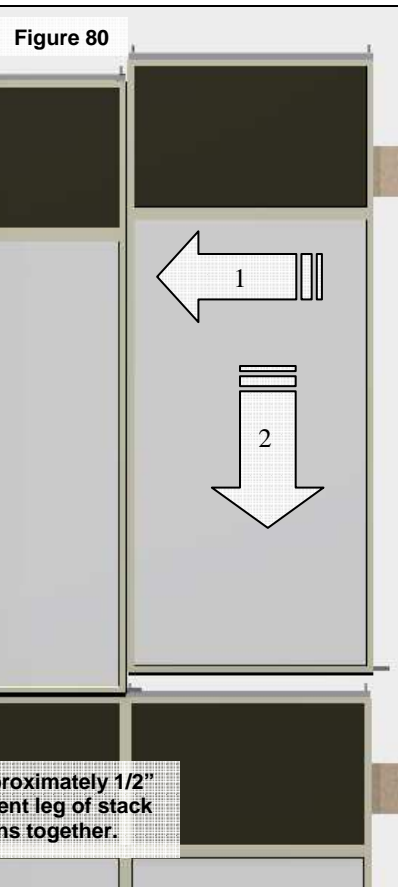
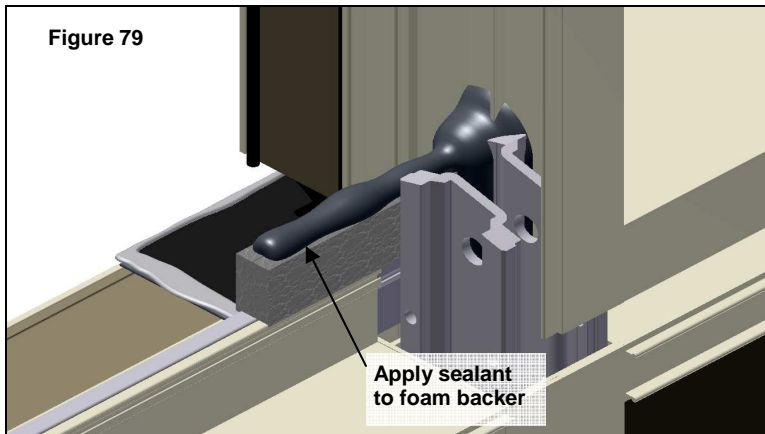


Figure 78

Section 10 - Setting Typical Intermediate Units

7. Before setting the next unit apply a generous amount of sealant to the foam sealant backer. Run a bead down the entire length. See Figure 79.
8. Set the next unit after the jamb by nesting the vertical stacking mullions together without snapping them. See Figure 61 On page 29.
9. Lower the units enough to engage the unit splice bar (FM41) at the sill but still be approximately 1/2" above the engagement leg of the starter sill. The unit hook anchors should have enough vertical adjustment to hook onto the slab anchors.
10. Place a 1" shim pack around the hanger load clip on top of the mullion at the head of the unit below. See Figure 89.
11. Once the unit is approximately 1/2" above the engagement leg of the gutter at the stack joint, use clamps to snap the mullions together. Reference Figure 63 and step 13 on page 30.
12. Lower the unit down into position to completely engage the unit splice bars at the stack joint. The hook anchors should also be hooked onto the slab anchor.
13. The unit should now be setting hard on the shims.
14. Adjust the jack bolt as required for the unit to set hard on the shim pack at the starter sill below.
15. Repeat steps 2 through 14 until all units on the intermediate floor levels have been installed.
16. When erecting a long run of units, check overall frame dimensions at every fifth unit to avoid dimensional buildup and to ensure that units are properly positioned with regard to established bench marks.



Section 11 - Setting Typical Head Condition Units

1. Setting typical head condition units is very similar to setting typical intermediate units. Reference paged 34 and 35. There are however a few differences these will be explained verbally and graphically below.
2. Apply splice sheet to the top corners per steps a & b on page 27. Smooth it to remove any bubbles in the sealant. Apply sealant to the edge and tool to create a water tight seal. See figures 83 and 84.
3. The typical head condition units have an optional retractable hanger (KV20), which can be drive down with a mallet to get it out of the way for setting the unit. See figures 83 and 84.

