

HYDRODEFENSE™

Flood Wall



Installation Instructions/Operation and Maintenance Manual

Models:

FP-530/ FP-530 FM

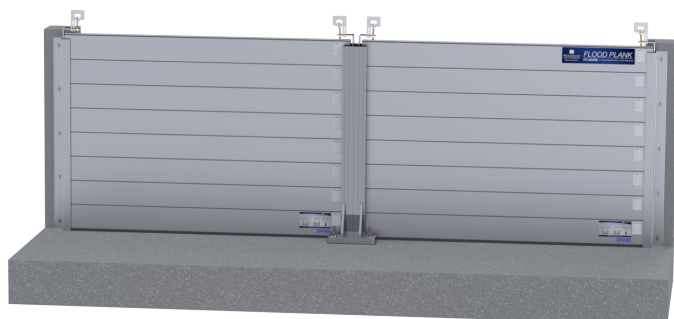


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Contact Information

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IMPORTANT! Read entire Instruction and Operations Manual to become familiar with the product.

NOTICE This product is a flood protection product. The effectiveness of the product is directly related to the proper installation and operation of this product. Failure to properly maintain this product **will** affect performance.

Publication Notice

This manual has been compiled and published covering the latest product descriptions and specifications.

The contents of this manual and the specifications of this product are subject to change without notice.

PS Flood Barriers reserves the right to make changes without notice in the specifications and materials contained herein and shall not be responsible for any damages (including consequential) caused by reliance on the materials presented, including but not limited to typographical and other errors relating to the publication.

PS Flood Barriers and/or its respective suppliers may make improvements and/or changes in the product(s)/ service(s) offered and/or the program(s) at any time without notice.

Retain this manual for future reference.

If you would like to download a copy of this manual, please go to psfloodbarriers.com

Product registration is an essential step to protecting your product, register Online at psindustries.com/contact/register-your-product/



Safety Precautions

The following icons are used throughout this Manual.

- ▲ DANGER** Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
- ▲ WARNING** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
- ▲ CAUTION** Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderated injury.
- NOTICE** Indicates manufacturer's statement of additional information.
- IMPORTANT!** Indicates a required action.
- CRITICAL** Indicates a vital component to product performance.

Product Information

NOTICE Unauthorized modification of or to the Product voids this Limited Warranty. Authorized modifications, received in writing from PS INDUSTRIES INCORPORATED, as long as the modification is accomplished in strict accordance with PS INDUSTRIES INCORPORATED's instructions, does not void warranty. To request product modifications contact PS INDUSTRIES INCORPORATED, 1150 S. 48th Street, Grand Forks, ND 58201, phone 877-446-1519, email: 4psinfo@psindustries.com

I. General Information

- A. This manual contains information regarding installation, operation, and maintenance of the PS Flood Barriers' FP-530 Flood Wall assemblies.
- B. PS Flood Barriers recommends that the owner implement a regular maintenance program to inspect the FP-530 as necessary.
- C. Conduct Inspection and Maintenance activities as described in this Operation and Maintenance Manual, at a minimum, annually and seasonally if seasonal flood conditions exist, prior to the flood season. This may require the replacement of gaskets, sealants, anchors, and accounting for all of the latching devices.
- D. No additional allowances have been included for hydrodynamic, debris impact, or wave loads, unless specifically detailed in additional documentation provided. (Refer to Approved for Construction Drawings for all included Loading).
- E. This product is equipped with compressible seals, which are not dependent on inflation devices.

▲ WARNING THIS IS A FLOOD PROTECTION BARRIER; NEVER UNLATCH OR DISASSEMBLE DURING ANY FLOOD CONDITIONS AS WATER LEAKAGE WILL OCCUR AND YOU MAY NOT BE ABLE TO RESEAL THE BARRIER.

II. Operation Guidelines

- A. Operation in a manner other than intended could result in damage or less than acceptable performance at time of need, for which the manufacturer will not be held responsible.
- B. Protect all gaskets and hardware. Always consult original Approved for Construction drawings for all installation dimensions, details, hardware and specifications.
- C. Ensure PS Flood Barriers' FP-530 Flood Wall is fully deployed and latched prior to flood waters reaching the opening.

CRITICAL Always plan for potential leakage and condensation that can occur during flooding conditions.

III. Safety Precautions

- A. Ensure opening is clear of all obstructions or debris.
- B. Do not force planks or components if they do not operate freely.
- C. Install only on surfaces capable of supporting all loading.
- D. If the water height exceeds the level of the designed Water Protective Height (WPH), excessive leakage will occur.

Product Information

▲ WARNING The flood protective barrier components MAY BE heavy, consult Approved for Construction drawings and included documents for weights and use appropriate lifting procedures and equipment.

IV. Storage Prior to Installation of Product

- A. Store materials in a dry, ventilated location. If outdoor storage is required, block materials and tarp in a tent-like arrangement, elevated above the product with open sides to allow airflow.

V. Installation Site Preparation

NOTICE Before starting site preparation and installation of the FP-530 Flood Wall, read the entire Operation and Maintenance Manual and review all installation instructions thoroughly.

- A. Clear work area of any debris.
- B. Ensure you have the necessary tools available.
- C. Obtained all required permits.
- D. Personnel: Determine the appropriate number of personnel required to perform installation and have them readily available at the project site.

▲ DANGER Ensure area below installation is blocked off from personnel during installation, and mounting surface is capable of supporting all loading. All water pressure, impact, and operating loads are transferred to the building structure. Building structural design and capacity to accept loads from flood barriers, as well as, evaluation of loads to structure is the responsibility of the owner.

VI. Operation

- A. The PS Flood Barriers' FP-530 is a specially designed Flood Wall capable of providing flood protection. The Model FP-530 Flood Wall is specially manufactured to meet the opening dimensions and Water Protective Height (WPH) of each customer's specific site requirements.
- B. These Type 2 Flood Closures/Barriers shall form essentially dry barriers of seals, allowing only slight seepage during the hydrostatic pressure conditions of flooding to the Regulatory Flood Datum (RFD) or the Design Flood Elevation (DFE). Seepage amounts will vary with conditions encountered. This issue should be addressed by the design professional and usage of sump or bilge type pumps should be used to off set potential water build up.
- C. **DUE TO THE CUSTOM NATURE OF EACH FP-530 THEY DO NOT ALL LOOK THE SAME NOR LATCH OR OPERATE EXACTLY THE SAME. REFER TO THIS DOCUMENT AND APPROVED FOR CONSTRUCTION DRAWINGS FOR YOUR SPECIFIC INSTALLATION AND OPERATION.**

Sill Installation

VII. Sill Installation

NOTICE Only use Approved for Construction Drawings.

IMPORTANT! Follow Anchor Manufacturer's technical data manual/installation instructions for installation requirements and proper installation procedures.

STEP 1. Review all Approved for Construction drawings sent with the crated Flood Plank Barrier System. The Approved for Construction Drawings are located inside a plastic bag inside the crate. Review all installation labels prior to installation.

STEP 2. Determine Sill type and exact placement as called out on Approved for Construction Drawings. All sealing surfaces must be sound, flat/level, and without blemish for best performance. Permissible tolerance is $\pm 1/16"$ per 10 foot length.

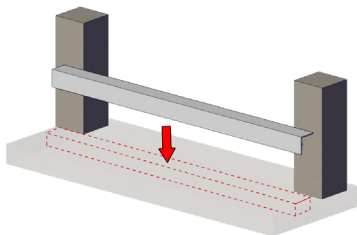
Embedded Sill Angle

STEP 3. Installation of Embedded Sill Angle

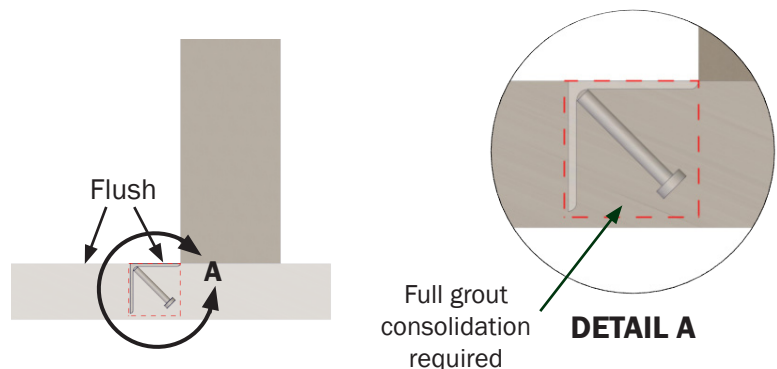
- Place Sill according to Approved for Construction Drawings.
- Grout, in accordance with grout mfg. instructions. Place embedded sill angle, level into concrete, keeping flush with concrete surface.

IMPORTANT! Allow grout to fully set before proceeding with Flood Plank Barrier installation.

**Step 3
Illustration A**



**Step 3
Illustration B**



No Sill

STEP 3. No Sill installation

- In applications where the Flood Plank Barrier gaskets contact the existing building structure, floors, etc. all surfaces must be sound, flat/level, and without blemish for best performance. Floor cracks and expansion joints will cause extreme leakage. Permissible floor tolerance is $\pm 1/16"$ per 10 foot length.

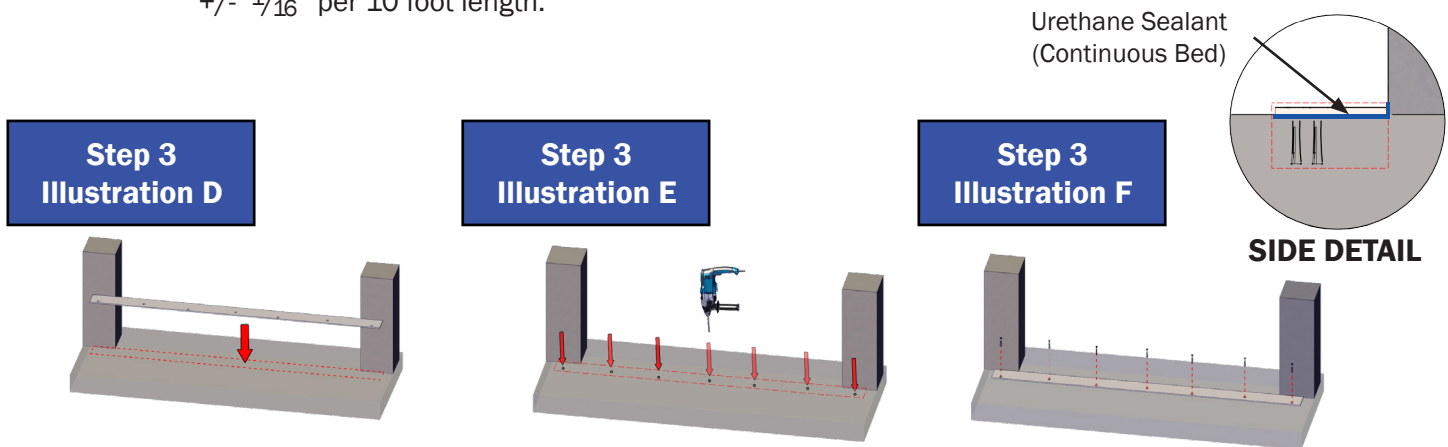
Sill Installation

Flat Surface Mounted Sill

STEP 3. Installation of Flat Surface Mounted Sill

- Place Sill according to Approved for Construction Drawings and mark anchor holes with sill in place.
- Set Sill aside and drill anchor hole diameter as required per included Anchor Specifications; refer to anchor manufacturer's technical data manual for installation limitations and requirements.
- Remove all dust and debris from the anchor holes, refer to anchor mfg. instructions.
- Place Sill in a continuous bed of urethane sealant, before anchoring, to create a watertight joint. Ensure urethane placement extends to the Sill ends and contacts the adjacent wall structure.

IMPORTANT! Sill orientation must match Approved for Construction drawings to ensure gaskets have a smooth, flat, and level surface. Shimming and/or concrete grinding may be required to ensure level sill $\pm 1/16"$ per 10 foot length.

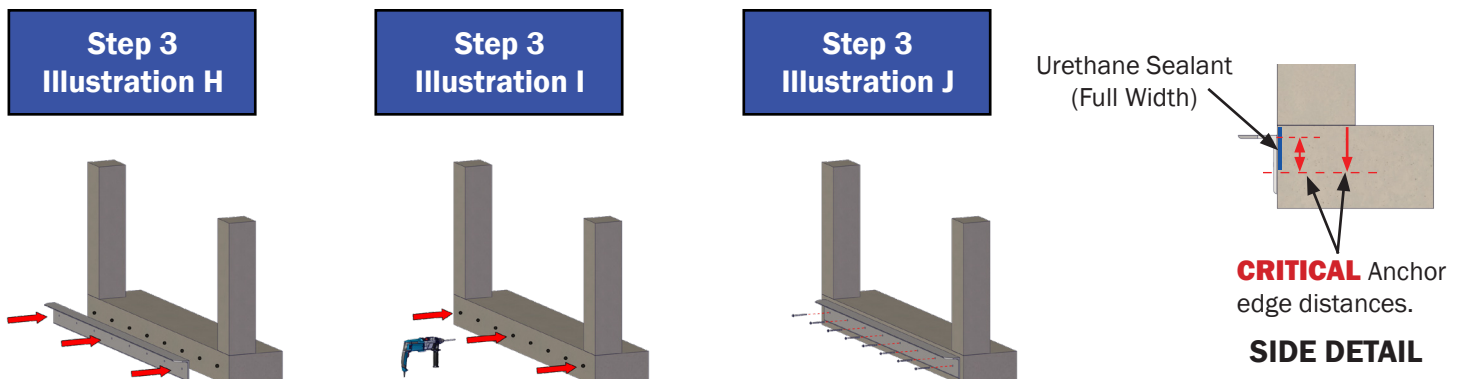


Face Mounted Sill Angle

STEP 3. Installation of Face Mounted Sill Angle

- Place Sill according to Approved for Construction Drawings and mark anchor hole locations with sill in place. Refer to required anchor edge distances specified on Approved for Construction Drawings.
- Set sill aside and drill anchor hole diameter as required per included Anchor Specifications.
- Remove all dust and debris from the anchor holes, refer to anchor mfg. instructions.
- Apply bead of urethane sealant (full width), set sill level in place, and anchor to existing structure. Ensure urethane placement extends to meet jamb at ends and contacts the adjacent wall structure.

