Spectrem® 2

Single-Component, Neutral-Cure Silicone Sealant for 2-Sided Structural Glazing

Product Description

Spectrem® 2 is a high-performance, single-component, neutral-cure, medium-modulus silicone sealant.

Basic Uses

Spectrem 2 is ideal for a variety of perimeter caulking and glazing applications, including 2-sided structural glazing. Spectrem 2 may be used on substrates such as aluminum, glass, steel, painted metal, plastic, stone, concrete and brick.

Features and Benefits

- With medium modulus, can be used as a structural tensile bead and weather sealant.
- Offering excellent adhesion to a variety of substrates including glass and metal, a single product can be used for a variety of applications on the same job from 2-sided structural glazing to perimeter caulking and joint filling.
- Resistance to driving rain, ozone, ultraviolet light, and temperature extremes safeguards against water penetration with exceptional weatherability in all climate zones.
- Wide variety of colors to choose from with custom colors and color matching also available for a particular project.
- No mixing required, so product is always ready to use for immediate application with conventional caulking equipment.
- Greenguard Gold certification ensures safety for use in the most sensitive indoor environments including hospitals and schools.

Availability

Immediately available from your local Tremco Sales Representative, Tremco distributor or warehouse.

Packaging

1/12-gal (300-mL) cartridges

20-oz (600-mL) sausages

2-gal (7.6-L) and 4.5-gal (17-L) pails

55-gal (208.2-L) drums

All colors are not available in all package sizes. Contact Tremco Customer Service for more information.

Colors

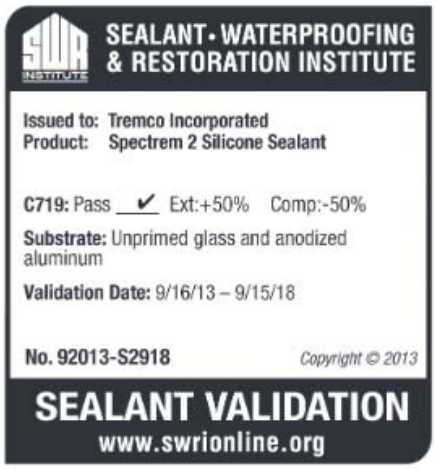
Aluminum Stone, Anodized Aluminum, Black, Bronze, Gray, Limestone, Off White, Precast White, White, Clear and Light Bronze

Limitations

- Do not apply to damp or contaminated surfaces.
- Use with adequate ventilation.
- Not intended for continuous water immersion.
- Only black silicones are recommended for structural glazing applications.

Substrate Preparation

Surfaces must be sound, clean, and dry. Contact surfaces should be free of loose dirt, dust, oils, and any other contaminants. Tremco recommends that air temperatures be 40 °F (5 °C) or above before applying any sealant. If colder weather is imminent, please refer to the Tremco Guide for Cold Weather Applications at www.tremcosealants.com.



Applicable Standards

Spectrem 2 meets or exceeds the requirements of the following specifications:

- ASTM C920 Type S, Grade NS, Class 50, Use NT, M, G, A and O
- ASTM C1248 Standard Test Method for Staining of Porous Substrate by Joint Sealants
- ASTM C1184 Standard Specifications for Structural Silicone Sealants
- U.S. Federal Specification TT-S-001543A (COM-NBS) Class A
- CAN/CGSB 19.13-M87
- U.S. Federal Specification TT-S-00230C (COM-NBS) Class A, Type II
- Black meets all of AAMA 802.3-92 (Type I and II), 805.2-94 (Group C), and 808.3-92

Application

Spectrem 2 is easy to apply with conventional caulking equipment. Fill joint completely and tool. At 75 ˚F (23.9 ˚C), 50% RH, a durable skin will form typically within fewer than 10 minutes. Please visit www.tremcosealants.com for complete application instructions.

Joint Design

May be used in any joint designed in accordance with accepted architectural/engineering practices. Joint width should be 4 times anticipated movement, but not less than 1/4" (6 mm) wide.

Joint Backing

Closed-cell polyethylene backer rods are preferred as joint backing to control depth of sealant bead. Where depth of joint will prevent use of joint backing, an adhesive-backed polyethylene tape should be installed to prevent three-sided adhesion. Joint backing must be dry at time of sealant application.

Sealant Dimensions

For joints 1/4" (6 mm) to 1/2" (13 mm) wide, the width-to-depth ratio should be equal. Joints 1/2" (13 mm) wide or greater should have a depth of 1/2" (13 mm). Minimum joint size is 1/4" x 1/4" (6 mm x 6 mm).

Clean Up

Tooling is recommended immediately after application to ensure firm, intimate contact with the joint interface. Dry tooling is preferred. Cleaning can be accomplished with solvents such as IPA, Xylene, Toluene or MEK while sealant is in an uncured state.

Warranty

Tremco warrants its Products to be free of defects in materials, but makes no warranty as to appearance or color. Since methods of application and on-site conditions are beyond our control and can affect performance, Tremco makes no other warranty, expressed or implied including warranties of MERCHANTABILITY and FITNESS FOR A PARTICULAR PURPOSE, with respect to Tremco Products. Tremco's sole obligation shall be, at its option, to replace, or refund the purchase price of the quantity of Tremco Products proven to be defective and Tremco shall not be liable for any loss or damage.

Please refer to our website at www.tremcosealants.com for the most up-to-date Product Data Sheets.

NOTE: All Tremco Safety Data Sheets (SDS) are in alignment with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) requirements.