Figure 83

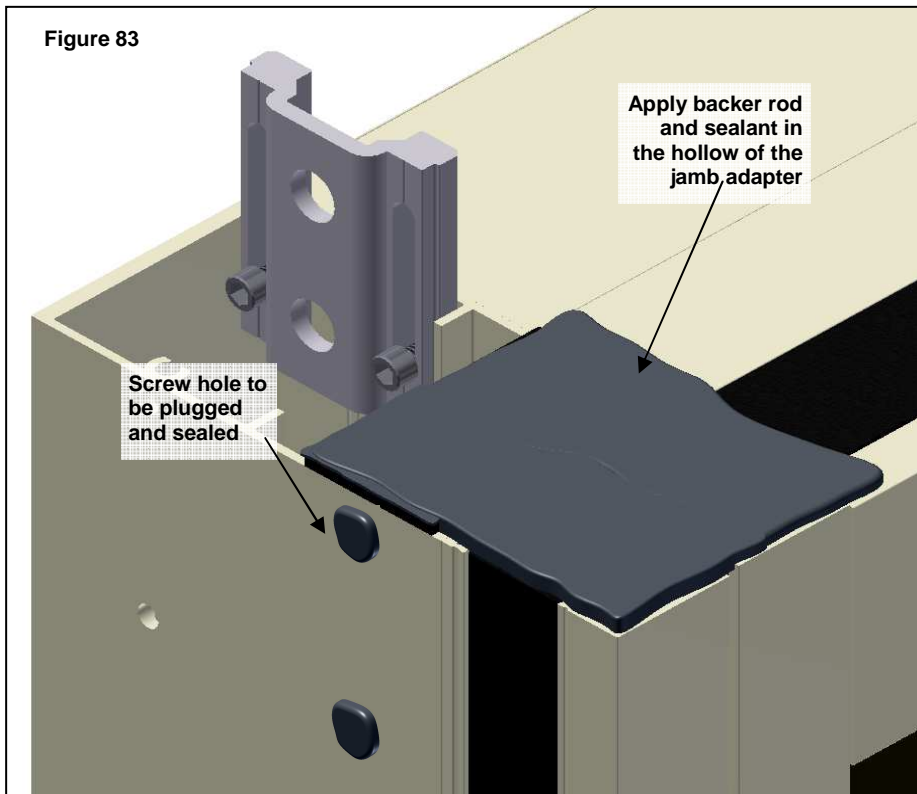
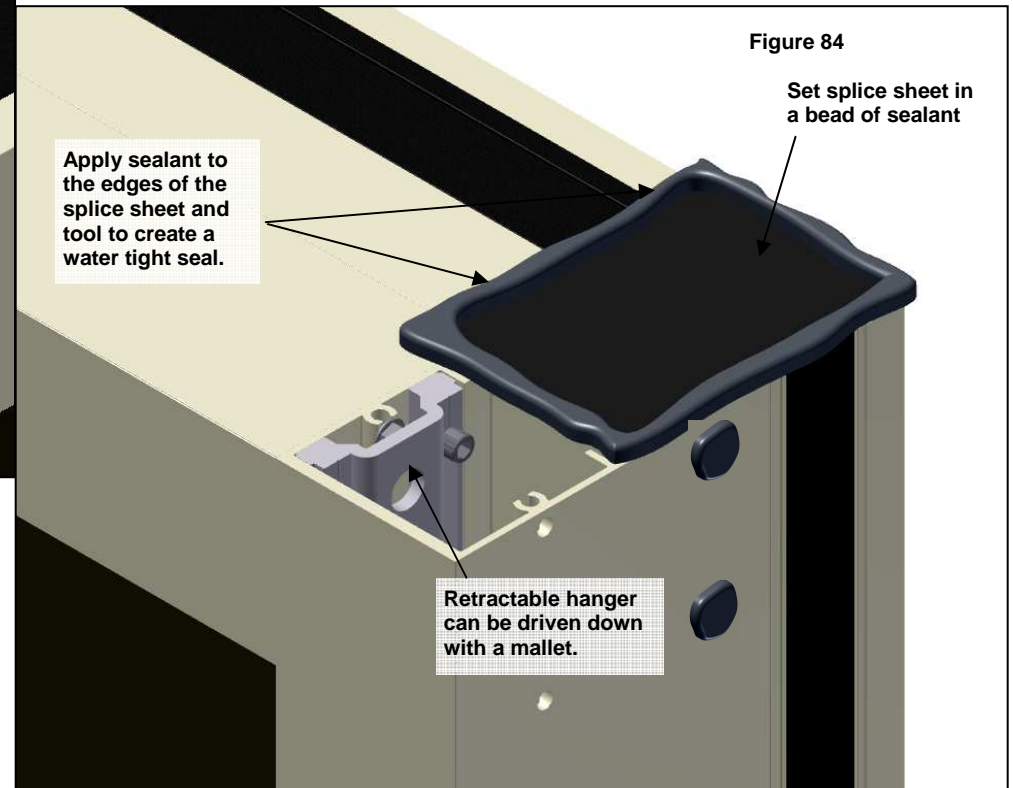
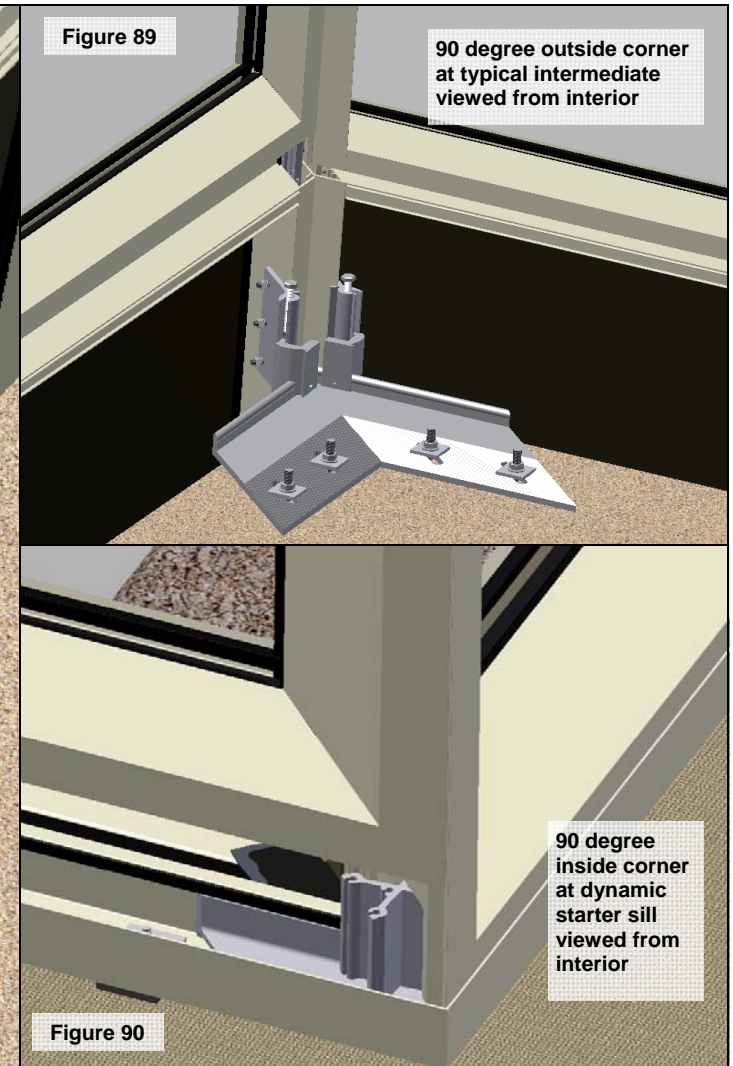
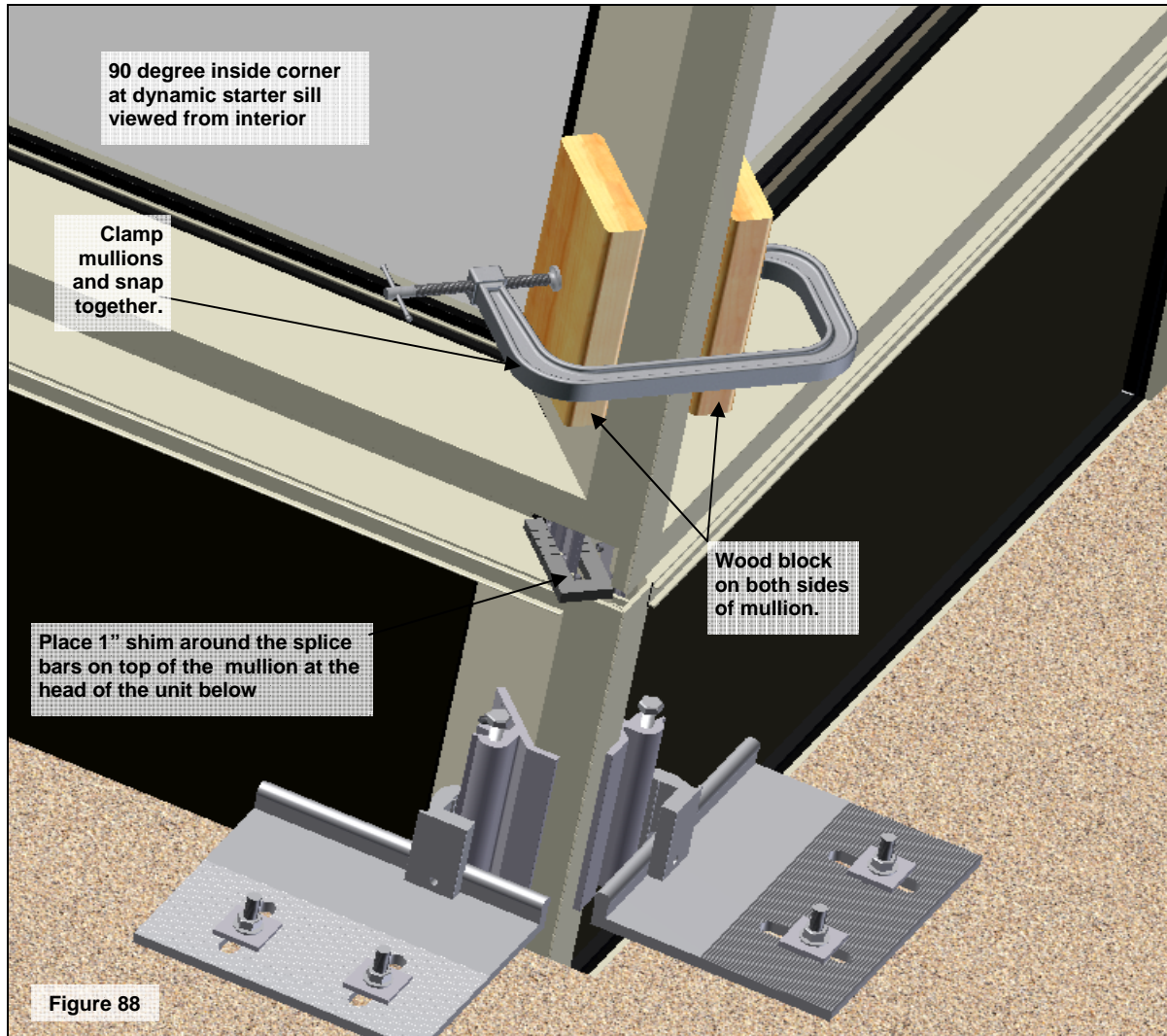