IMPORTANT! Follow included Anchor Manufacturer's technical data manual for installation limitations and requirements. Gasket contact area should be sound, flat/level and without blemish for best gasket performance, may require shimming to keep sill level.

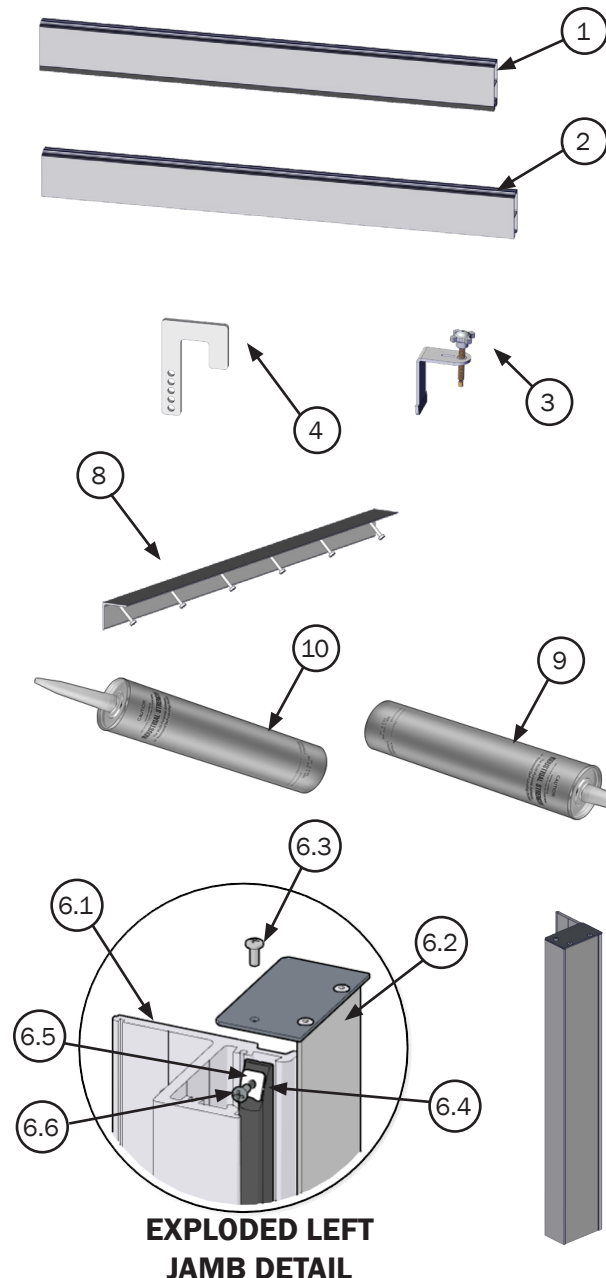


Permanent Jamb Installation

Parts List

VIII. Permanent Jamb Parts List

NOTE 1. Left and Right Jamb assemblies are shipped fully assembled. Diagram is for part identification only.



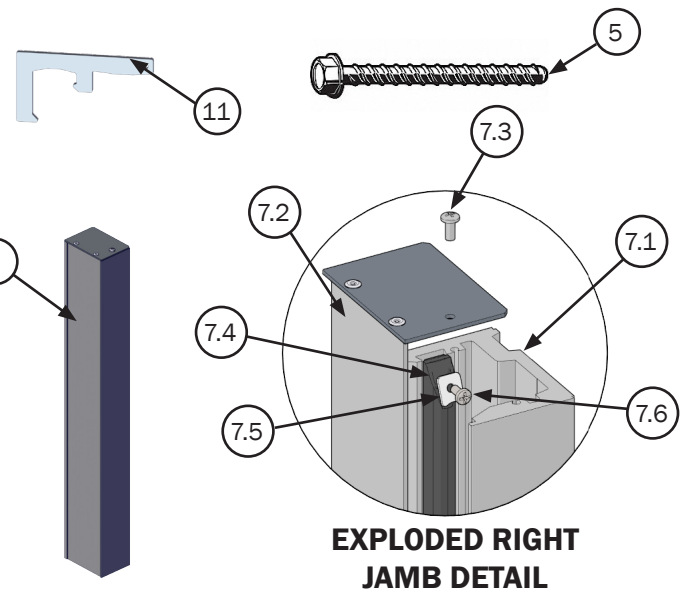
**EXPLODED LEFT
JAMB DETAIL**

PERMANENT JAMB PARTS LIST			
ITEM #	DESCRIPTION	QTY	PART #
1	FP;BOTTOM PLANK-ALUM	1	BOT P
2	FP;INTER PLANK-ALUM	*	INT P
3	FP;PLANK LATCH ANGLE ASSY	2	507391
4	FP;PLANK LATCH LOCK	2	512791
5	JAMB FASTENERS **	*	**
6	FP;LEFT SIDE JAMB ASSY **	1	JMBASMLH
7	FP;RIGHT SIDE JAMB ASSY **	1	JMBASMRH
8	FLD;FP SILL ASSY **	1	SILL ASM
9	SEALANT; POLYURETHANE, GRAY	2	509809
10	SEALANT; SWELL PASTE TYPEE 100Z	1	500507
11	FP;PLANK REMOVAL TOOL	1	512895

*Refer to Approved for Construction Drawings for quantity.

**Refer to Approved for Construction Drawings for type.

**TO ORDER PARTS CONTACT PS FLOOD BARRIERS AT
877.446.1519 or 4psinfo@psindustries.com**



**EXPLODED RIGHT
JAMB DETAIL**

LEFT JAMB PARTS LIST			
ITEM #	DESCRIPTION	QTY	PART #
6.1	LEFT JAMB MOUNT EXTRUSION	1	JMBCHNLH
6.2	FP;JAMB COVER	1	JMBCVRLH
6.3	SCREW;PANPHMACH12-24X1/2"AL	1	514437
6.4	FP;JAMB GASKET	1	513486
6.5	FP; GASKET RET. WASHER	1	509109
6.6	SCREW;PANPHMACH10-24X3/8AL	1	514438

RIGHT JAMB PARTS LIST			
ITEM #	DESCRIPTION	QTY	PART #
7.1	RIGHT JAMB MOUNT EXTRUSION	1	JMBCHNRH
7.2	FP;JAMB COVER	1	JMBCVRRH
7.3	SCREW;PANPHMACH12-24X1/2"AL	1	514437
7.4	FP;JAMB GASKET	1	513486
7.5	FP; GASKET RET. WASHER	1	509109
7.6	SCREW;PANPHMACH10-24X3/8AL	1	514438

Permanent Jamb Installation

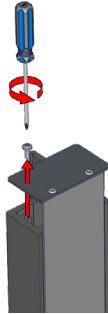
Face Mount Jamb

IX. Permanent Face Mount Jamb Installation

IMPORTANT! Follow Anchor Manufacturer's technical data manual/installation instructions for installation requirements and proper installation procedures.

STEP 1. Remove cover assembly from jambs.

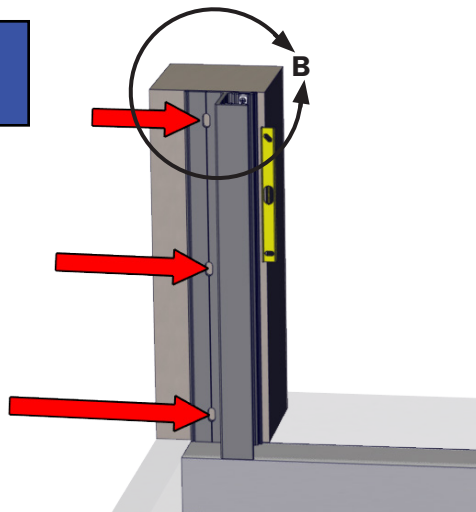
**Step 1
Illustration**



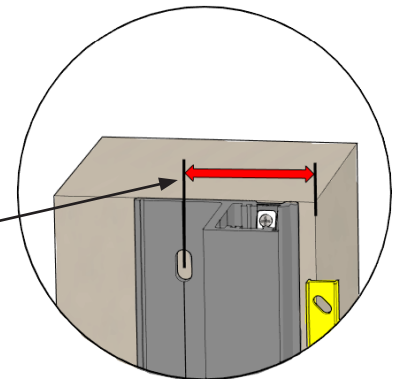
STEP 2. After proper sill installation.

- Measure and set jamb (label on back of jamb) against wall and plumb, reference from edge of opening to center of anchor holes.
- Mark anchor hole locations in jamb onto existing structure.

**Step 2
Illustration A**



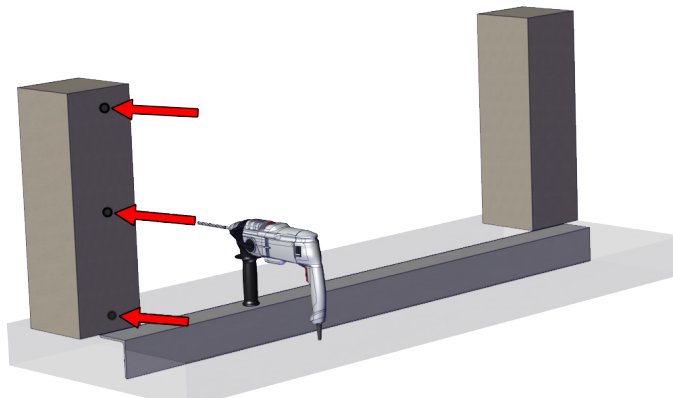
CRITICAL Anchor edge distance.



DETAIL B

STEP 3. Set jamb aside and drill holes; drill bit diameter as required per included Anchor Manufacturer's technical manual.

**Step 3
Illustration**



Permanent Jamb Installation

Face Mount Jamb

STEP 4. Remove all dust and debris from anchor holes per included Anchor Manufacturer's technical manual.

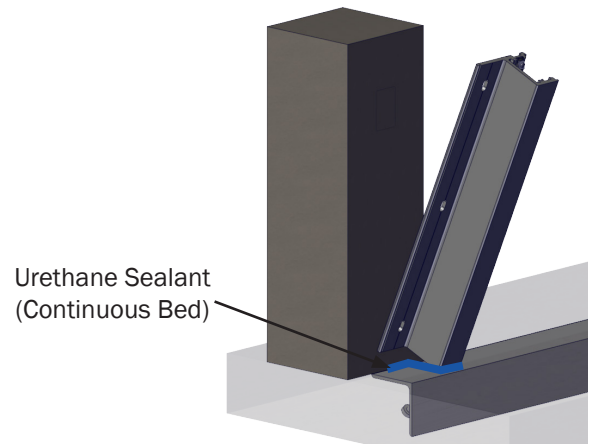
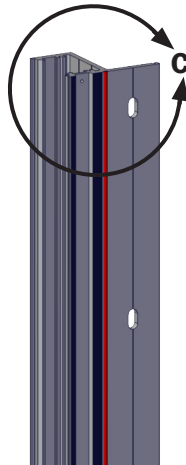
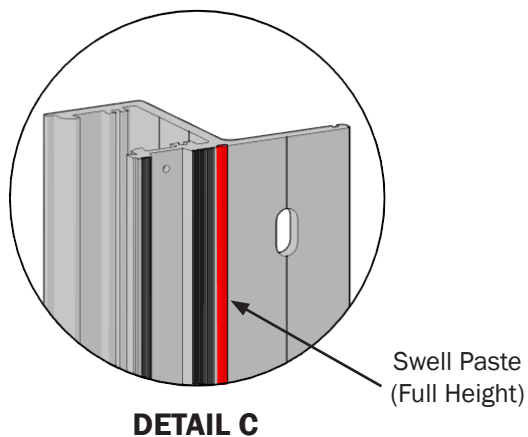
STEP 5. Before placing jamb against existing structure.

- Apply $\frac{1}{8}$ " bead of swell paste (full height), centered on back side of jamb on ribs. (See Detail C)
- Set base of jamb in a continuous bed of urethane sealant to create a watertight joint. Ensure wall is flat, smooth, and free of cracks and defects to create a watertight seal with the wall and floor.

NOTICE Use care when applying sealants to keep work area clean.

**Step 5
Illustration A**

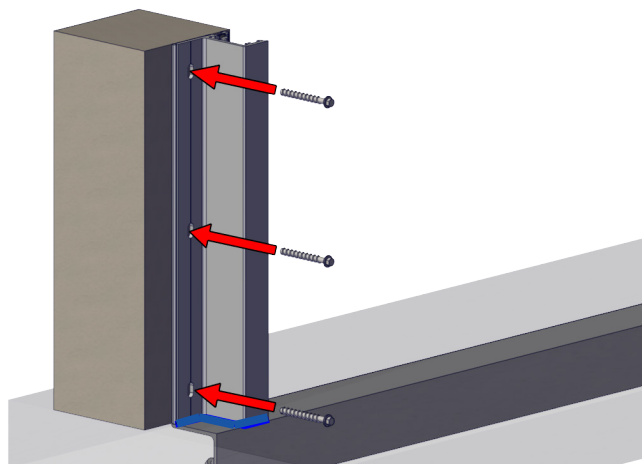
**Step 5
Illustration B**



STEP 6. Set jamb in place

- Anchor to existing structure. Do not exceed torque per included Anchor Manufacturer's technical manual.
*Torque wrench supplied by others, NOT PS Flood Barriers.