TYPICAL PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	TYPICAL VALUES
As Supplied:		
Sag	ASTM C639	
Sag	ASTM D2202	0" to 0.03" (0 mm to 0.1 mm)
Tack free time	ASTM C679	20 to 40 min
Tooling Time	Skin Formation	10 to 15 min
As Cured: After 14 days at 77 °F (25 °C), 50%RH		
Cyclic Movement	ASTM C719	±50%
Elongation	ASTM D412	235 to 260%
Hardness (shore A)	ASTM C661	37 to 40
Peel Strength Aluminum and Glass	ASTM C794	16 to 22 pli (2.81 to 3.86 kN/M)
Staining of Porous Substrates White Marble Primed & Unprimed	ASTM C1248	No Stain
Tear strength, die ("C")	ASTM D624	35 to 40 pli (6.14 to 7.02 kN/M)
Tensile Strength at 100% Elongation	ASTM C1135	90 to 100 psi (0.62 to 0.69 MPa)
Tensile Strength at Max Elongation	ASTM D412	220 to 230 psi (1.52 to 1.59 MPa)
As Cured: After 21 days at 77 °F (25 °C), 50%RH		
Ultimate Elongation	ASTM C1135	261%
Ultimate Tensile Strength	ASTM C1135	123 psi (0.85 MPa)

Tremco Commercial Sealants & Waterproofing

3735 Green Rd
Beachwood OH 44122
216.292.5000 / 800.321.7906

1451 Jacobson Ave
Ashland OH 44805
419.289.2050 / 800.321.6357

220 Wicksteed Ave
Toronto ON M4H1G7
416.421.3300 / 800.363.3213

1445 Rue de Coulomb
Boucherville QC J4B 7L8
514.521.9555

www.tremcosealants.com

This guide only offers a general representation of our color offering. Colors viewed on a computer screen and then printed will vary and will never be a exact representation of the actual pigment. When matching is critical, please refer to our color card or sample color strips.

CANNONDESIGN

SUBMITTAL IDENTIFICATION SHEET

To be completed by Contractor/CM

WEBSTER UNIVERSITY ISB
PROJECT NAME

8274 BIG BEND BLVD
ADDRESS

NUMBER

WEBSTER UNIVERSITY
OWNER

CANNON DESIGN
ARCHITECT / ENGINEER

Joe Voypick
SUBMITTED BY

084423-009
CONTRACTOR / CM SUBMITTAL NO.

CANNON DESIGN SUBMITTAL NO.

DRAWING / DETAIL REFERENCE

084423
SPECIFICATION SECTION / PARAGRAPH

Tremco
MANUFACTURER / SUPPLIER

ITEM / PRODUCT ID

REQUIRED DATE

PRIORITY

○ CRITICAL

ITEM BEING SUBMITTED (check only one)

- ○ Shop Drawings
- ○ Samples (_____ copies)
- ○ LEED Submittal
- ○ Certification / Qualifications
- ◉ Record Documents
- ○ Product Data
- ○ Coordination Drawing
- ○ Calculations
- ○ Schedules
- ○ O&M Manuals
- ○ Other _____

ITEM BEING SUBMITTED FOR (check only one)

◉ Action ○ Information Only ○ Record

REMARKS OR DEVIATIONS

PLEASE SELECT COLOR

CONTRACTOR / CM CERTIFICATION
(SUBMITTALS NOT CERTIFIED WILL BE RETURNED WITHOUT REVIEW)

PARIC

PARIC CORPORATION
SUBMITTAL STAMP

THIS SHOP DRAWING HAS BEEN REVIEWED BY PARIC CORPORATION

Subcontractor remains responsible for dimensions, quantities, coordination with other trades and compliance with contract documents.

By:
Devin D. Gates

Joe Voypick — REVIEWED BY
6/14/16 — DATE

To be completed by Reviewer

08 4423-009
CANNON DESIGN SUBMITTAL NUMBER

6/14/16
RECEIVED DATE

- ○ A. No Exceptions Taken
  No further review of submittal is required.
- ○ B. Make Corrections Noted
  Incorporate corrections in work; resubmission is not required.
- ◉ C. Revise and Resubmit
  Revise as noted, and resubmit for review.
- ○ D. Rejected
  Submittal is not in compliance with Contract Documents; provide new submittal.
- ○ E. For Record / Information Only
  Submittal was reviewed for Record / Information purposes only.
- ○ F. Not Required for Review
  Submittal is not required by Contract Documents and has not been reviewed.

Review is for conformance with the design concept of this project and for general compliance with contract documents. Contractor is responsible for quantities, dimensions and compliance with contract documents and for information that pertains to fabrication processes, construction techniques and coordination of this work with all trades which will be affected thereby. This review is null and void if submittal deviates from contract documents and does not indicate or note deviations.

A/E COMMENTS ○ See attached sheet(s) for additional comments

1. Sealant - meets the requirements of the specification (section 084423 only – Glazing Sealants). Sealants will be tested per specification.
2. The TREMCO Spectrem 2 data sheet indicates that the sealant is for 2-sided structural glazing. We have 4-sided structural glazing on the project. Provide confirmation in writing that this product is approved for the 4-sided application.
3. Warranty- Provide the project specific warranty for the sealant with this submittal. Sample warranty included is blank.
2. Review or this submittal is for sealant only – we understand installation details are only intended to indicate locations of sealant.
3. Provide samples for color selection.
4. Provide information demonstrating that VOC criteria is met.