Figure 84



Section 12 - Setting Corner Units

1. Follow the check list in "Section 6 - Unit Inspection and Preparation for Installation" on pages 25, 26 and 27 before installing the corner units.
2. Verify the adjacent unit has been installed properly before installing corner units. If not make necessary adjustments to align the units.
3. Corner units are designed to be installed from left to the right as viewed from the exterior of the building.
4. Setting Inside and Outside corner units is very similar to setting typical units at both static and dynamic sills and typical intermediate units. Reference the corresponding section that applies for detailed instructions. Section 7 "Setting Units at Static Starter Sills" pages 28-30, Section 8 "Setting Units at Dynamic Starter Sills" pages 31-32, Section 10 "Setting Typical intermediate Units" pages 34-35, and Section 11 "Setting Typical Head Condition Units" page 36.
5. The exception being inside corners. The unit on the left (viewed from the exterior) will have the right edge of the unit coming in without a cover or duracast spacer. This is designed to come together with the left edge of the unit on the right. Before setting the left unit the HD26 Joint plugs will need to be sealed. See shop drawings for more detail.



Section 13 - Applying Typical Perimeter Seals

1. The typical head, jamb and starter sill are as shown below. The caulk joint size is job specific, below a 1" caulk joint is shown at head and jambs and a 1/2" caulk joint at the sill. All seals should join each other head and sill seals should join verticals.
2. The condition at the head is job specific. See Figure 91 for a typical generic head sealant detail. See shop drawings of job specific details.
3. The line of sealant at the jamb will follow the front edge of the back member. See Figure 92. Special care is needed to ensure that the end dam is properly sealed and marries into the perimeter sealant correctly at the jamb to sill condition. See Figures 94.
4. At jamb conditions of the unit stack joint, a splice sheet has been applied. Special care is needed to ensure the splice sheet is properly sealed and marries into the perimeter sealant correctly. See Figure 95.
5. The caulk joint at the starter sill is located at the exterior part of the starter sill and must return at the jambs to marry with the perimeter caulking of the jambs.