**Step 6
Illustration**



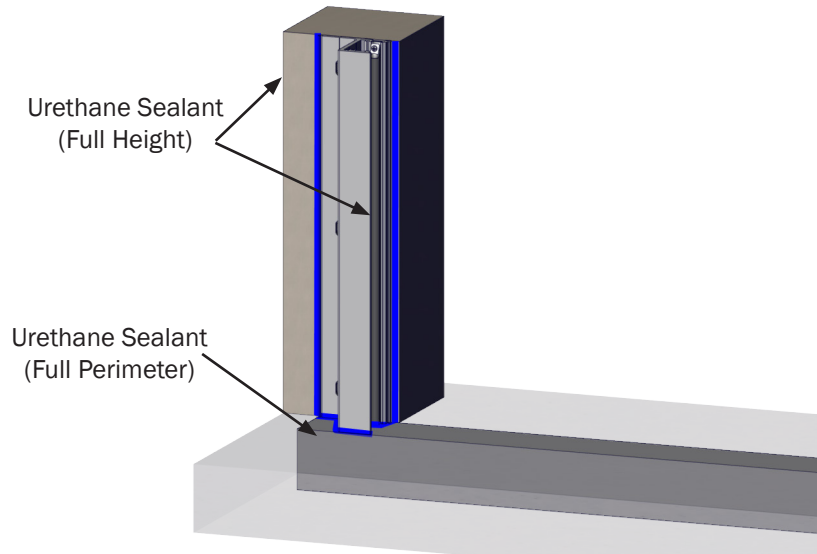
Permanent Jamb Installation

Face Mount Jamb

STEP 7. Apply urethane sealant to each side of jamb (full height) against existing structure and bottom of jamb (full perimeter) to create a watertight joint.

- a. Clean-up excess sealant that could prevent the bottom flood plank gasket from sealing to the sill.

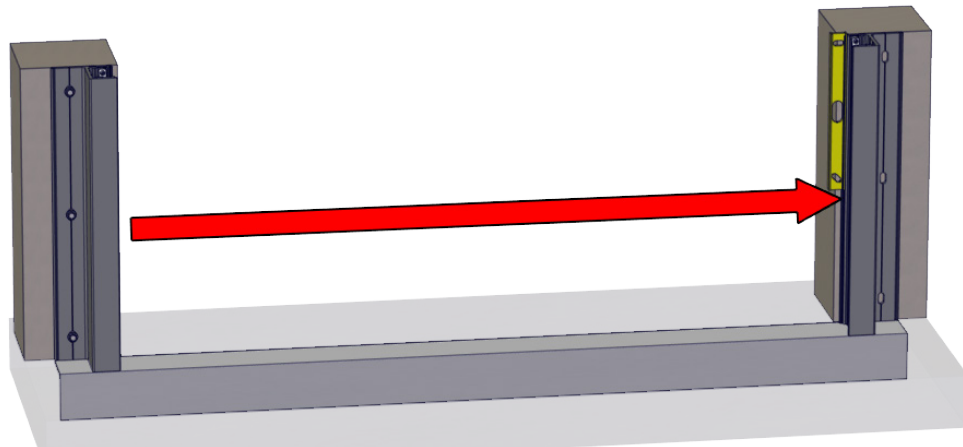
Step 7 Illustration



STEP 8. Installation of second jamb

- a. Measure from installed jamb to locate second jamb, as shown in Illustration.
- b. Repeat Steps 1 through Steps 7 for opposite Jamb. See Approved for Construction Drawings for dimensions.

Step 8 Illustration



NOTICE PS Flood Barriers recommends completing installation steps fully, testing, and completing a Training Drill for activation prior to storage of Flood Barrier System.

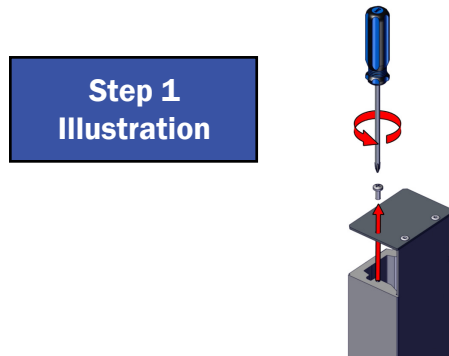
Permanent Jamb Installation

In-Between Jamb Mount

X. Permanent In-Between Jamb Mount Installation

IMPORTANT! Follow Anchor Manufacturer's technical data manual/installation instructions for installation requirements and proper installation procedures.

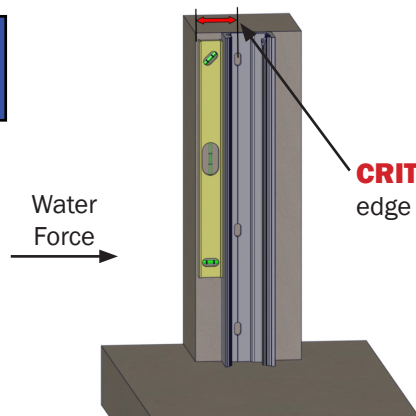
STEP 1. Remove cover assembly from jambs.



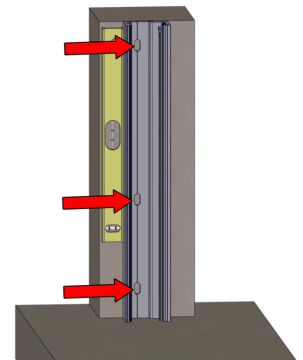
STEP 2. After proper sill installation.

- Measure and set jamb against wall and plumb, reference from edge of opening to center of anchor holes. Required Anchor edge distances specified in Approved for Construction Drawings.
- Transfer anchor hole locations from jamb onto existing structure.

Step 2
Illustration A

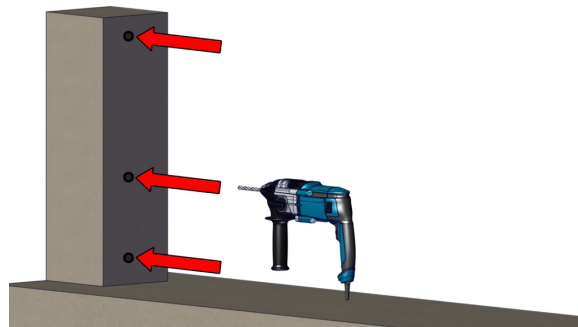


Step 2
Illustration B



STEP 3. Set jamb aside and drill holes; drill bit diameter as required per included Anchor Manufacturer's technical manual.

Step 3
Illustration



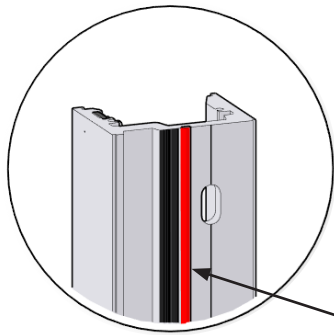
STEP 4. Remove all dust and debris from anchor holes per included Anchor Manufacturer's technical manual.

Permanent Jamb Installation

In-Between Jamb Mount

STEP 5. Before placing jamb against existing structure.

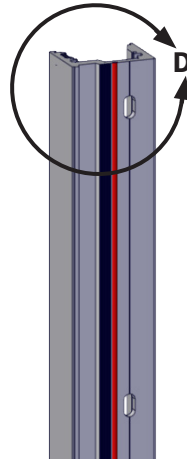
- a. Apply 1/8" bead of swell paste (full height), centered on back side of jamb on ribs. (See Detail D)
- a. Set base of jamb in a continuous bed of urethane sealant to create a watertight joint. Ensure wall is flat, smooth, and free of cracks and defects to create a watertight seal with the wall and floor.



DETAIL D

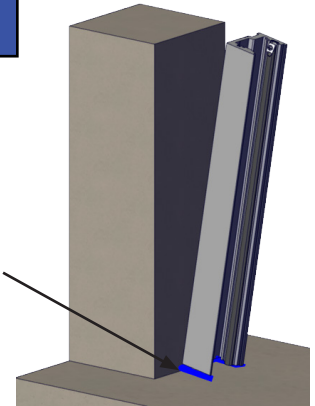
Swell Paste
(Full Height)

**Step 5
Illustration A**



**Step 5
Illustration B**

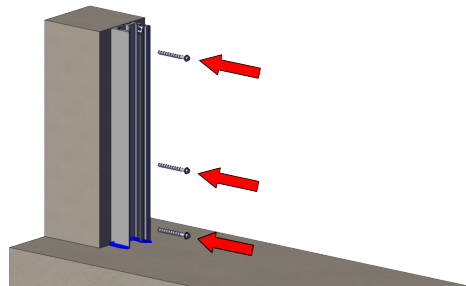
Urethane Sealant
(Continuous Bed)



STEP 6. Set jamb in place

- a. Anchor to existing structure. Do not exceed torque per included Anchor Manufacturer's technical manual.
*Torque wrench supplied by others, NOT PS Flood Barriers.

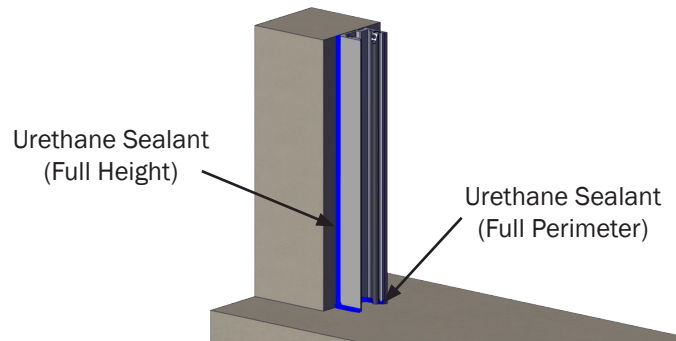
**Step 6
Illustration**



STEP 7. Apply urethane sealant to each side of jamb (full height) against existing structure and bottom of jamb (full perimeter) to create a watertight joint.

- a. Clean-up excess sealant that could prevent the bottom flood plank gasket from sealing to the sill.

**Step 7
Illustration**



Urethane Sealant
(Full Height)

Urethane Sealant
(Full Perimeter)

STEP 8. Installation of second jamb

- a. Repeat Steps 1 through Steps 7 for opposite Jamb. See Approved for Construction Drawings for dimensions.

NOTICE PS Flood Barriers recommends completing installation steps fully, testing, and completing a Training Drill for activation prior to storage of Flood Barrier System.

Removable Jamb Installation

Parts List

XI. Removable Jamb Parts List

NOTE 1. Left and Right Jamb assemblies are shipped fully assembled. Diagram is for part identification only.

REMOVABLE JAMB PARTS LIST			
ITEM #	DESCRIPTION	QTY	PART #
1	FP;BOTTOM PLANK-ALUM	1	BOT P
2	FP;INTER PLANK-ALUM	*	INT P
3	FP;PLANK LATCH ANGLE ASSY	2	507391
4	FP;PLANK LATCH LOCK	2	512791
5	FP;LEFT SIDE JAMB ASSY **	1	JMBASMLH
6	FP;RIGHT SIDE JAMB ASSY **	1	JMBASMRH
7	FLD;FP SILL ASSY **	1	SILL ASM
8	WS;SEALANT;REMOVABLE	2	512654
9	FP;PLANK REMOVAL TOOL	1	501947
10	JAMB ANCHOR SYSTEMS **	*	**

*Refer to Approved for Construction Drawings for quantity.
 **Refer to Approved for Construction Drawings for type.

**TO ORDER PARTS CONTACT PS FLOOD BARRIERS AT
 877.446.1519 or 4psinfo@psindustries.com**

EXPLODED LEFT JAMB DETAIL

EXPLODED RIGHT JAMB DETAIL

LEFT JAMB PARTS LIST			
ITEM #	DESCRIPTION	QTY	PART #
5.1	LEFT JAMB MOUNT EXTRUSION	1	JMBCHNLH
5.2	FP;JAMB COVER	1	JMBCVRLH
5.3	SCREW;PANPHMACH12-24X1/2"AL	1	514437
5.4	FP;JAMB GASKET	1	513486
5.5	FP; GASKET RET. WASHER	1	509109
5.6	SCREW;PANPHMACH10-24X3/8AL	1	514438
5.7	FP;WALL GASKET	1	512655

RIGHT JAMB PARTS LIST			
ITEM #	DESCRIPTION	QTY	PART #
6.1	RIGHT JAMB MOUNT EXTRUSION	1	JMBCHNRH
6.2	FP;JAMB COVER	1	JMBCVRRH
6.3	SCREW;PANPHMACH12-24X1/2"AL	1	514437
6.4	FP;JAMB GASKET	1	513486
6.5	FP; GASKET RET. WASHER	1	509109
6.6	SCREW;PANPHMACH10-24X3/8AL	1	514438
6.7	FP;WALL GASKET	1	512655

Removable Jamb Installation

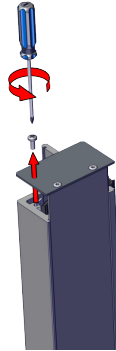
Face Mount Jamb

XII. Removable Face Mount Jamb Installation

IMPORTANT! Follow Anchor Manufacturer's technical data manual/installation instructions for installation requirements and proper installation procedures.