Lynn Grossman — REVIEWED BY
Digitally signed by Lynn Grossman
DN: C=US, E=lgrossman@cannondesign.com, O=CannonDesign, CN=Lynn Grossman
Date: 2016.06.27 20:00:20-05'00'
06.27.16 — DATE

77 Westport Plaza
Suite 250
St. Louis, MO 63146

TRANSMITTAL

No. 15051-0084

Paric Corporation

PROJECT: 15051-Webster University Interdisciplinary Science Building

DATE: 06/14/2016

TO: Cannon Design
1100 Clark Ave
St Louis MO 63102

RE: Silicone Sealant Product data

ATTN: Kelvin Patel

JOB: 15051

WE ARE SENDING:	SUBMITTED FOR:	ACTION TAKEN:
☐ Shop Drawings	☑ Approval	☑ Approved as Submitted
☐ Letter	☐ Your Use	☐ Approved as Noted
☐ Prints	☐ As Requested	☐ Returned After Loan
☐ Change Order	☐ Review and Comment	☐ Resubmit
☐ Plans		☐ Submit
☐ Samples	**SENT VIA:**	☐ Returned
☐ Specifications	☐ Attached	☐ Returned for Corrections
☑ Other: Product Data	☐ Separate Cover Via:	☐ Due Date:

Item	*Package*	*Code*	*Rev.*	*Copies*	*Date*	*Description*	*Status*
Submittal		084423-009	1		06/14/2016	Silicone Sealant Product data	Submitted

NOTES:

CC: Paric Corporation, Kathy Bathe

Project Coordinator: Paric Corporation, Kathy Bathe

Signed: Devin Gates

Tremco Incorporated
3735 Green Road Beachwood, OH 44122 216.292.5000 www.tremcosealants.com

TREMCO®
Commercial Sealants & Waterproofing

We certify that Spectrem® 2 has been tested against ASTM C 920, Standard Specification for Elastomeric Joint Sealants and does conform to the specification requirements and is classified as follows:

Type:	S	(Single Component)
Grade:	NS	(Non-sag)
Class:	50	(+/- 50% joint movement)
Use:	NT	(Non-traffic)
	M	(Mortar)
	G	(Glass)
	A	(Aluminum)
	O	(Other)

Spectrem 2 meets and exceeds the requirements of ASTM C 1184, Standard Specification for Structural Silicone Sealants. Silicone sealants are required to meet minimum physical properties which include a Shore A hardness range of 20-60, maximum tack free time of 3 hrs and a minimum tensile value of 50 psi when tested at the following conditions including, standard conditions, 80C(190F), -29 C (-20F) water immersion, and 5000hrs weathering.

Spectrem 2 Black is listed to AAMA 800-92, Voluntary Specifications and Test Methods for Sealants, for Section 1.1, Back Bedding Glazing Compounds, 802.3 Types I and II, Section 1.1, Back Bedding Glazing Compounds, 805.2-92 (Group C), and Section 1.4, Exterior Perimeter Sealing Compound, 808.3.

Spectrem 2 has been tested and passed ASTM C 1382, “Standard Test Method for Determining Tensile Adhesion Properties of Sealants when used in Exterior Insulation and Finish Systems (EIFS) Joints.” Third party verification is available upon request.

We further certify that Spectrem 2 conforms to the requirements of the following Federal Specifications:
TT-S-00230C (COM-NBS), Type II, Class A

Spectrem 2 meets CAN/CGSB-19.13-M87.

Spectrem 2 meets the Chinese Specification GB-16776.

Spectrem 2 meets the European Organization for Technical Approval (EOTA) specification ETAG-002, Structural Sealant Glazing Systems.