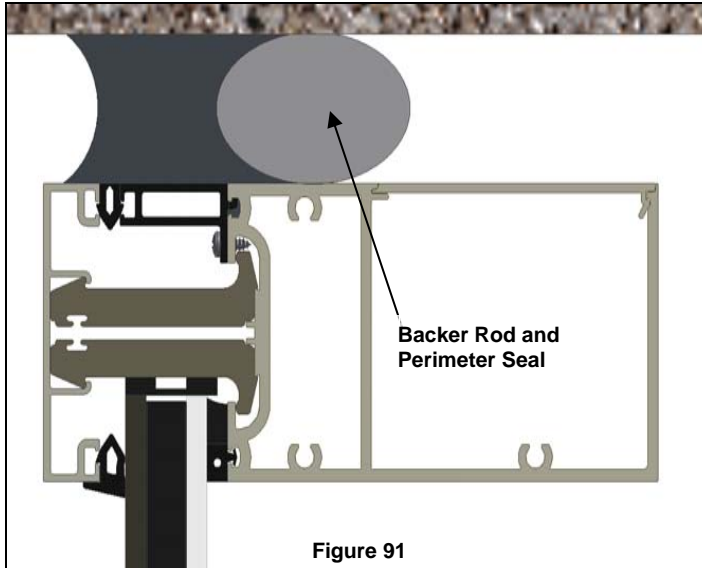


Figure 91

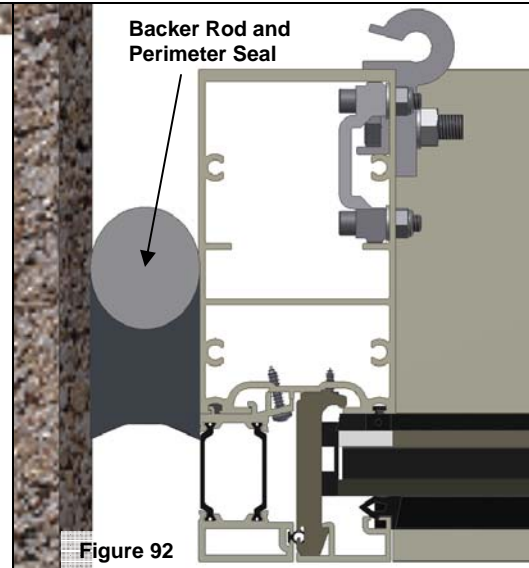


Figure 92

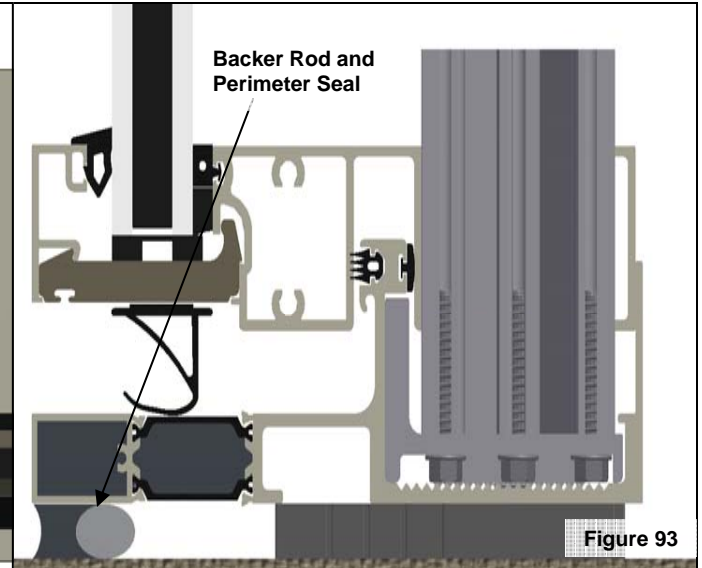


Figure 93

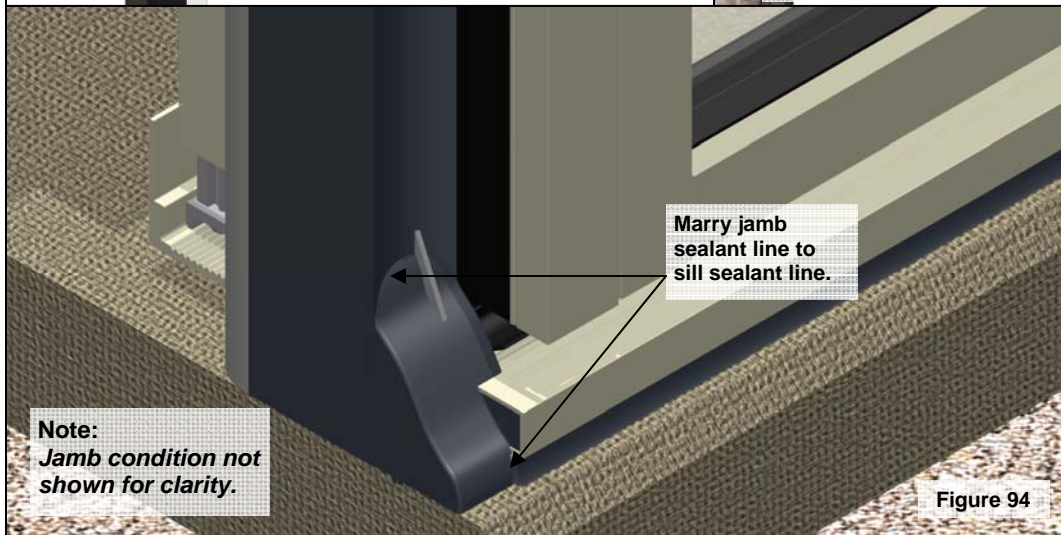


Figure 94

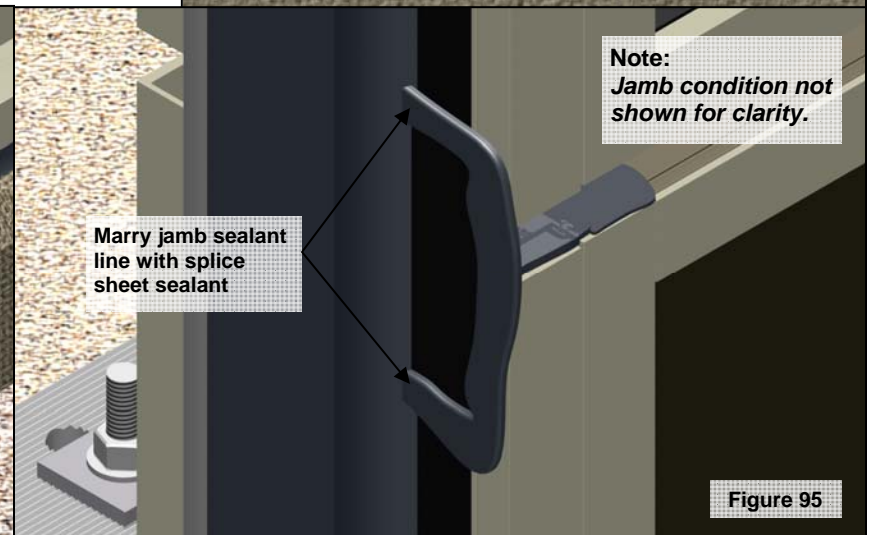
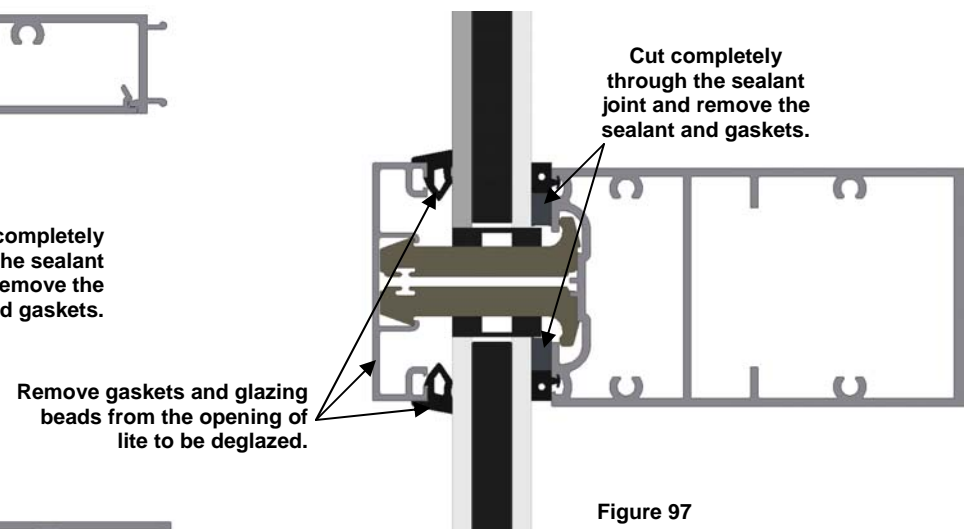
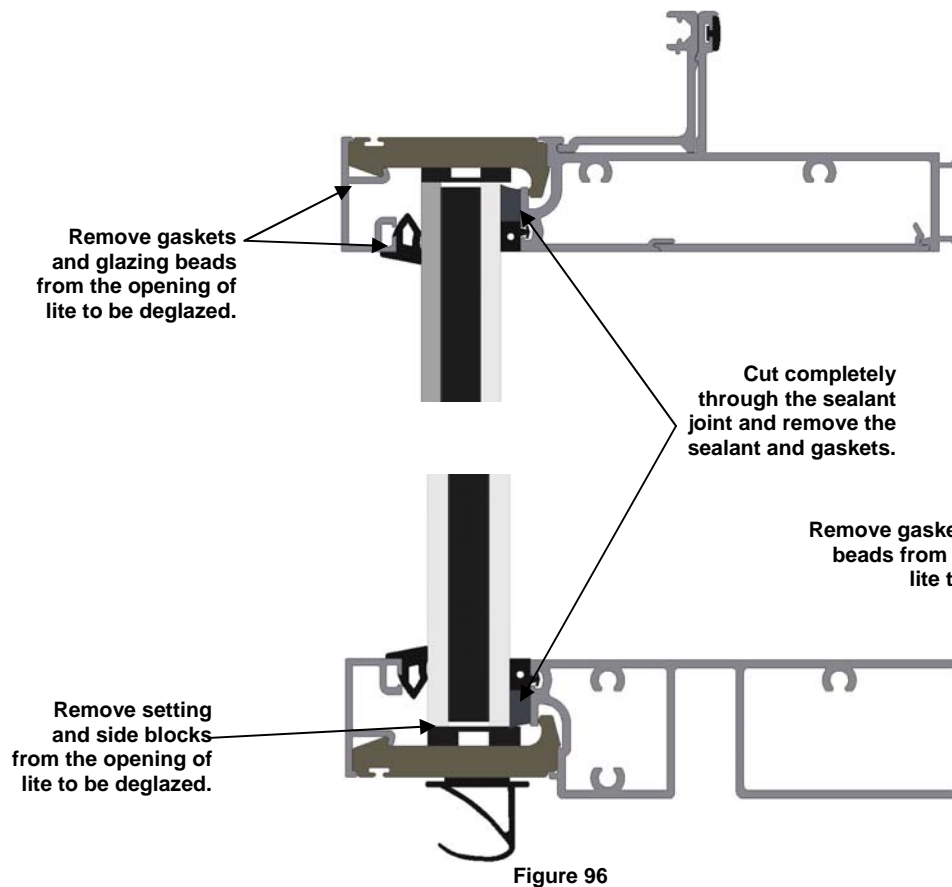