STEP 1. Remove cover assembly from jambs.

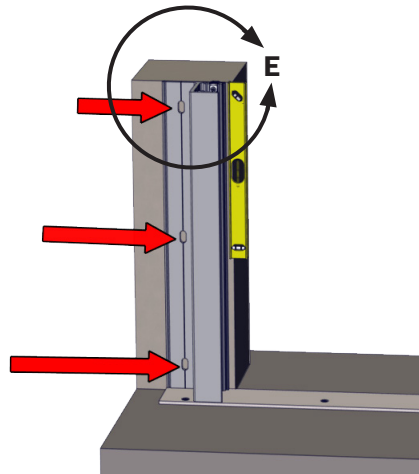
Step 1 Illustration



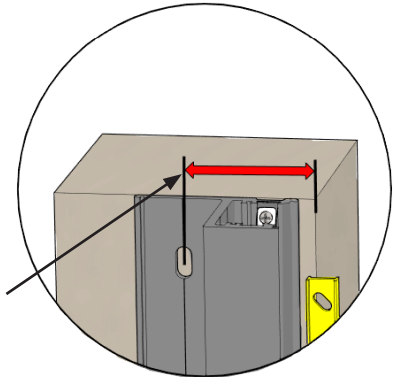
STEP 2. After proper sill installation.

- Measure and set jamb against wall and plumb, reference from edge of opening to center of anchor holes. Required Anchor edge distances specified in Approved for Construction Drawings.
- Mark anchor hole locations from jamb onto existing structure.

Step 2 Illustration



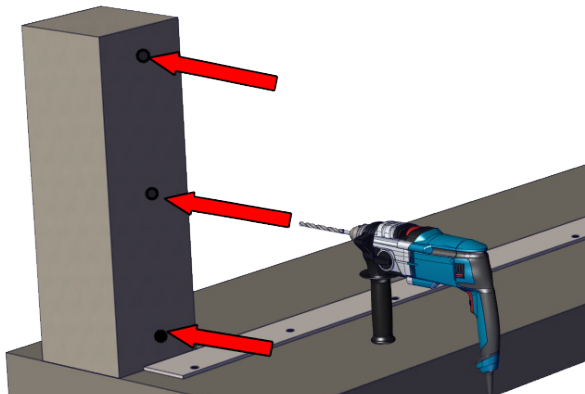
CRITICAL Anchor edge distance.



DETAIL E

STEP 3. Set jamb aside and drill holes; drill bit diameter as required per included Anchor Manufacturer's technical manual.

Step 3 Illustration



Removable Jamb Installation

Face Mount Jamb

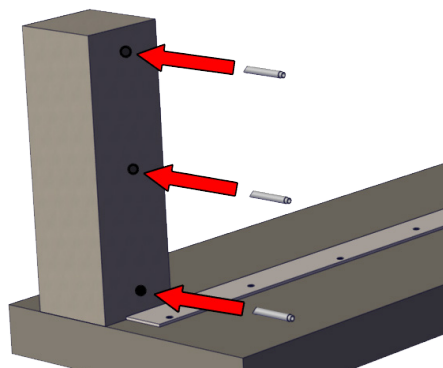
STEP 4. Remove all dust and debris from anchor holes [per included Anchor Manufacturer's technical manual](#).

STEP 5. Installation of internally threaded anchors. [Follow Anchor Manufacturer's technical data manual/ installation instructions for installation requirements and proper installation procedures](#).

- a. Fill anchor holes with supplied anchor epoxy before inserting post-installed internally threaded inserts. Nylon set screws (not shown) are provided for inserts when jams are not in use.
- b. Clean-up excess anchor epoxy.

IMPORTANT! Let epoxy fully set before proceeding: [required time as specified per Anchor Manufacturer's technical manual](#).

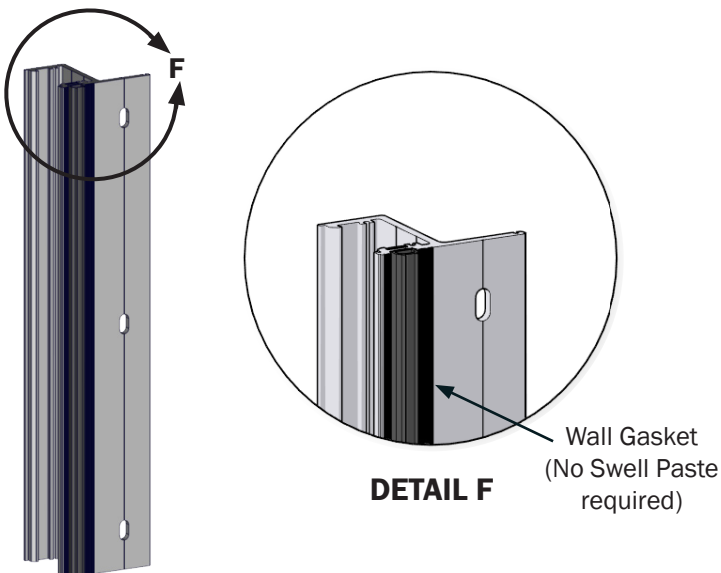
Step 5 Illustration



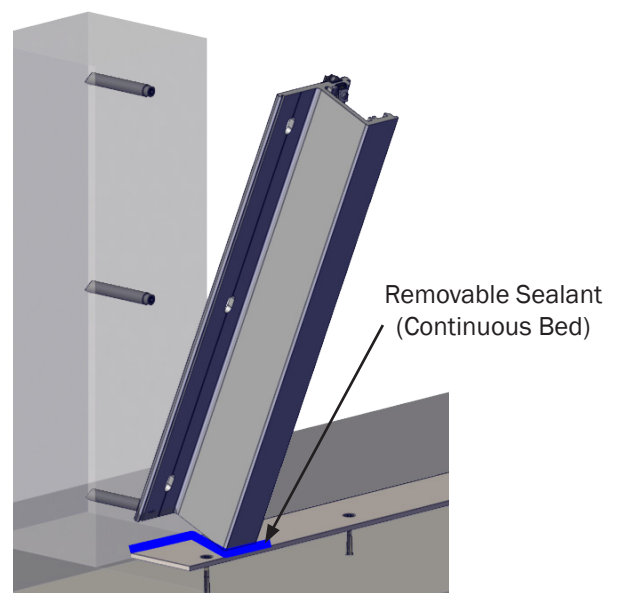
STEP 6. Before placing jamb against existing structure.

- a. Set base of jamb in a continuous bed of removable sealant to create a watertight joint. Ensure wall is flat, smooth, and free of cracks and defects to allow the compression gasket (Detail F) to create a watertight seal with the wall and floor.

Step 6 Illustration A



Step 6 Illustration B



Removable Jamb Installation

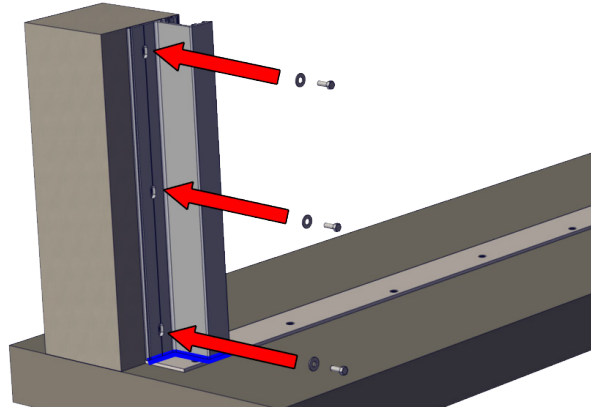
Face Mount Jamb

STEP 7. Set jamb in place

- Completely thread-in supplied bolts into post-installed thread inserts. Do not exceed torque per Anchor Manufacturer's technical manual.

*Torque wrench supplied by others, NOT PS Flood Barriers.

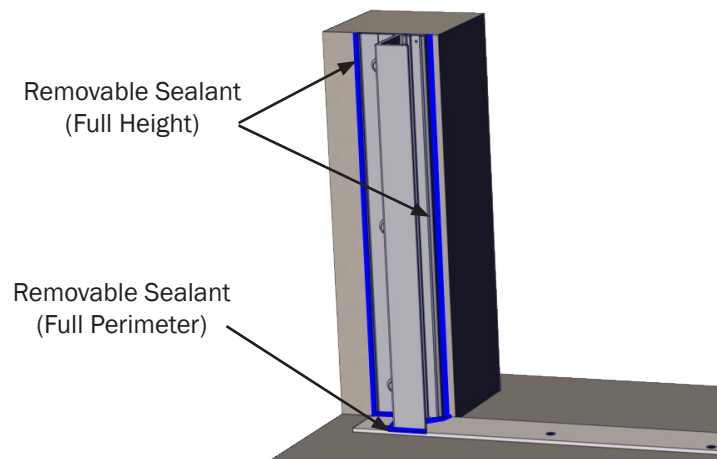
Step 7 Illustration



STEP 8. Apply removable sealant to each side of jamb (full height) against existing structure and bottom of jamb (full perimeter) to create a watertight joint.

- Clean-up excess sealant that could prevent the bottom flood plank gasket from sealing to the sill.

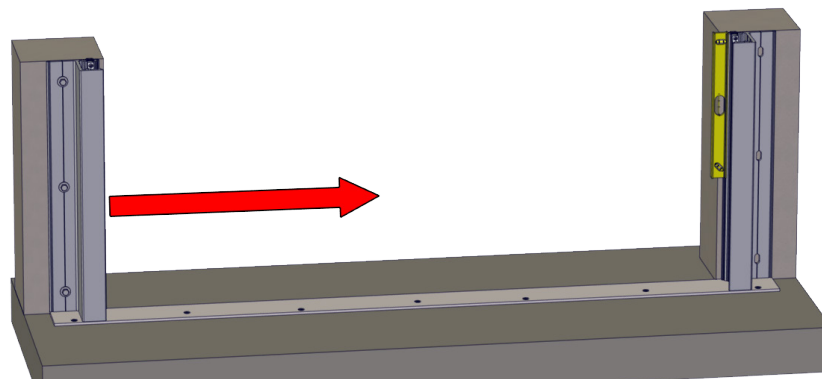
Step 8 Illustration



STEP 9. Installation of second jamb

- Measure from installed jamb to locate second jamb, as shown in Illustration.
- Repeat Steps 1 through Steps 8 for opposite Jamb. See Approved for Construction Drawings for dimensions.

Step 9 Illustration



NOTICE PS Flood Barriers recommends completing installation steps fully, testing, and completing a Training Drill for activation prior to storage of Removable Flood Barrier System.

Removable Jamb Installation

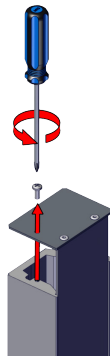
In-Between Jamb Mount

XIII. Removable In-Between Jamb Mount Installation

IMPORTANT! Follow Anchor Manufacturer's technical data manual/installation instructions for installation requirements and proper installation procedures.

STEP 1. Remove cover assembly from jambs.

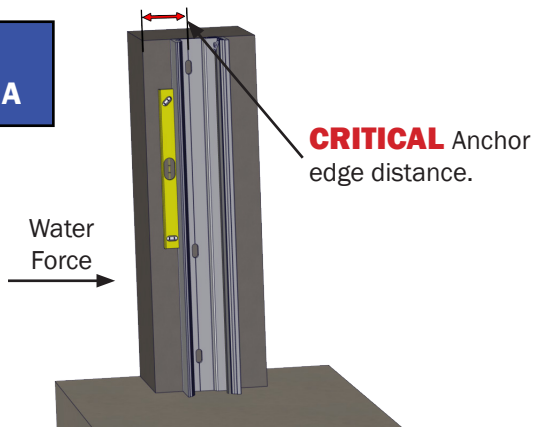
Step 1 Illustration



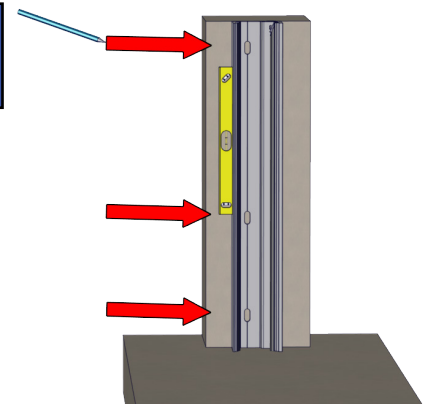
STEP 2. After proper sill installation.

- Measure and set jamb against wall and plumb, reference from edge of opening to center of anchor holes. Required Anchor edge distances specified in Approved for Construction Drawings.
- Transfer anchor hole locations in jamb onto existing structure.

Step 2 Illustration A

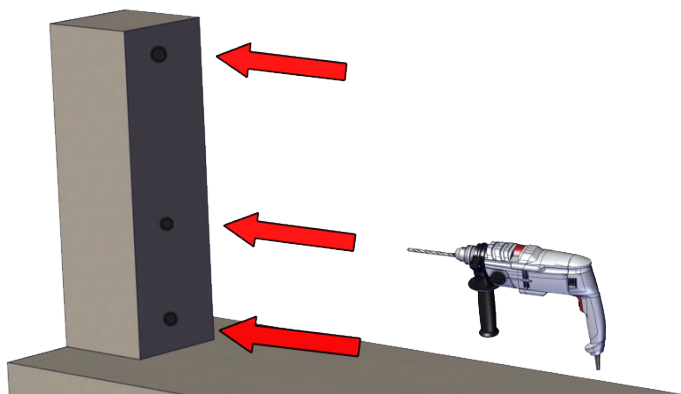


Step 2 Illustration B



STEP 3. Set jamb aside and drill holes; drill bit diameter as required per included Anchor Manufacturer's technical manual.