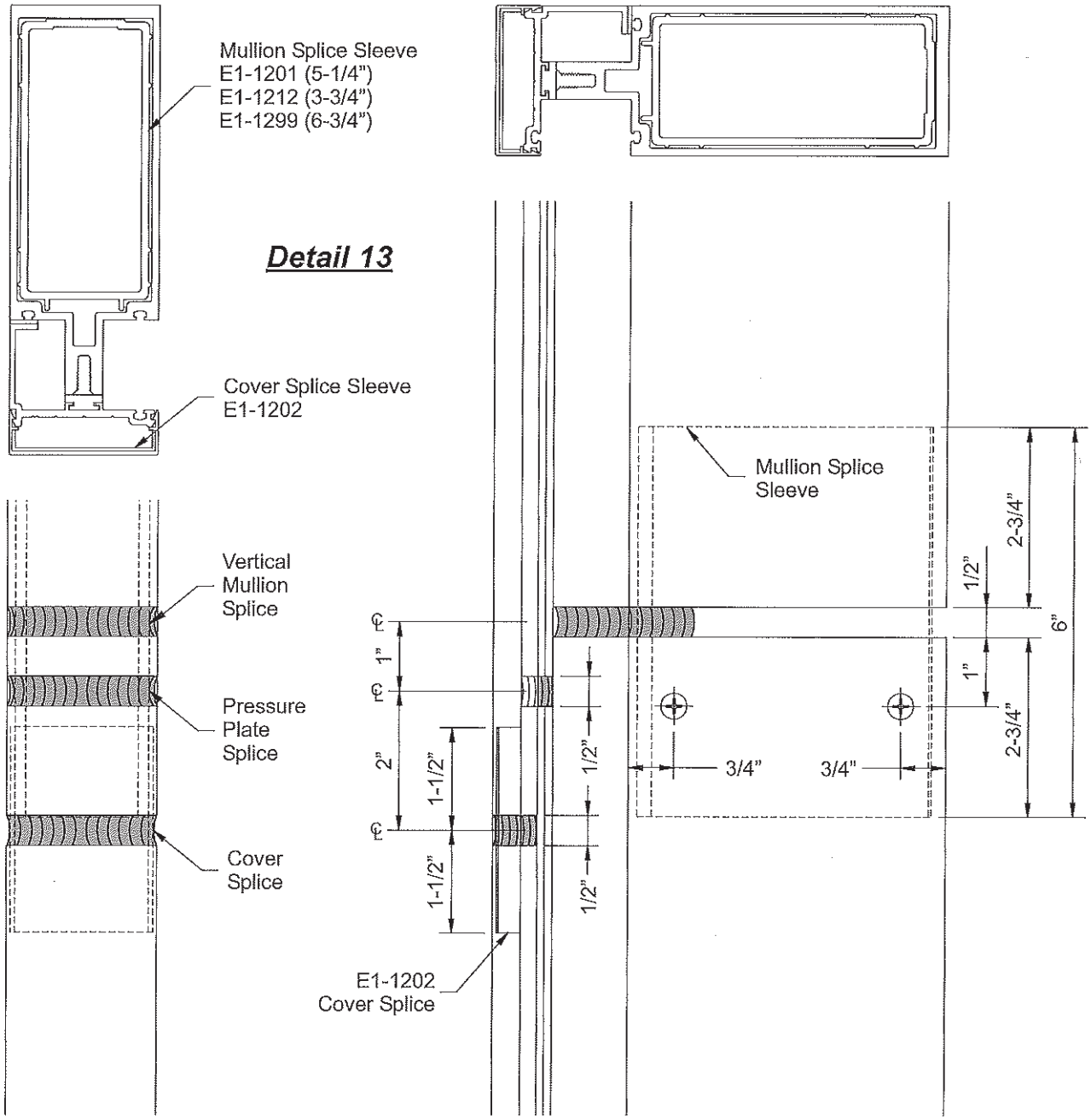
Although Spectrem 2 is not NSF registered, or previously authorized by USDA, it does meet the requirements for use in Federally inspected food processing facilities provided it is not used in areas where food is being processed, prepared or packaged. The material must also be applied in a manner which prevents any direct or indirect contamination of food. Additionally, before any food product can be placed in the area of treatment, the sealant must be allowed to cure according to manufacturer’s recommendations and the area should be sufficiently free of odor to prevent food contamination.

Spectrem 2 may be used in registered establishments operating under the **Canadian Food Inspection Agency**. The Canadian Food Inspection Agency has approved Spectrem 2 for use in CFIA regulated facilities for situations involving non food contact.

FRAME INSTALLATION

STEP 10
TYPICAL VERTICAL SPLICE

Stagger Mullion, Pressure Plate, and Cover Splice Joints as Shown Below.



FRAME INSTALLATION

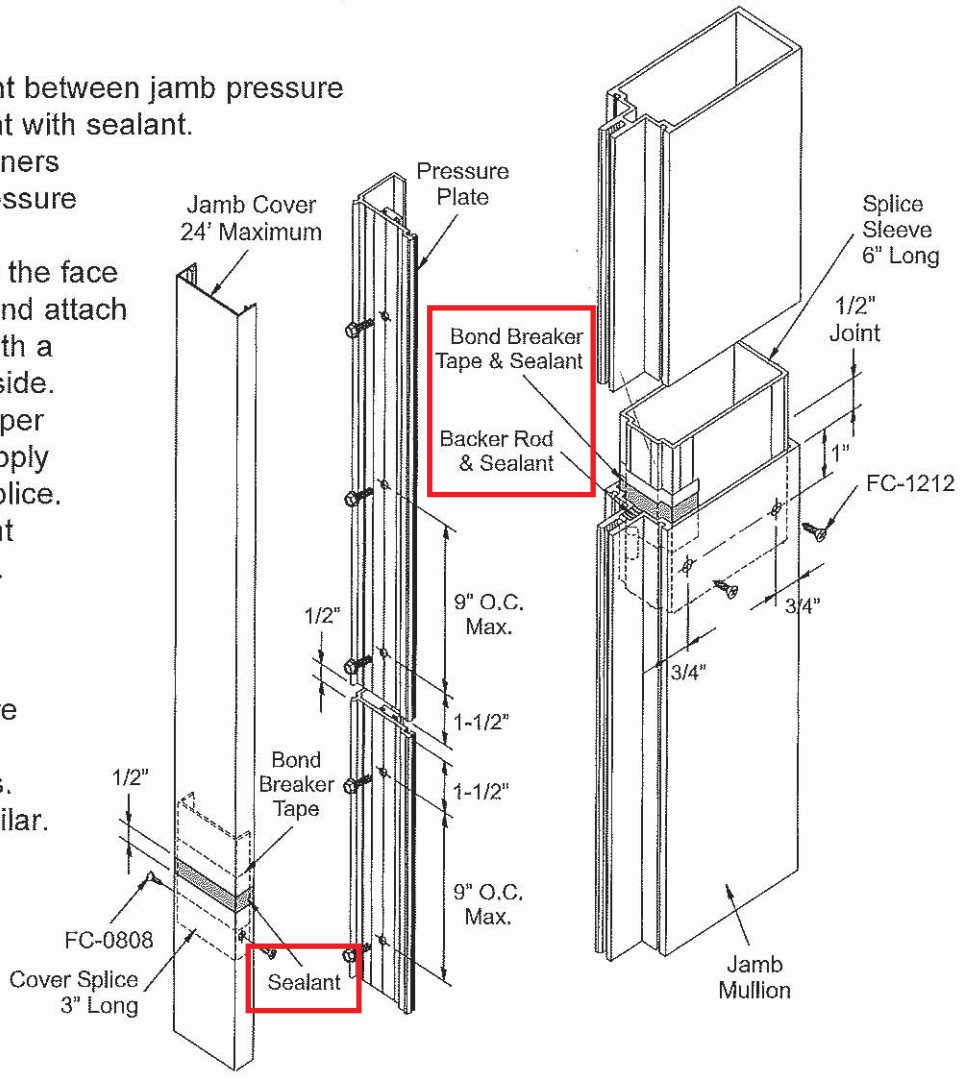
STEP 10 (Continued)
TYPICAL VERTICAL SPLICE