Figure 95

Section 14 - Deglaze / Re-glaze Procedures - Captured System

1. The captured system units can be structural silicone glazed to the frame or may be dry glazed. The deglaze and re-glaze of the dry glazed system should be very straight forward and will be similar to the captured structural silicone glazing instructions below; minus the structural and sealant and using WSD2 interior gasket in place if WC18 spacer. The deglaze and re-glaze procedure must be performed from a swing stage or man lift from the exterior of the building. Follow the sealant manufacture's sealant application instruction for deglazing and re-glazing. When **deglazing** an opening or openings at a captured unit, follow these instructions:
 - a. Remove the wedge gaskets from the perimeter of the day-lite opening of the lite to be deglazed.
 - b. Remove the glazing beads, setting blocks, and side blocks from around the opening.
 - c. Using tools, such as automotive deglazing tools, cut through the glazing sealant removing glazing, old gasket and sealant from the opening. Some areas may be accessible from the interior.
 - d. Cut away the sealant from the substrate, leaving a thin film (approximately 1/32" thick) of sealant on the frame. Do not damage the surface finish of the substrate. Alternatively, if the remaining sealant exhibits adhesive failure, completely remove all sealant, but take care not to damage the substrate finish.
 - e. Remove all remaining gasket pieces or sealant residue from inside the gasket reglets.

Note:
It may be necessary to remove gasket and or bead from lites above or below the deglazing area.



Section 14 - Deglaze / Re-glaze Procedures - Captured System

2. When **re-glazing** an opening or openings at a captured unit, follow these instructions:
 - a. **Using an approved solvent or cleaner, clean the glazing surfaces of all oils and other contaminants. The sealant manufacturer's preparation and application instructions should be followed exactly.** Fresh sealant will adhere to cured sealant without primer. Primer may be necessary if the sealant has been completely removed.
 - b. Replace WC18 preset spacer gasket with new gasket around the entire opening. Ensure the gaskets are firmly butted together in the corners.
 - c. Run a bead of sealant around the WC18 gasket as shown below. The joint must be filled with sealant in excess so that it will fill all voids between the glazing and the WC18 gasket when the glazing is put in place. Tool the sealant into a beveled shape as shown below prior to setting the glazing. Ensure no voids or air bubbles are present in the sealant. The glazing must be set within 10 minutes or before the sealant begins to skin over.
 - d. Carefully insert new setting blocks in the locations as noted in the approved shop drawings.
 - e. Clean the new glass or panel and set it in place, centered in the opening, setting on the setting blocks. Do not contaminate the sealant contact surfaces of the glazing during handling. Press the glazing firmly against the spacer gaskets. Avoid sliding the glazing around on the spacers, as this can force sealant into visible areas seen from the interior.
 - f. Apply temporary retainers with wedge gaskets (WC22) at quarter points of the D.L.O. on all four sides of the opening.
 - g. Tool the sealant around the perimeter of the glazing, packing the sealant into the joint, to ensure any voids or air bubbles in the sealant are eliminated. Carefully relocate the glazing retainers to expose inaccessible areas behind the retainer, and tool the sealant at those areas. Pay particular attention at the corners of the glazing.
 - h. Remove and replace the temporary retainers with a cover and gasket (WC22) join one side of the glazing at a time. Replace one side, and then replace the opposing side next. Replace the remaining sides last. If the exterior gaskets were damaged when they were removed, replace them with new gaskets.