Step 3 Illustration



Removable Jamb Installation

In-Between Jamb Mount

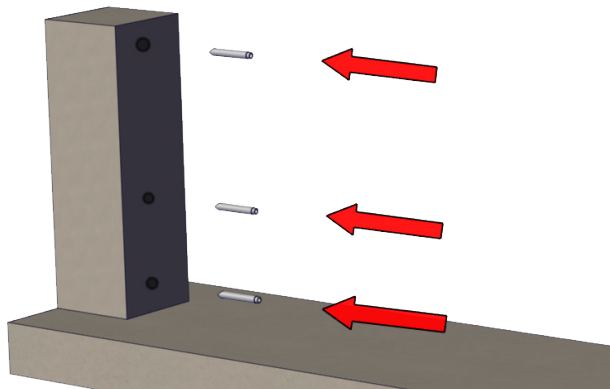
STEP 4. Remove all dust and debris from anchor holes per included Anchor Manufacturer's technical manual.

STEP 5. Installation of internally threaded anchors. Follow Anchor Manufacturer's technical data manual/ installation instructions for installation requirements and proper installation procedures.

- a. Fill anchor holes with supplied anchor epoxy before inserting post-installed internally threaded inserts.
Nylon set screws (not shown) are provided for inserts when jambs are not in use.
- b. Clean-up excess anchor epoxy.

IMPORTANT! Let epoxy fully set before proceeding: required time as specified per Anchor Manufacturer's technical manual.

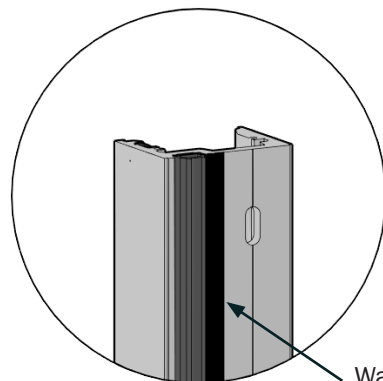
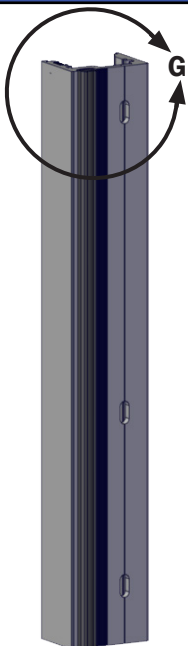
**Step 5
Illustration**



STEP 6. Before placing jamb against existing structure.

- a. Set base of jamb in a continuous bed of removable sealant to create a watertight joint. Ensure wall is flat, smooth, and free of cracks and defects to allow the compression gasket (Detail G) to create a watertight seal with the wall and floor.

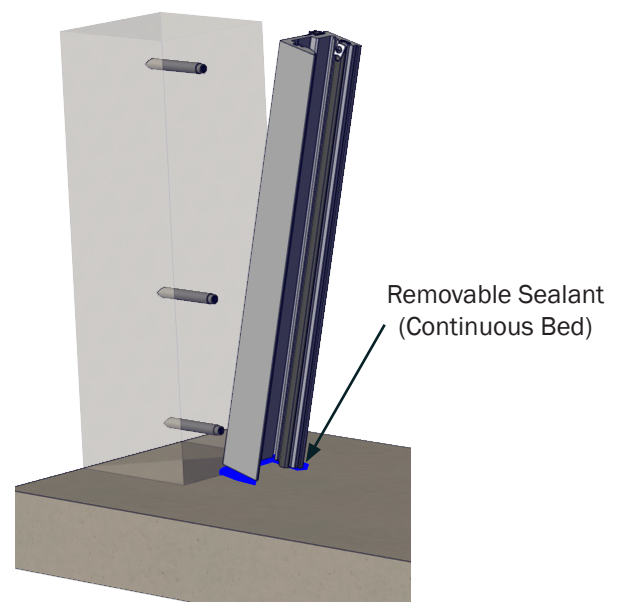
**Step 6
Illustration A**



DETAIL G

Wall Gasket
(No Swell Paste required)

**Step 6
Illustration B**



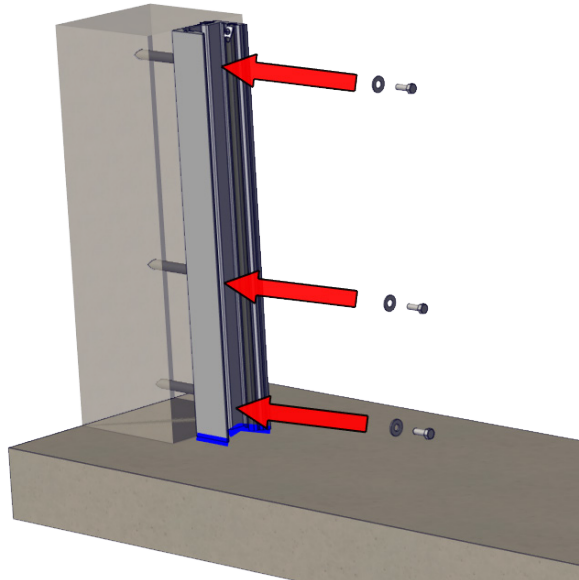
Removable Jamb Installation

In-Between Jamb Mount

STEP 7. Set jamb in place

- a. Completely thread-in supplied bolts into post-installed thread inserts.

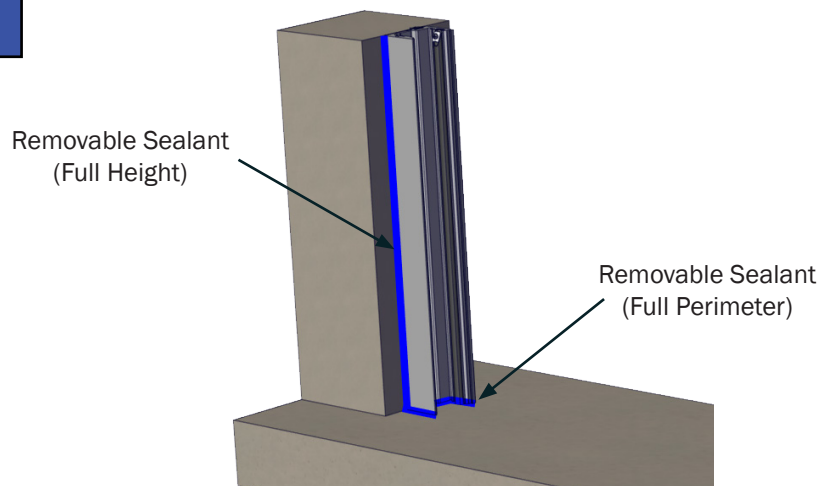
Step 7 Illustration



STEP 8. Apply removable sealant to each side of jamb (full height) against existing structure and bottom of jamb (full perimeter) to create a watertight joint.

- a. Clean-up excess sealant that could prevent the bottom flood plank gasket from sealing to the sill.

Step 8 Illustration



STEP 9. Installation of second jamb

- a. Repeat Steps 1 through Steps 8 for opposite Jamb. See Approved for Construction Drawings for dimensions.

NOTICE PS Flood Barriers recommends completing installation steps fully, testing, and completing a Training Drill for activation prior to storage of Removable Flood Barrier System.

Mullion Installation

A-Frame Embedded Mullion Receiver

XIV. A-Frame Embedded Mullion Receiver Installation

NOTICE Only use Approved for Construction Drawings.

STEP 1. Review all Approved for Construction drawings sent with the crated Flood Wall.

The Approved for Construction Drawings are located inside a plastic bag inside the crate. Review all installation labels prior to installation.

STEP 2. Determine sill/embed types and exact placements as called out on Approved for Construction Drawings. All sealing surfaces must be sound, flat/level, and without blemish for best performance.

Permissible tolerance is $\pm 1/16"$ per 10 foot length. Ensure Embedded Mullion Receiver is level to within $1/32"$ and flush with adjacent sealing surfaces.

STEP 3.

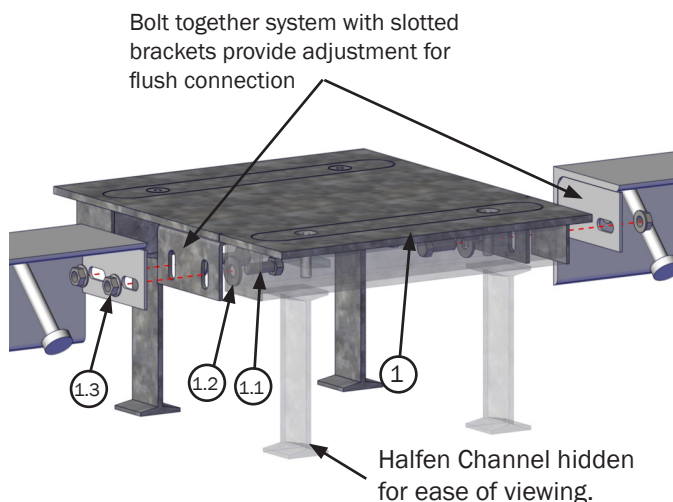
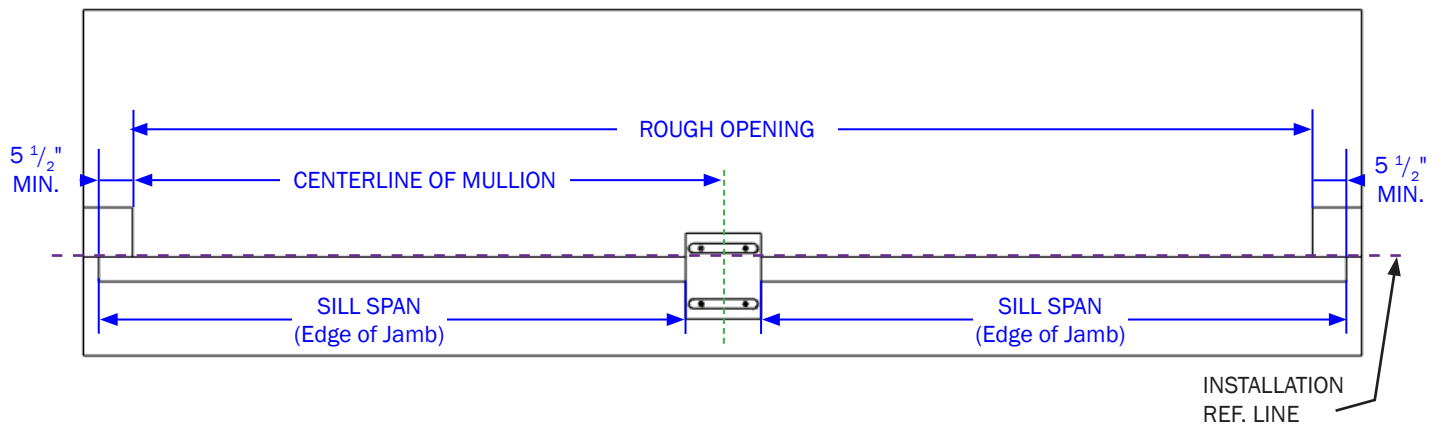
a. Locate Installation Reference Line and mark embed locations on concrete surface, as detailed on **Embedded Mullion Receiver Install Reference**.

b. Connect embedded mullion receiver to sills with included hardware.

Embedded mullion receiver includes notch for alignment with embedded sill edge.

Flood Wall Install Reference

Refer to Approved for Construction Drawings for exact dimensions.



A-FRAME EMBEDDED MULLION RECEIVER PARTS			
BALLOON	PART #	DESCRIPTION	QUANTITY
1	514382	FP;DBP MULLION EMBED ASM-GALV	1
1.1	500400	BOLT;HEX3/8"16X1GRZN	4
1.2	501947	WASHER;FLAT 3/8"ZN	4
1.3	501085	NUT;FLANGE 3/8"16ZN-CASE HARD	4
NOT SHOWN	514261	L-KEY;HEX 7/32"	1

Mullion Installation

A-Frame Embedded Mullion Receiver

STEP 4.

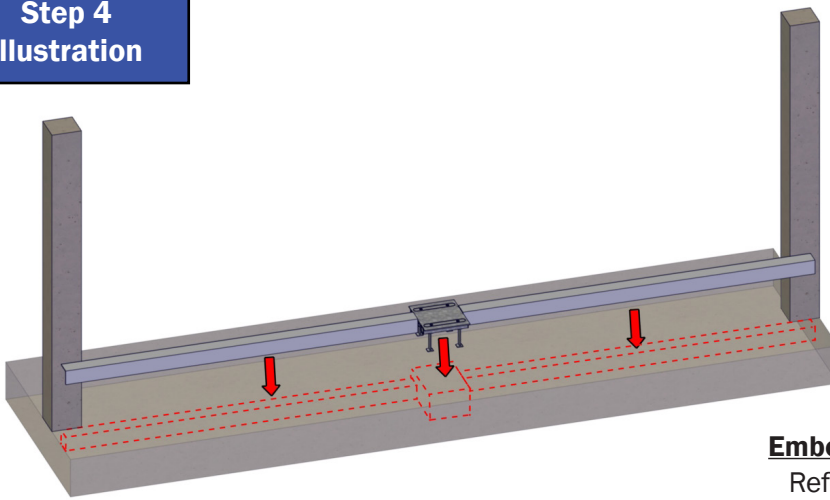
- Place embedded mullion receiver and sills according to Approved for Construction Drawings.
- Fill concrete, in accordance with minimum requirements called out for embedded mullion receiver, level into concrete, keeping flush with concrete surface.