-Clean all surfaces as recommended by sealant manufacturer.
-Apply bond breaker tape to the face of the splice sleeve at its midpoint (3" from top or bottom).
-Lower the splice sleeve into top of lower mullion 2-3/4" and attach with two FC-1212 fasteners on both sides of the mullion. Screws should be installed 3/4" from the front and back of mullion and 1" down from the top.
-When using 1" glazing jamb mullions, stuff a small piece of backer rod 1/2" down the cavity behind mullion tongue and pump in sealant to fill the cavity.
-Apply non-curing sealant to the face of splice sleeve on the upper half.
-Carefully slide the upper mullion down onto the splice sleeve and place a 1/2" temporary shim between the mullions to properly locate them.
-Secure the upper mullion to the mid anchors and remove the temporary shims.
-Apply and tool sealant to the face and sides of the splice sleeve to create a water tight joint.

-Leave a 1/2" expansion joint between jamb pressure plate splices and fill the joint with sealant.
-Locate pressure plate fasteners 1-1/2" from each end of pressure plate splice as shown.
-Apply bond breaker tape to the face of the cover splice sleeve and attach it to the lower face cover with a FF-0808 fastener on each side.
-Prior to snapping on the upper portion of the face cover, apply sealant to the face of the splice.
-Leave a 1/2" expansion joint between face cover splices.

See **Details 13 & 14.**

Note: Face covers, pressure plates, and mullions are staggered at splice locations. SSG vertical splices are similar.

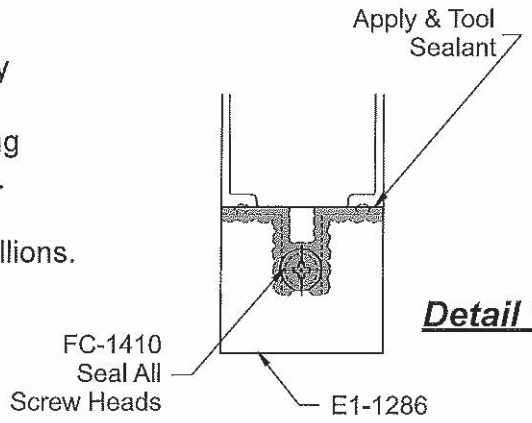


Detail 14

FRAME INSTALLATION

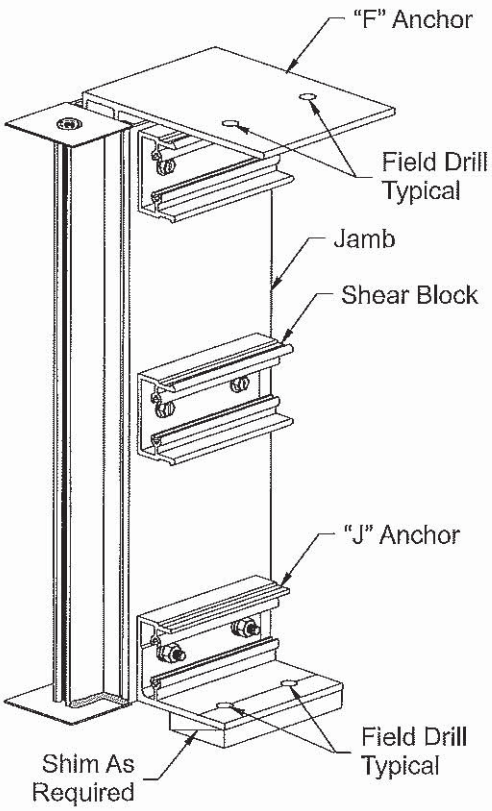
STEP 13A
JAMB/VERTICAL INSTALLATION
WITH MULLION END ANCHORS

-Clean all contact surfaces as recommended by sealant manufacturer.
-Apply sealant into the screw raceway and along the front edge of the jamb mullion at each end.
-Prior to erecting jambs, install end caps, E1-1286 at the top and bottom of the jamb mullions.
-Apply and seal mullion end caps.
-Seal all screw heads with sealant.
See **Detail 19**.