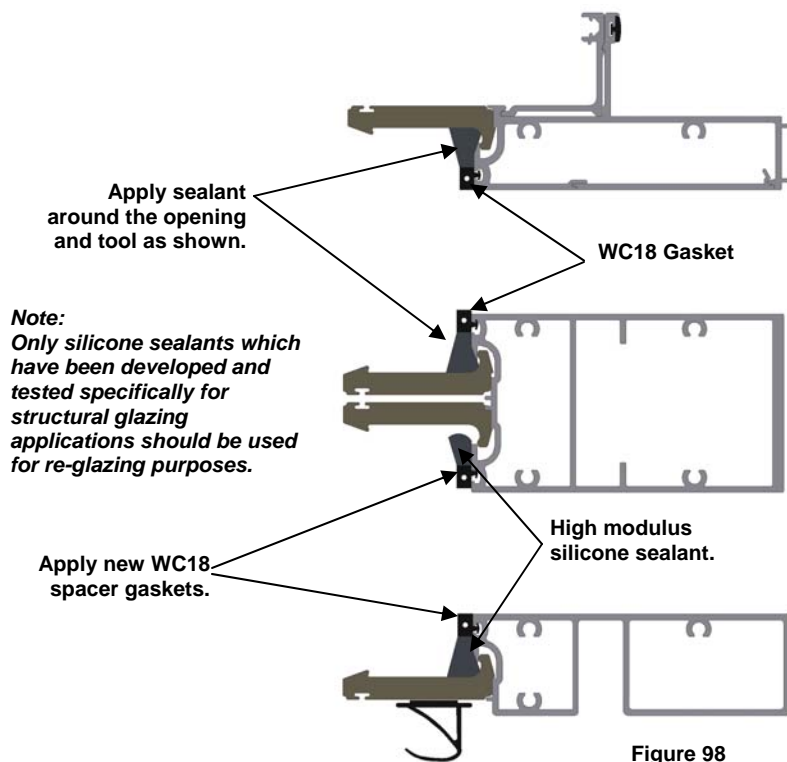


Figure 98

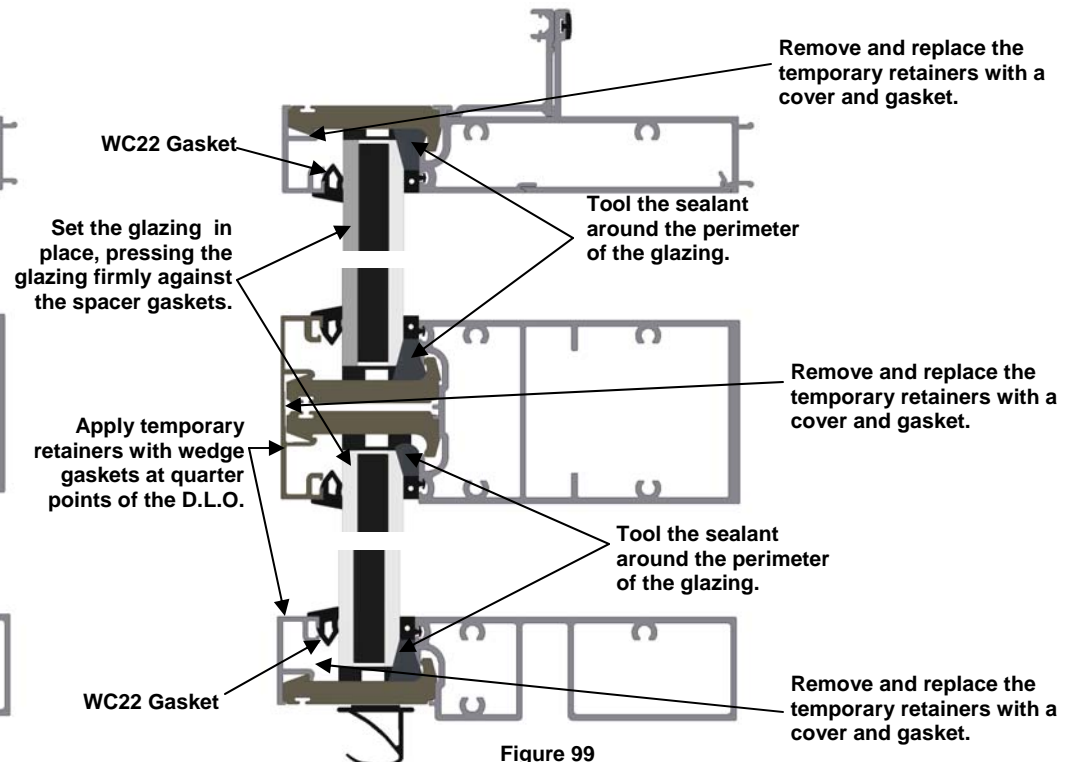


Figure 99

Section 15 - Deglaze / Re-glaze Procedures - SSG System

1. The deglaze and re-glaze procedure must be performed from a swing stage or man lift from the exterior of the building. Follow the sealant manufacture's sealant application instruction for deglazing and re-glazing. When **deglazing** an opening or openings at a structural silicone glazed unit follow these instructions:
 - a. Cut and remove the weather seal, side blocks and setting blocks, from around the lite of glazing.
 - b. Using tools, such as automotive deglazing tools, cut through the glazing sealant removing glazing, old gasket and sealant from the opening. Some areas may be accessible from the interior.
 - c. Cut away the sealant from the substrate, leaving a thin film (approximately 1/32" thick) of sealant on the frame. Do not damage the surface finish of the substrate. Alternatively, if the remaining sealant exhibits adhesive failure, completely remove all sealant, but take care not to damage the substrate finish.
 - d. Remove all remaining gasket pieces or sealant residue from inside the gasket reglets.
 - e. Remove LC45 and Cover from verticals.