Required embedded mullion receiver edge distances specified in Approved for Construction Drawings.

IMPORTANT! Follow included Anchor Manufacturer's technical data manual/installation instructions for installation requirements and proper installation procedures.

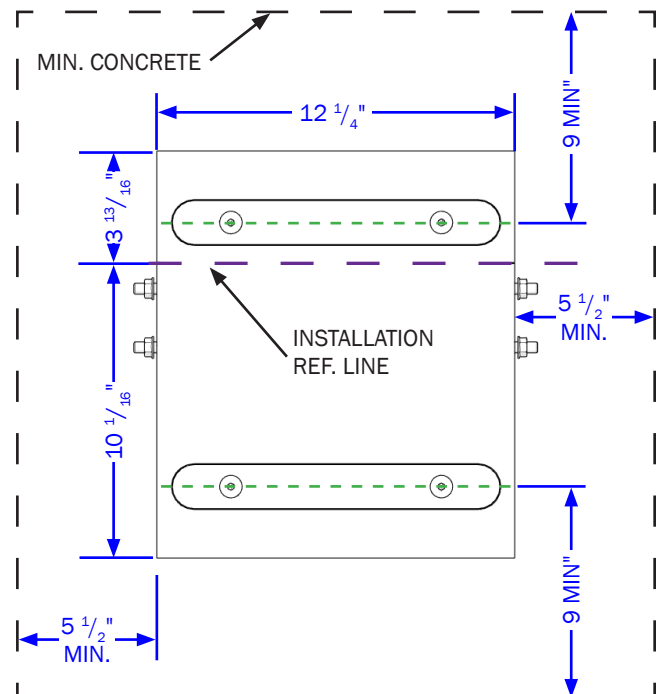
Field concrete foundation design and complete consolidation of concrete surrounding embedded item(s) anchorage points not by PS Flood Barriers.

Step 4 Illustration



Embedded Mullion Receiver Install Reference

Refer to Approved for Construction Drawings for exact placement.



EMBEDDED MULLION RECEIVER INFO:

MIN. 3000 PSI CONCRETE
8" MIN. CONCRETE THICKNESS
5 1/2" MIN. EDGE DISTANCE (SIDES)
9" MIN. EDGE DISTANCE (WET SIDE)
9" MIN. EDGE DISTANCE (DRY SIDE)

IMPORTANT! Allow concrete to fully set before proceeding with A-Frame Mullion installation.

Mullion Installation

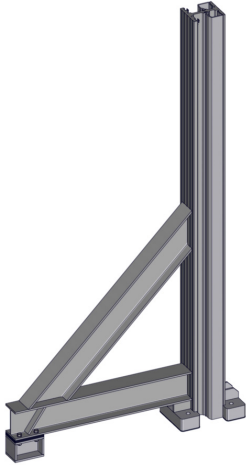
A-Frame

XV. A-Frame Mullion Installation

IMPORTANT! Follow included Anchor Manufacturer's technical data manual/installation instructions for installation requirements and proper installation procedures.

Standard (FM Approved)

A-Frame Mullion



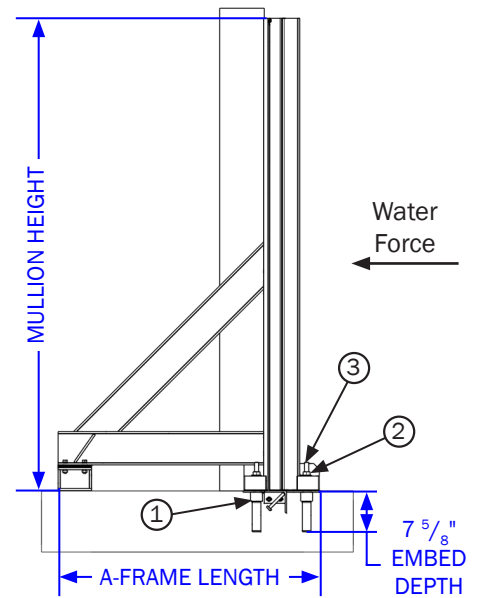
Dry-Side Supported (Non-FM)

*Installation requires bolt to be tightened to ensure contact with kick brace (with no water force).



Mullion and Embed Reference

Refer to Approved for Construction Drawings for exact height and length dimensions.



A-FRAME EMBEDDED MULLION RECEIVER HARDWARE

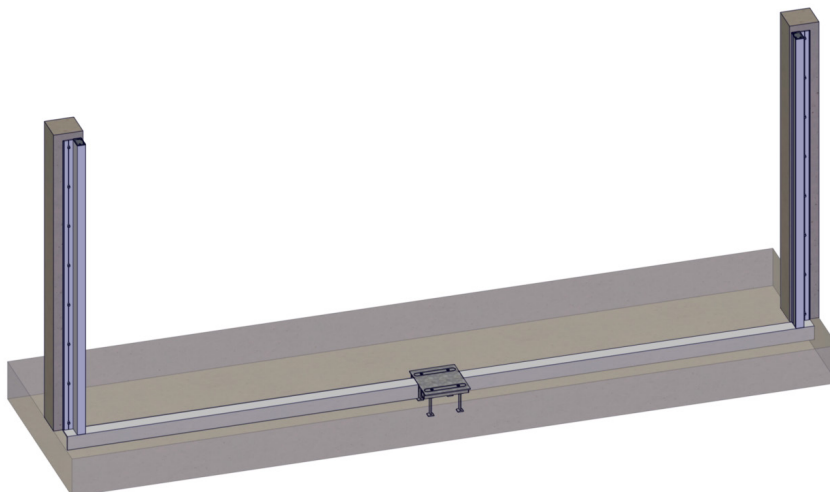
BALLOON	PART #	DESCRIPTION	QUANTITY
1	514382	FP;DBP MULLION EMBED ASM-GALV	1
2	*501941	WASHER; FLAT 3/4"x1-15/32"ZN	4
3	*510180	HALFEN TBOLT 3/4"X5" W/NUT GAL	4
*Unless otherwise specified on Approved for Construction Drawings.			

MULLION ANCHOR TORQUE RATINGS:

POST-INSTALLED THREAD INSERTS: 100 FT-LB
EMBEDDED MULLION RECEIVER: 89 FT-LB

STEP 1. Clean off debris in and around mounting surface (embedded mullion receiver) to ensure good gasket seal.

Step 1 Illustration

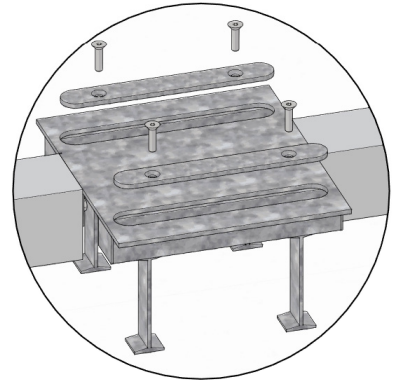
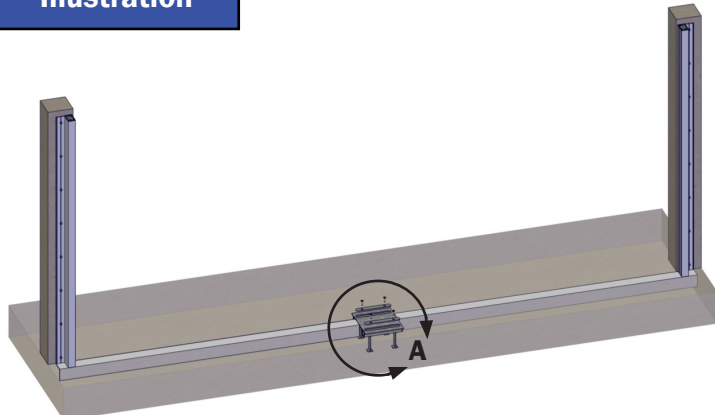


Mullion Installation

A-Frame

STEP 2. Remove channel cover plates with $\frac{7}{32}$ " Allen Wrench.

Step 2 Illustration



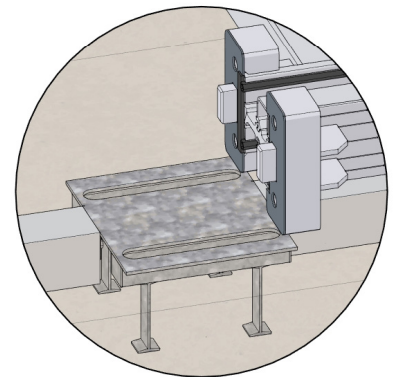
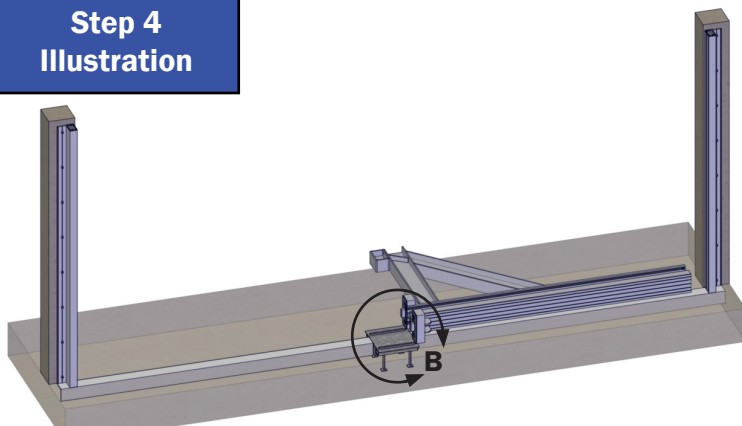
DETAIL A

STEP 3. Remove any water and debris that has collected inside the halfen channels.

STEP 4. Lay mullion on his side next to the mounting area.

**A-Frame Mullion shown with shear lugs, dependent upon design loading required.*

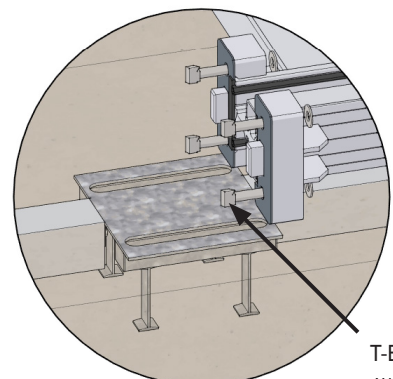
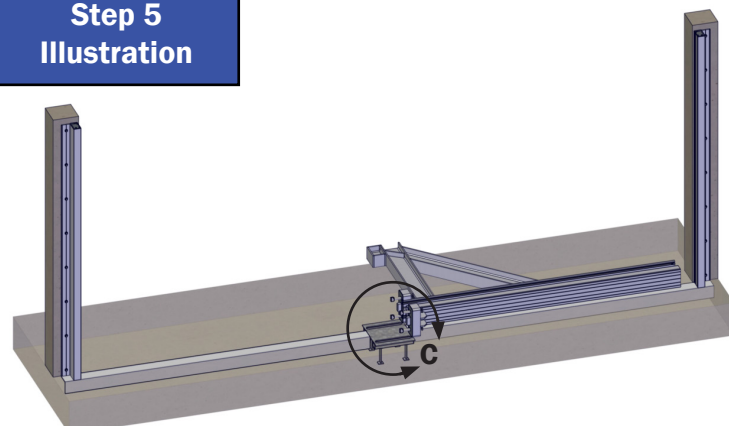
Step 4 Illustration



DETAIL B

STEP 5. Insert T-Bolts in bottom of mullion baseplate and loosely thread on nuts.

Step 5 Illustration



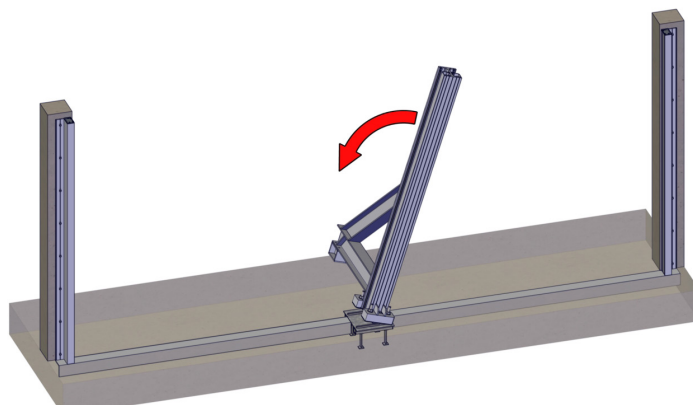
DETAIL C

Mullion Installation

A-Frame

STEP 6. Line T-Bolts up with channels and tip mullion into place, centering it on the embedded mullion receiver.

Step 6 Illustration



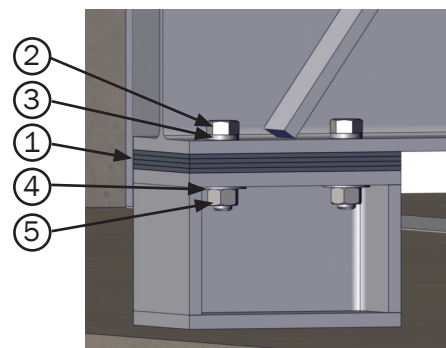
STEP 7. Add or remove shims from support foot until mullion sits flat on embedded mullion receiver top plate.