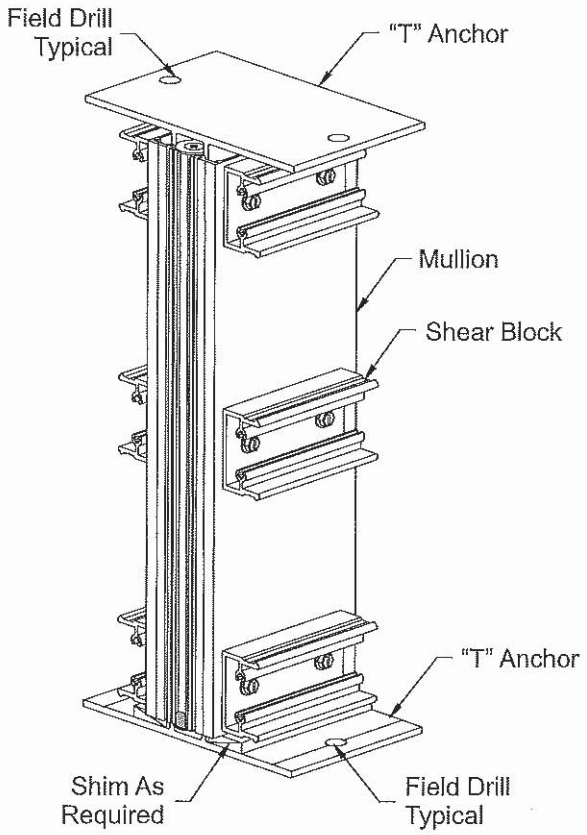


Detail 19

-Insert mullion "T" and "F" anchors into the top and bottom of the mullions before erecting them into the opening.
-Erect and locate the jamb and vertical mullions and temporarily attach them to the structure. All mullions must be installed plumb and true.
-Field drill holes in "T", "F", and "J" anchors for the appropriate anchor fasteners according to shop drawings or engineering calculations. Consult YKK if load requirements are in question.
See **Detail 20**.



Detail 20



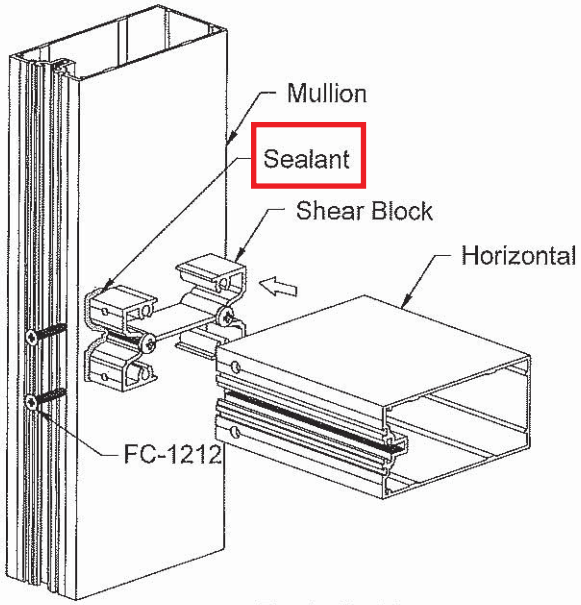
FRAME INSTALLATION

STEP 11
ATTACH HORIZONTAL MEMBERS

Note: Before applying any sealant, clean aluminum surfaces using cleaner and method approved by sealant manufacturer.

-Just prior to attaching the horizontal members to the mullion, apply sealant to the front of the shear block as shown.
-Slide the horizontal members towards the mullion and attach them to the shear blocks at each end with two FC-1212 fasteners.
-Tool and wipe away any excess sealant at the mullion to horizontal joints.
-Seal horizontal to shear block fastener heads.

See **Detail 16**.



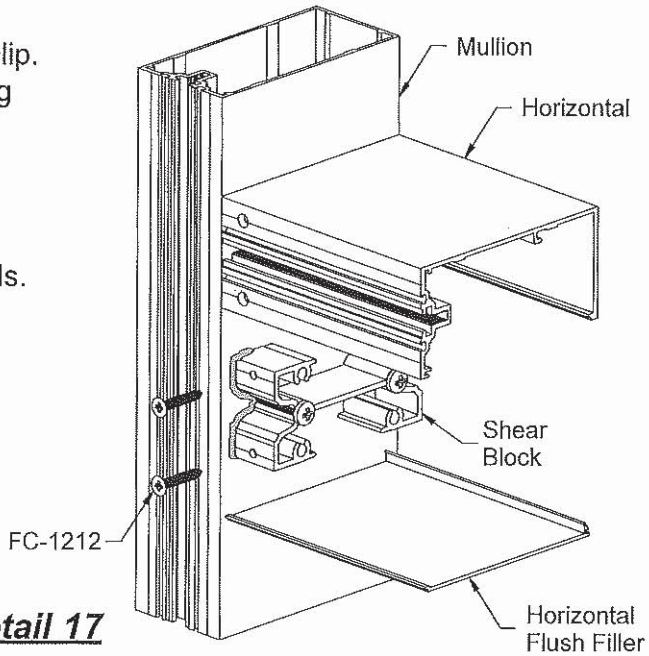
Detail 16

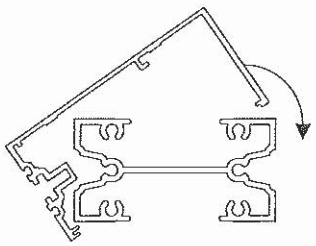
For Two Piece Horizontals:

Note: Before applying any sealant, clean aluminum surfaces using cleaner and method approved by sealant manufacturer.

-Just prior to attaching the horizontal members to the mullion, apply sealant to the front of the shear block as shown.
-Rotate the horizontal down over the shear clip. Make sure the horizontal and mullion glazing pockets are flush.
-Attach the horizontals to the shear blocks with two FC-1212 fasteners.
-Snap on the horizontal flush filler.
-Seal horizontal to shear block fastener heads.

See **Detail 17**.