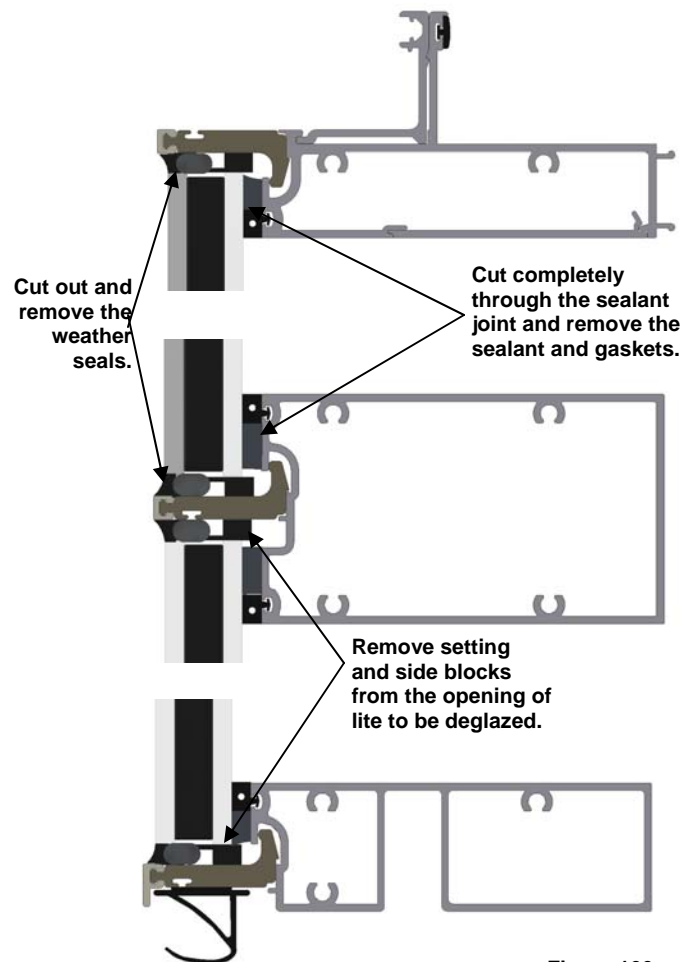


Figure 100

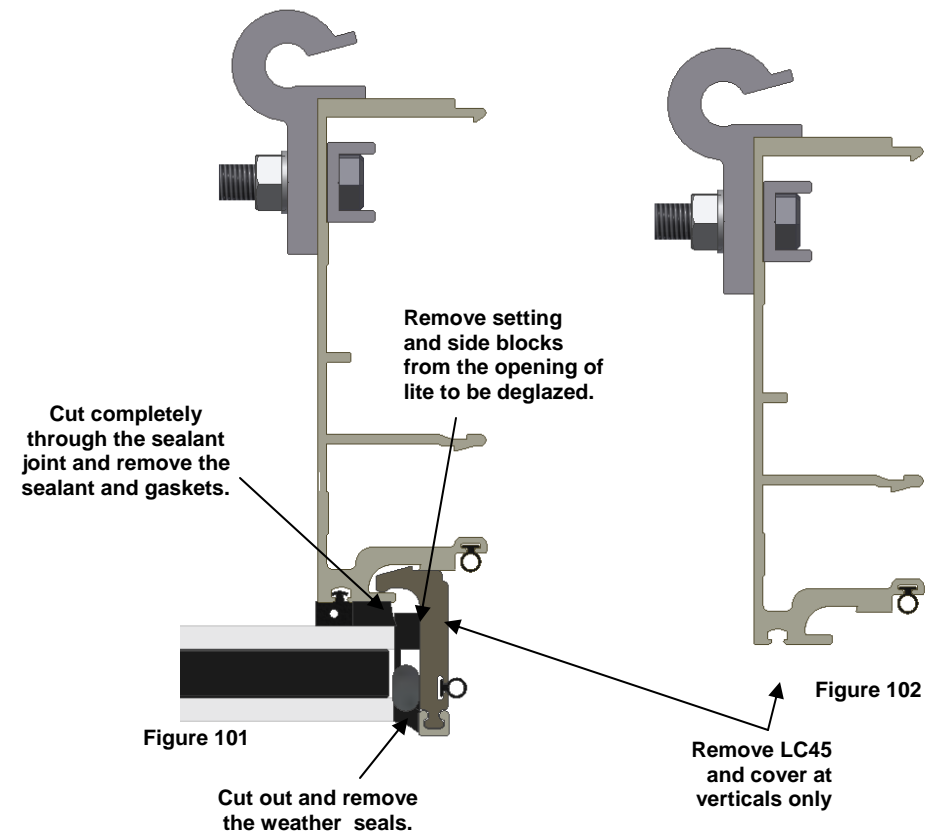


Figure 101

Figure 102

Section 15 - Deglaze / Re-glaze Procedures - SSG System

2. When **re-glazing** an opening or openings at a structural silicone glazed, follow these instructions:
- Using an approved solvent or cleaner, clean the glazing surfaces of all oils and other contaminants. The sealant manufacturer's preparation and application instructions should be followed exactly.** Fresh sealant will adhere to cured sealant without primer. Primer may be necessary if the sealant has been completely removed.
 - Replace WC18 preset spacer gasket with new gasket around the entire opening. Ensure the gaskets are firmly butted together in the corners.
 - Run a bead of sealant around the WC18 gasket as shown below. The joint must be filled with sealant in excess so that it will fill all voids between the glazing and the WC18 gasket when the glazing is put in place. Tool the sealant into a beveled shape as shown below prior to setting the glazing. Ensure no voids or air bubbles are present in the sealant. The glazing must be set within 10 minutes or before the sealant begins to skin over.
 - Carefully insert new setting blocks in the locations as noted in the approved shop drawings.
 - Clean the new glass or panel and set it in place, centered in the opening, setting on the setting blocks. Do not contaminate the sealant contact surfaces of the glazing during handling. Press the glazing firmly against the spacer gaskets. Avoid sliding the glazing around on the spacers, as this can force sealant into visible areas seen from the interior.

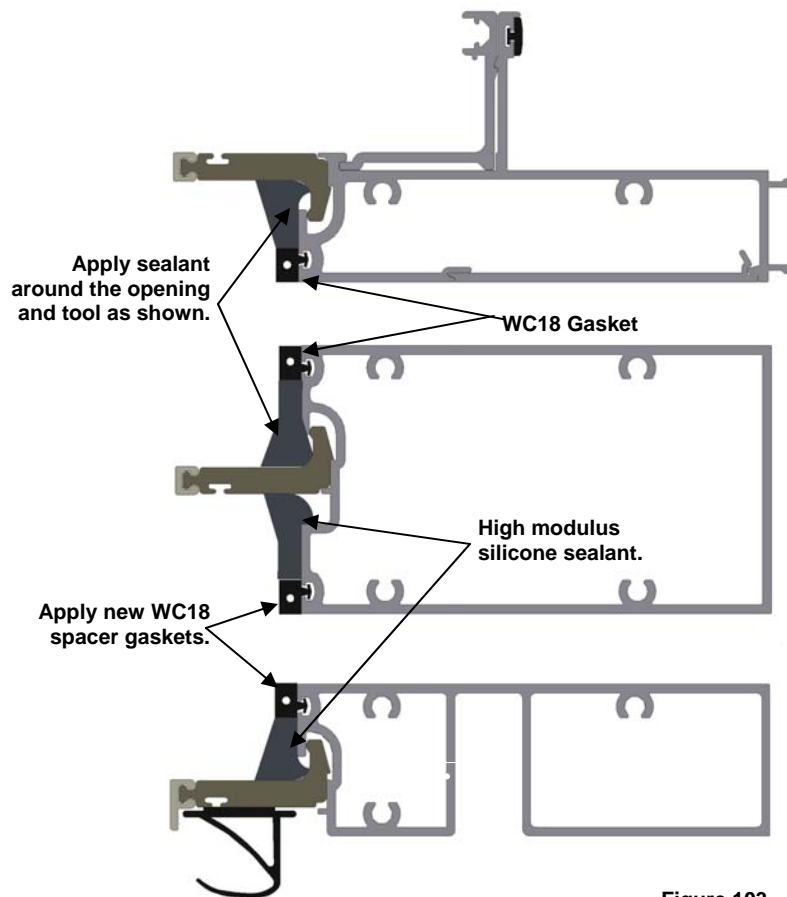


Figure 103

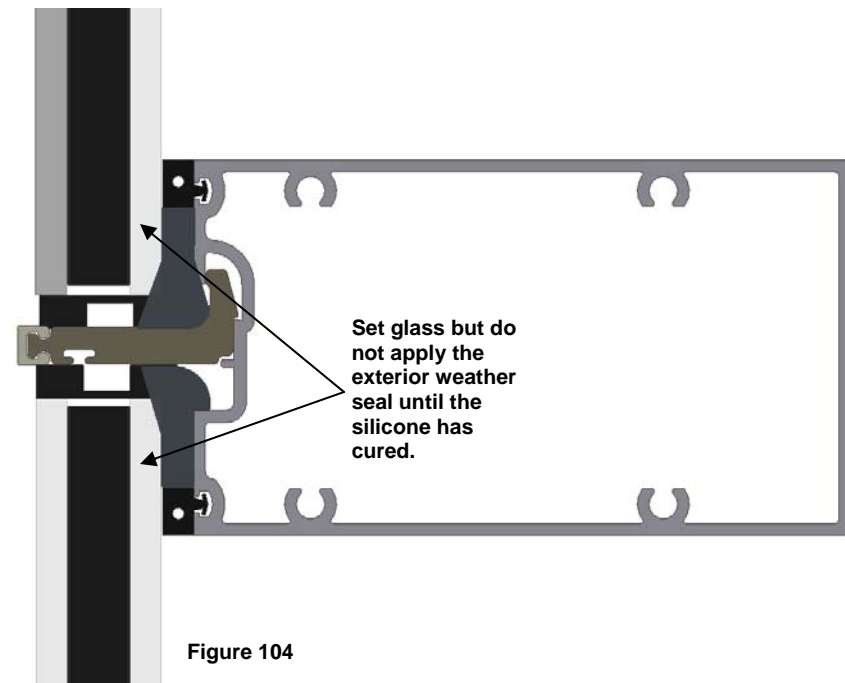


Figure 104

Note:
Only silicone sealants which have been developed and tested specifically for structural glazing applications should be used for re-glazing purposes.