A-FRAME SUPPORT FOOT PARTS			
BALLOON	PART #	DESCRIPTION	QUANTITY
1	513748	FP;A-FRAME SUPPORT SHIM	8
2	500352	BOLT;HEX1/2"13X2GR5ZN	4
3	501937	WASHER;FLAT 1/2"ZN USS	4
4	501959	WASHER;SPLIT LOCK 1/2" ZN	4
5	501099	NUT;HEX 1/2"13 GR5ZN	4
NOT SHOWN	500346	BOLT;HEX1/2"13X2 1/2GR5ZN (REQUIRED IF MORE THAN 4 SHIMS ARE USED)	4

Support Foot Shims

Installed: Quantity 4

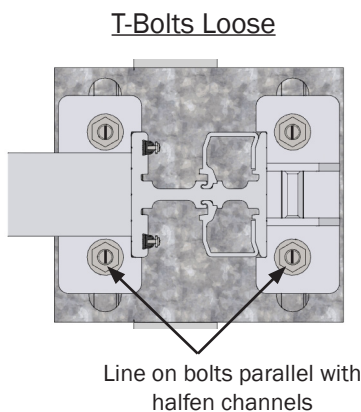
Loose: Quantity 4



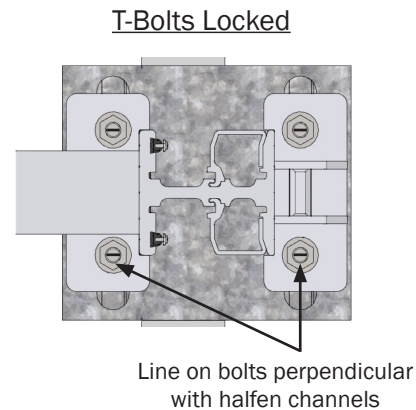
STEP 8.

- Spin T-Bolts until line on the bolt is perpendicular to the Halfen channel.
- Add or remove shims from support foot until mullion sits flat on embedded mullion receiver top plate, A-frame support foot required to be contacting surface area to restrict flexing of Mullion.
- Tighten nuts on embedded mullion receiver to 89 ft-lbs Unless otherwise specified on Approved for Construction Drawings and/or inside optional Calculations packet.

Step 8 Illustration A



Step 8 Illustration B



STEP 9. Continue with Flood Plank Deployment - Found on Page 30.

Mullion Installation

Corner Embedded Mullion Receiver

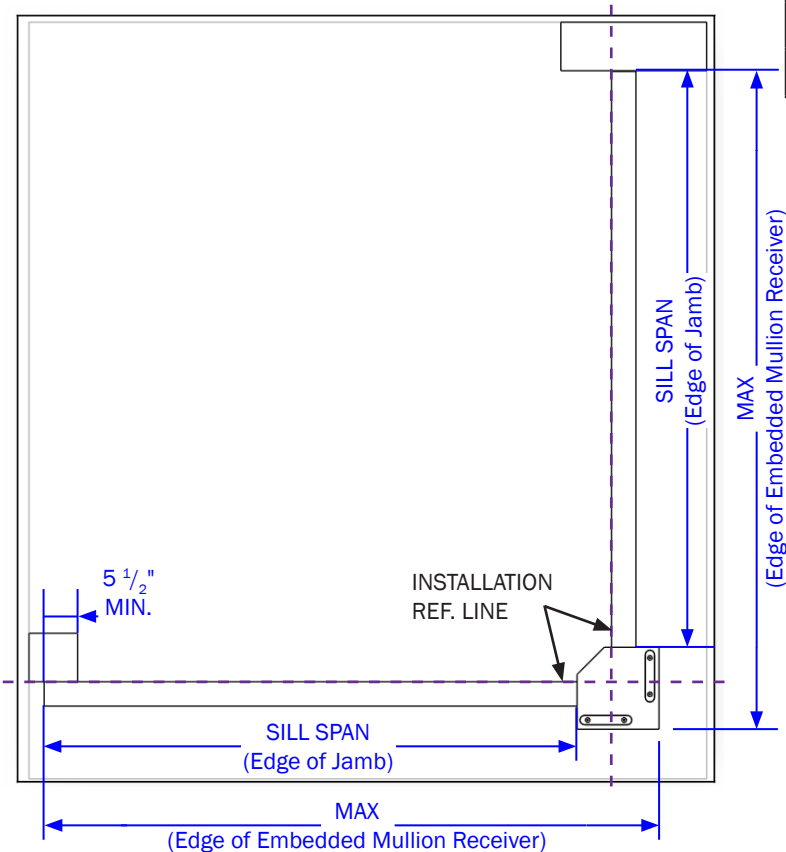
XVI. Corner Embedded Mullion Receiver Installation

NOTICE Only use Approved for Construction Drawings.

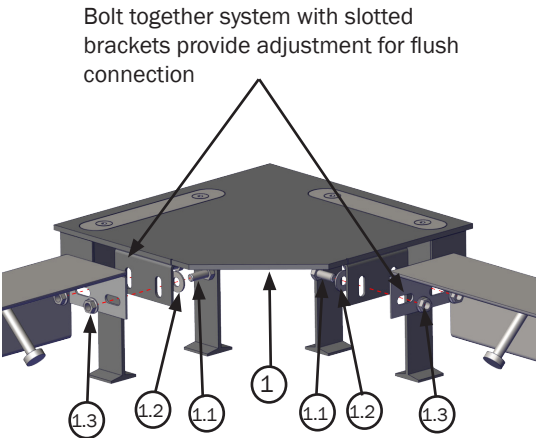
- STEP 1.** Review all Approved for Construction drawings sent with the crated Flood Wall.
The Approved for Construction Drawings are located inside a plastic bag inside the crate. Review all installation labels prior to installation.
- STEP 2.** Determine sill/embed types and exact placements as called out on Approved for Construction Drawings.
All sealing surfaces must be sound, flat/level, and without blemish for best performance.
Permissible tolerance is +/- 1/16" per 10 foot length. Ensure Embedded Mullion Receiver is level to within 1/32" and flush with adjacent sealing surfaces.
- STEP 3.**
- a. Locate Installation Reference Line and mark embedded mullion receiver locations on concrete surface, as detailed on **Embedded Mullion Receiver Install Reference**.
 - b. Connect embedded mullion receiver to sills with included hardware.
Embedded mullion receiver includes notch for alignment with embedded sill edge.

Flood Wall Install Reference

Refer to Approved for Construction Drawings for exact dimensions.



CORNER EMBEDDED MULLION RECEIVER PARTS			
BALLOON	PART #	DESCRIPTION	QTY
1	514380	FP;CORNER EMBED ASM-GALV	1
1.1	500400	BOLT;HEX3/8"16X1GRZN	4
1.2	501947	WASHER;FLAT 3/8"ZN	4
1.3	501085	NUT;FLANGE 3/8"16ZN-CASE HARD	4
NOT SHOWN	514261	L-KEY;HEX 7/32"	1



Mullion Installation

Corner Embedded Mullion Receiver

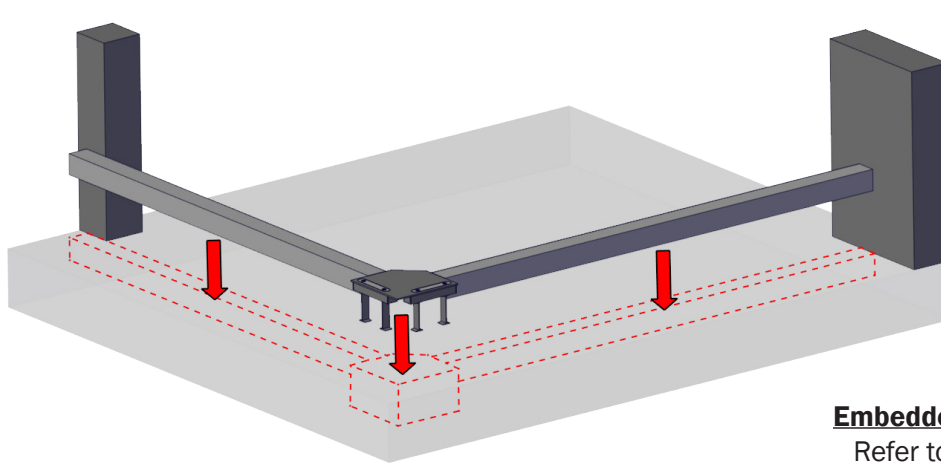
STEP 4.

- Place embedded mullion receiver and sills according to Approved for Construction Drawings.
- Fill concrete, in accordance with minimum requirements called out for embedded mullion receiver, level into concrete, keeping flush with concrete surface.

Required embedded mullion receiver edge distances specified in Approved for Construction Drawings.

IMPORTANT! Follow included Anchor Manufacturer's technical data manual/installation instructions for installation requirements and proper installation procedures.

Field concrete foundation design and complete consolidation of concrete surrounding embedded item(s) anchorage points not by PS Flood Barriers.



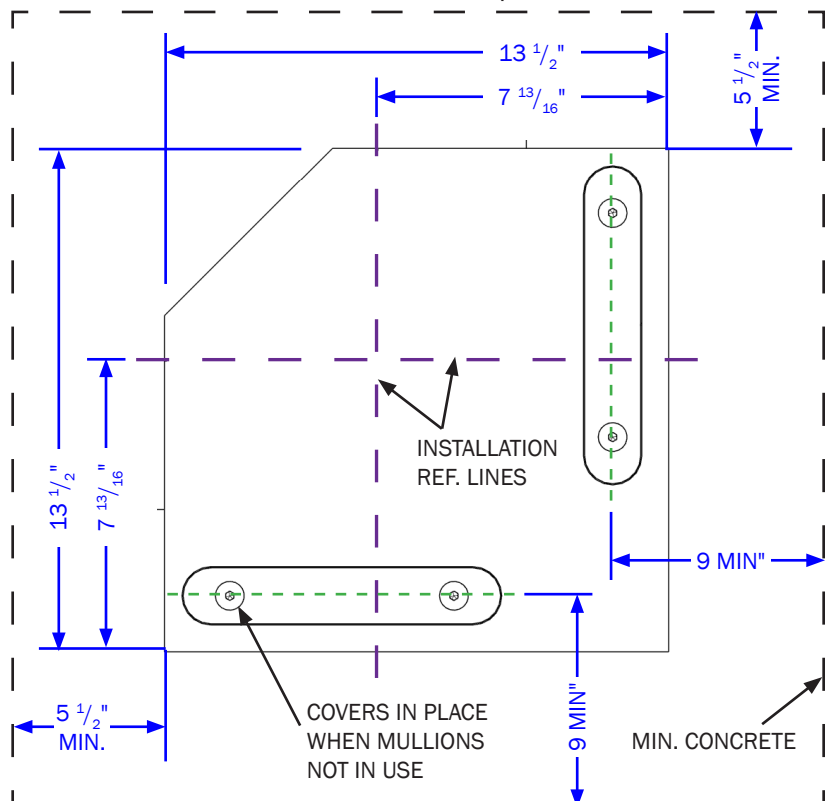
**Step 4
Illustration**

Embedded Mullion Receiver Install Reference

Refer to Approved for Construction Drawings for exact placement.

EMBEDDED MULLION RECEIVER INFO:

MIN. 3000 PSI CONCRETE
8" MIN. CONCRETE THICKNESS
5 1/2" MIN. EDGE DISTANCE (SIDES)
9" MIN. EDGE DISTANCE (WET SIDE)
9" MIN. EDGE DISTANCE (DRY SIDE)



IMPORTANT! Allow concrete to fully set before proceeding with Corner Mullion installation.

Mullion Installation

Corner

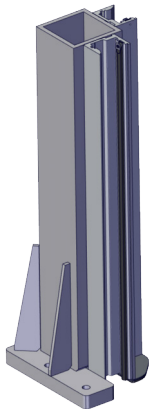
XVII. Corner Mullion Installation

NOTICE: Corner Mullion is not available with FM Approval Label.

IMPORTANT! Follow included Anchor Manufacturer's technical data manual/installation instructions for installation requirements and proper installation procedures.

Standard

Corner Mullion

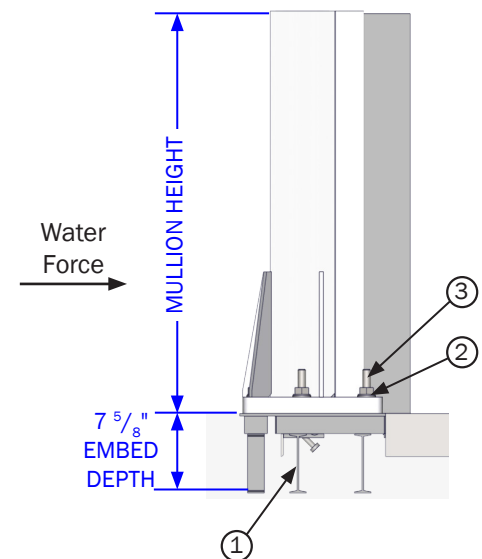


Versions Available:

- Standard Corner Mullion
- A-Frame Corner Mullion
- Tension Corner Mullion
- Inside Mullion
- Outside Mullion

Mullion and Embed Reference

Refer to Approved for Construction Drawings for exact height and length dimensions.