Detail 17

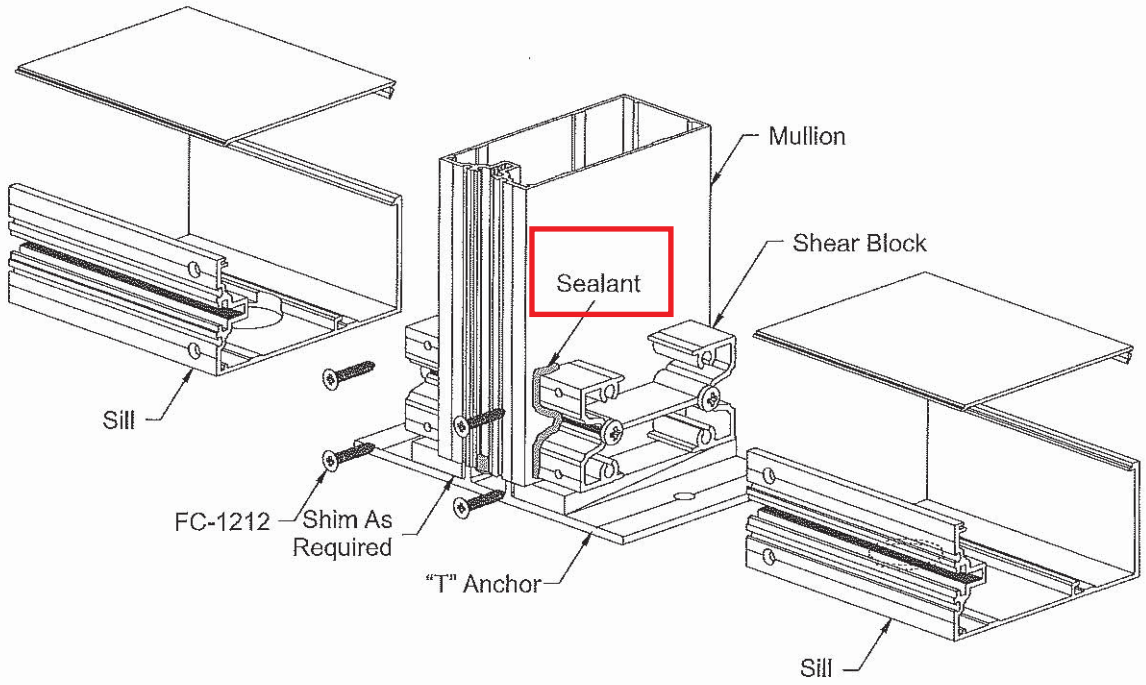
FRAME INSTALLATION

STEP 11 (Continued)
ATTACH HEAD AND SILL MEMBERS

Note: Before applying any sealant, clean aluminum surfaces using cleaner and method approved by sealant manufacturer.

-Just prior to attaching the horizontal members to the mullion, apply sealant to the front of the shear block as shown.
-Seal head/sill to shear block fastener heads.

See **Detail 18**.