Section 15 - Deglaze / Re-glaze Procedures - SSG System

- e. Apply temporary retainers at verticals. Temporary retainers will be comprised of FM38, 4" pieces of 17T2 and WC22 gasket. If there is captured glazed system on the job used scraps for this. If there is none available then the materials for these temporary retainers must be ordered.
- g. Tool the sealant around the perimeter of the glazing, packing the sealant into the joint, to ensure any voids or air bubbles in the sealant are eliminated.
- h. Once the structural silicone cures remove the temporary glazing retainers, and replace with LC45 with cover.
- i. Do not apply the weather seal around the perimeter of the glazing until the structural silicone joint cures. The SSG joint will typically take 7-14 days, but it can take up to 28 days to fully cure depending on temperature and humidity. Consultation with the sealant manufacturer is recommended.
- j. When the structural silicone joints are fully cured, remove the temporary retainers. Properly clean and prepare the joints, apply backer rod and the weather seal. Tool the joint to form an hour glass shaped sealant joint as shown.

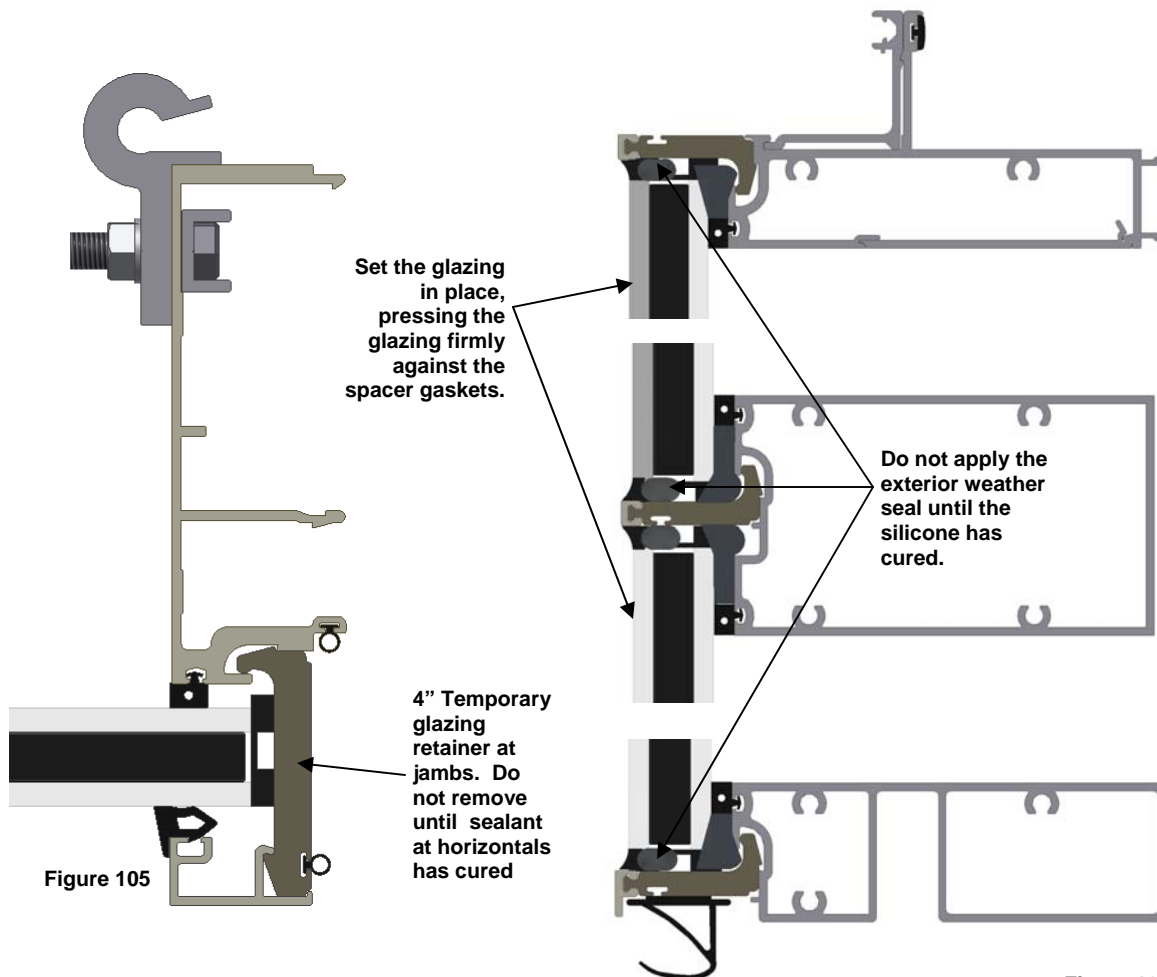


Figure 105

Figure 106

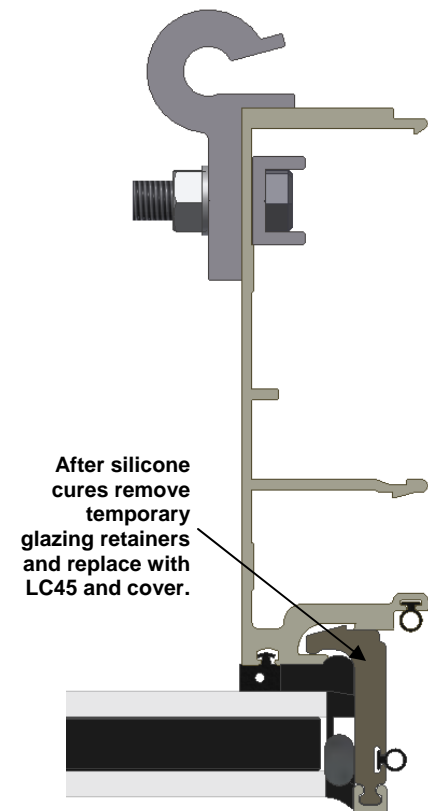


Figure 107