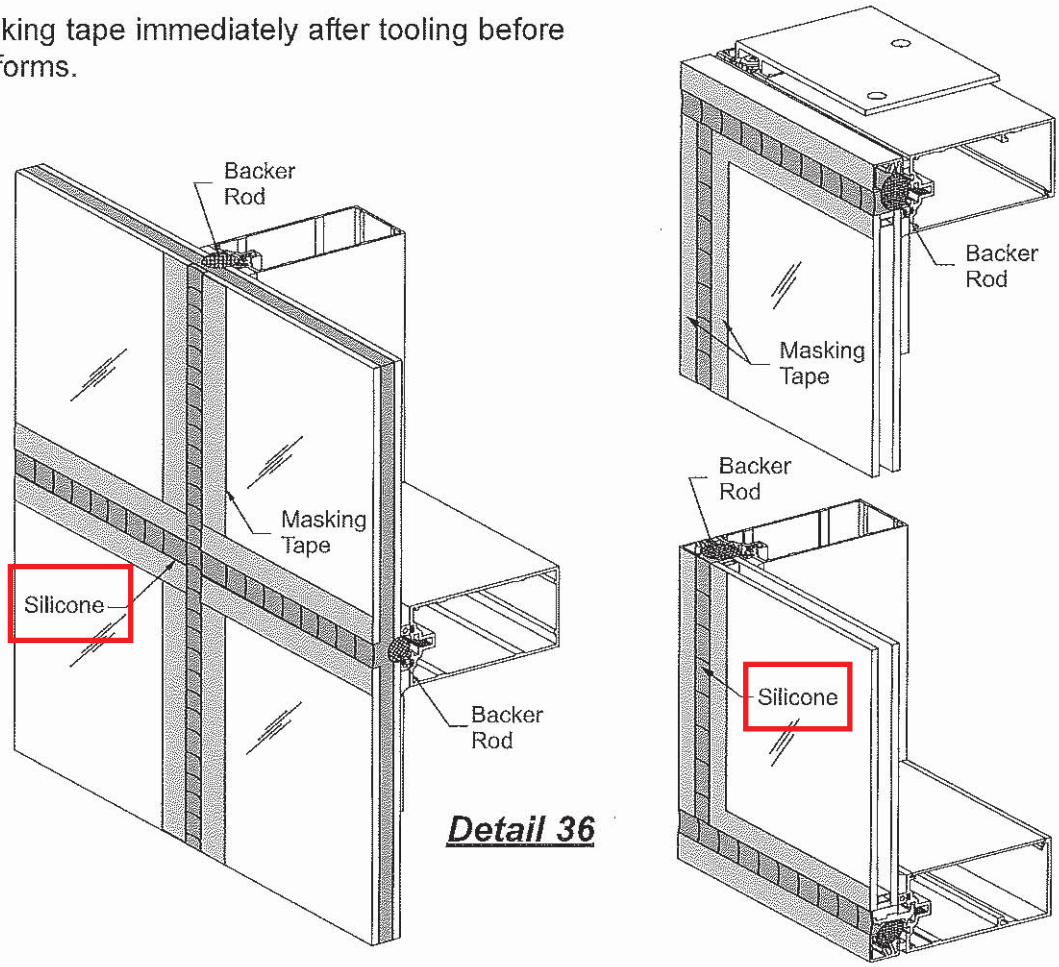


Detail 18

GLAZING

STEP 19
APPLY EXTERIOR WEATHERSEAL

-Once interior structural silicone has fully cured, remove the temporary retainer clips and insert backer rod between the lites of glass.
-Clean all silicone contact surfaces and joints with cleaner and method recommended by sealant manufacturer.
-Apply masking tape to the edges of the glass as shown in **Detail 36**.
-Apply silicone sealant into the cavity between the lites of glass. Use positive pressure so that the silicone sealant completely fills the cavity.
-Using a nylon spatula or other non-scratching implement, tool the silicone sealant immediately after running the joint. Exert positive pressure while tooling to ensure that the silicone sealant makes complete contact with all surfaces. Be careful not to remove too much silicone when tooling.
-Remove masking tape immediately after tooling before silicone skin forms.



Detail 36

Caution: Do not permit the silicone to skin over before it is tooled. Immediately remove masking tape after tooling the silicone.

CANNONDESIGN

SUBMITTAL IDENTIFICATION SHEET

To be completed by Contractor/CM

WEBSTER UNIVERSITY ISB
PROJECT NAME

8274 BIG BEND BLVD
ADDRESS

NUMBER

WEBSTER UNIVERSITY
OWNER

CANNON DESIGN
ARCHITECT / ENGINEER

Joe Voypick
SUBMITTED BY

084423-009
CONTRACTOR / CM SUBMITTAL NO.

CANNON DESIGN SUBMITTAL NO.

DRAWING / DETAIL REFERENCE

084423
SPECIFICATION SECTION / PARAGRAPH

Tremco
MANUFACTURER / SUPPLIER

ITEM / PRODUCT ID

REQUIRED DATE

PRIORITY

○ CRITICAL

ITEM BEING SUBMITTED (check only one)

- ○ Shop Drawings
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- ○ Certification / Qualifications
- ◉ Record Documents
- ○ Product Data
- ○ Coordination Drawing
- ○ Calculations
- ○ Schedules
- ○ O&M Manuals
- ○ Other _____

ITEM BEING SUBMITTED FOR (check only one)

◉ Action ○ Information Only ○ Record

REMARKS OR DEVIATIONS

PLEASE SELECT COLOR

CONTRACTOR / CM CERTIFICATION
(SUBMITTALS NOT CERTIFIED WILL BE RETURNED WITHOUT REVIEW)

PARIC

PARIC CORPORATION
SUBMITTAL STAMP

THIS SHOP DRAWING HAS BEEN REVIEWED BY PARIC CORPORATION

Subcontractor remains responsible for dimensions, quantities, coordination with other trades and compliance with contract documents.

By:
Devin D. Gates

Joe Voypick — REVIEWED BY
6/14/16 — DATE

To be completed by Reviewer

08 4423-009
CANNON DESIGN SUBMITTAL NUMBER

6/14/16
RECEIVED DATE

- ○ A. No Exceptions Taken
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- ○ B. Make Corrections Noted
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A/E COMMENTS ○ See attached sheet(s) for additional comments

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2. The TREMCO Spectrem 2 data sheet indicates that the sealant is for 2-sided structural glazing. We have 4-sided structural glazing on the project. Provide confirmation in writing that this product is approved for the 4-sided application.
3. Warranty- Provide the project specific warranty for the sealant with this submittal. Sample warranty included is blank.
2. Review or this submittal is for sealant only – we understand installation details are only intended to indicate locations of sealant.
3. Provide samples for color selection.
4. Provide information demonstrating that VOC criteria is met.

Lynn Grossman — REVIEWED BY
Digitally signed by Lynn Grossman
DN: C=US, E=lgrossman@cannondesign.com, O=CannonDesign, CN=Lynn Grossman
Date: 2016.06.27 20:00:20-05'00'
06.27.16 — DATE

77 Westport Plaza
Suite 250
St. Louis, MO 63146

TRANSMITTAL

No. 15051-0084

Paric Corporation

PROJECT: 15051-Webster University Interdisciplinary Science Building

DATE: 06/14/2016

TO: Cannon Design
1100 Clark Ave
St Louis MO 63102

RE: Silicone Sealant Product data

ATTN: Kelvin Patel

JOB: 15051

WE ARE SENDING:	SUBMITTED FOR:	ACTION TAKEN:
☐ Shop Drawings	☑ Approval	☑ Approved as Submitted
☐ Letter	☐ Your Use	☐ Approved as Noted
☐ Prints	☐ As Requested	☐ Returned After Loan
☐ Change Order	☐ Review and Comment	☐ Resubmit
☐ Plans		☐ Submit
☐ Samples	**SENT VIA:**	☐ Returned
☐ Specifications	☐ Attached	☐ Returned for Corrections
☑ Other: Product Data	☐ Separate Cover Via:	☐ Due Date:

Item	*Package*	*Code*	*Rev.*	*Copies*	*Date*	*Description*	*Status*
Submittal		084423-009	1		06/14/2016	Silicone Sealant Product data	Submitted

NOTES:

CC: Paric Corporation, Kathy Bathe

Project Coordinator: Paric Corporation, Kathy Bathe

Signed: Devin Gates