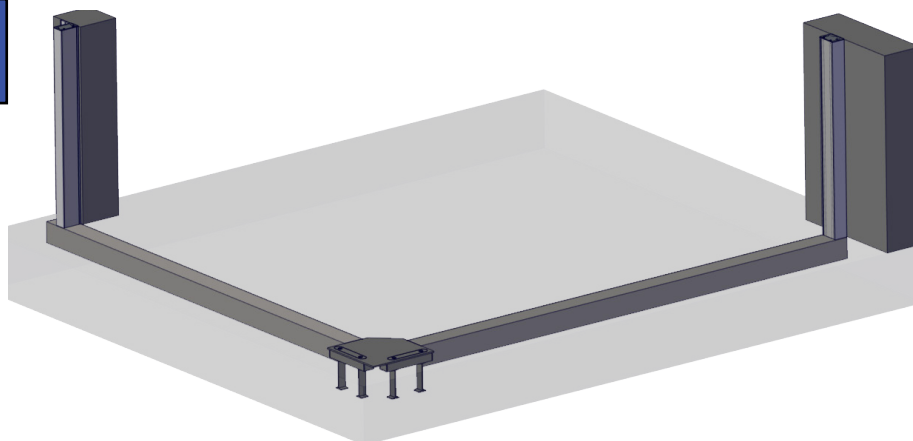
MULLION ANCHOR TORQUE RATINGS:

POST-INSTALLED THREAD INSERTS: 100 FT-LB
EMBEDDED MULLION RECEIVER: 89 FT-LB

EMBEDDED MULLION RECEIVER HARDWARE			
BALLOON	PART #	DESCRIPTION	QUANTITY
1	514380	FP;CORNER EMBED ASM-GALV	1
2	*501941	WASHER; FLAT 3/4"x1-15/32"ZN	4
3	*500755	HALFEN TBOLT 3/4"X4" W/NUT GAL	4
*Unless otherwise specified on Approved for Construction Drawings.			

STEP 1. Clean off debris in and around mounting surface (embedded mullion receiver) to ensure good gasket seal.

Step 1 Illustration

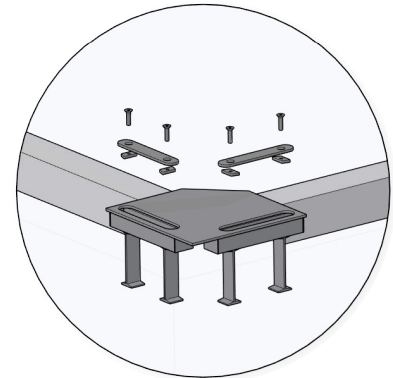
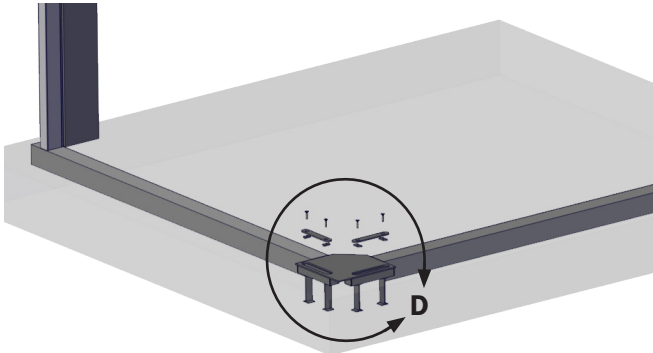


Mullion Installation

Corner

STEP 2. Remove channel cover plates with $\frac{7}{32}$ " Allen Wrench.

Step 2 Illustration

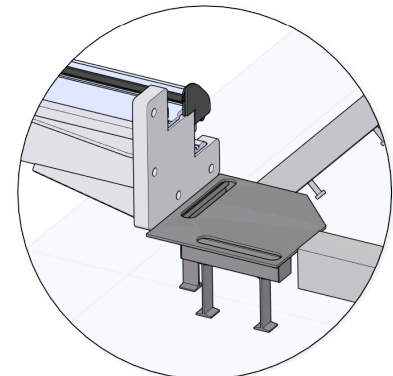
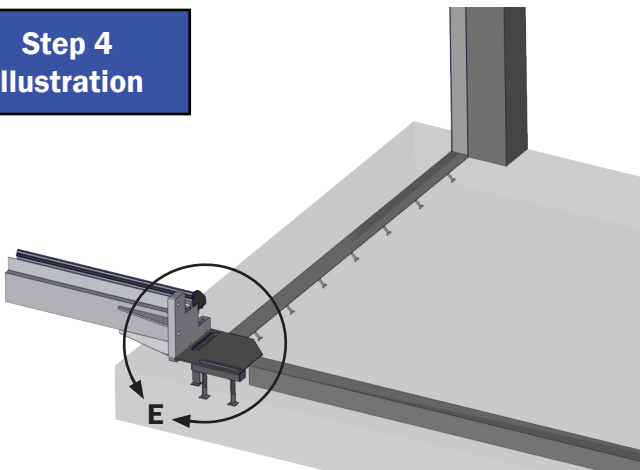


DETAIL D

STEP 3. Remove any water and debris collected inside Halfen channel.

STEP 4. Lay mullion on his side next to the mounting area.

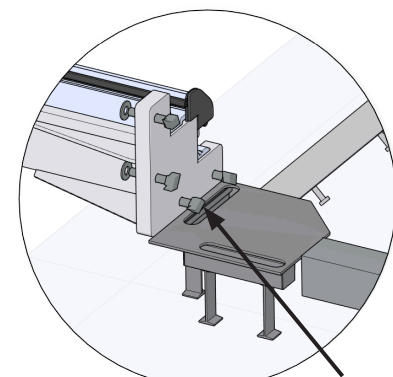
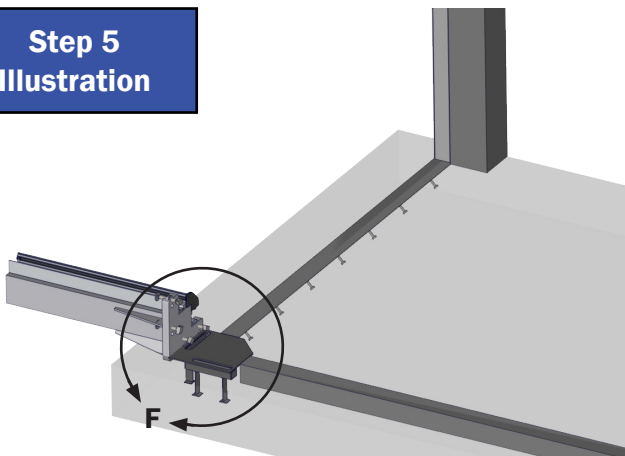
Step 4 Illustration



DETAIL E

STEP 5. Insert T-Bolts in bottom of Corner Mullion baseplate and loosely thread on nuts.

Step 5 Illustration



DETAIL F

T-Bolts w/
washers

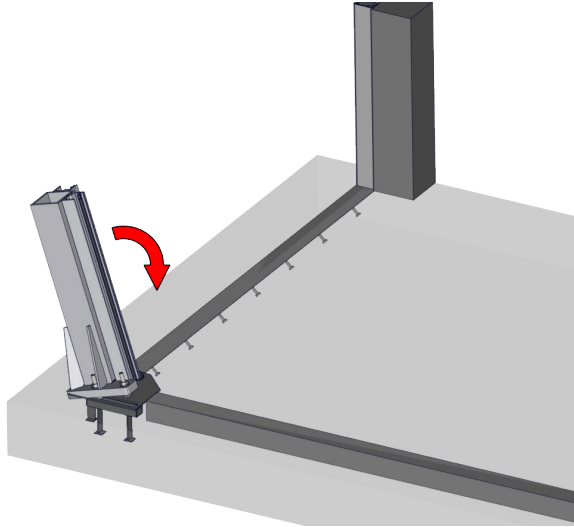
Mullion Installation

Corner

STEP 6. Line T-Bolts up with channels and tip mullion into place.

- a. Centering it on the embedded mullion receiver, taking care not to damage bottom gasket when installing.

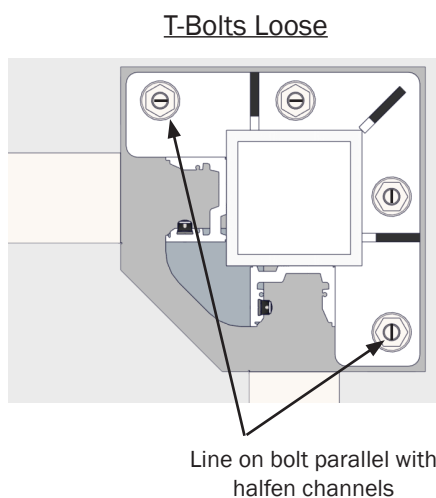
Step 6 Illustration



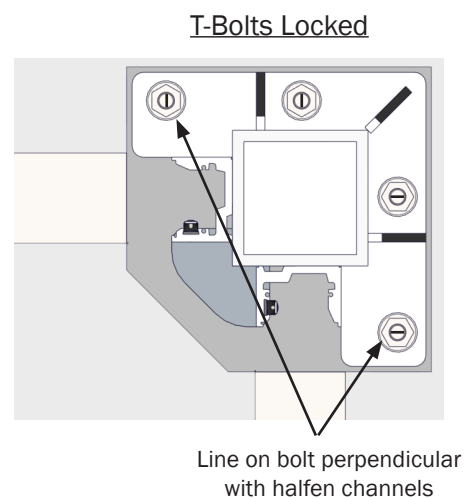
STEP 7.

- a. Spin T-Bolts until line on the bolt is perpendicular to the Halfen channel.
- b. Tighten nuts on embedded mullion receiver to 89 ft-lbs Unless otherwise specified on Approved for Construction Drawings and/or inside optional Calculations packet.

Step 7 Illustration A



Step 7 Illustration B



STEP 8. Continue with Flood Plank Deployment - Found on Page 30.

Mullion Installation

Single Base Plate Embedded Mullion Receiver

XVIII. Single Base Plate Embedded Mullion Receiver Installation

NOTICE Only use Approved for Construction Drawings.

STEP 1. Review all Approved for Construction drawings sent with the crated Flood Wall.

The Approved for Construction Drawings are located inside a plastic bag inside the crate. Review all installation labels prior to installation

STEP 2. Determine sill/embed types and exact placements as called out on Approved for Construction Drawings.

All sealing surfaces must be sound, flat/level, and without blemish for best performance.

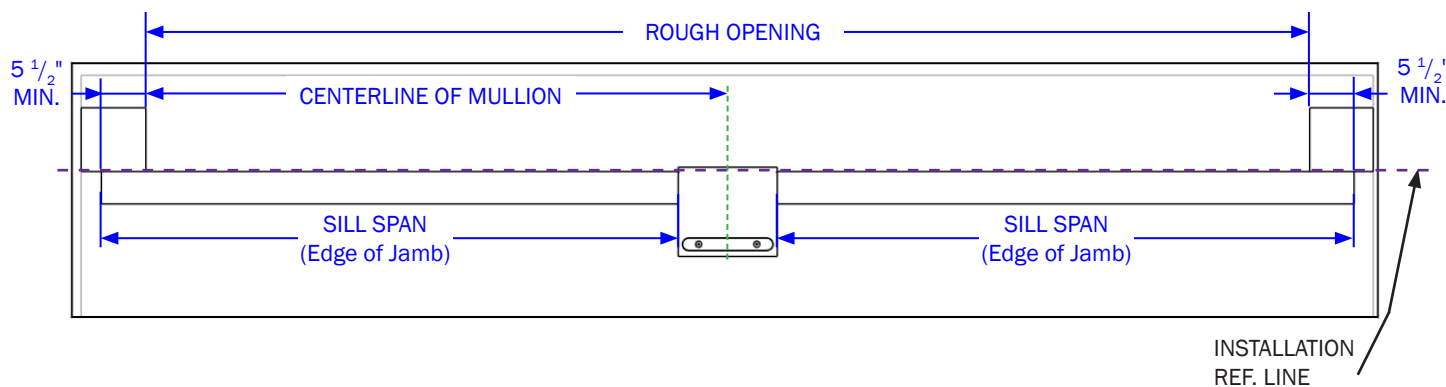
Permissible tolerance is $\pm 1/16$ " per 10 foot length. Ensure Embedded Mullion Receiver is level to within $1/32$ " and flush with adjacent sealing surfaces.

STEP 3.

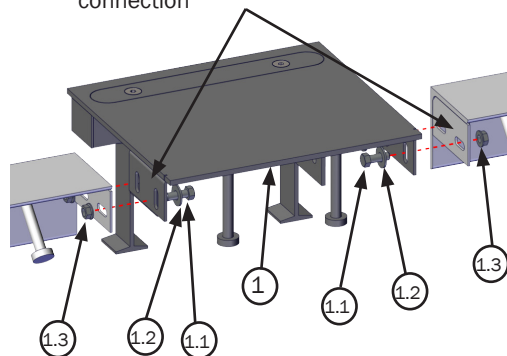
- Locate Installation Reference Line and mark embedded mullion receiver locations on concrete surface, as detailed on **Embedded Mullion Receiver Install Reference**.
- Connect embedded mullion receiver to sills with included hardware.
Embedded mullion receiver includes notch for alignment with embedded sill edge.

Flood Wall Install Reference

Refer to Approved for Construction Drawings for exact dimensions.



Bolt together system with slotted brackets provide adjustment for flush connection



SINGLE BASE PLATE EMBEDDED MULLION RECEIVER PARTS

BALLOON	PART #	DESCRIPTION	QUANTITY
1	514092	FP;SBP MULLION EMBED ASM-GALV	1
1.1	500400	BOLT;HEX3/8"16X1GRZN	4
1.2	501947	WASHER;FLAT 3/8"ZN	4
1.3	501085	NUT;FLANGE 3/8"16ZN-CASE HARD	4
NOT SHOWN	514261	L-KEY;HEX 7/32"	1

Mullion Installation

Single Base Plate Embedded Mullion Receiver

STEP 4.

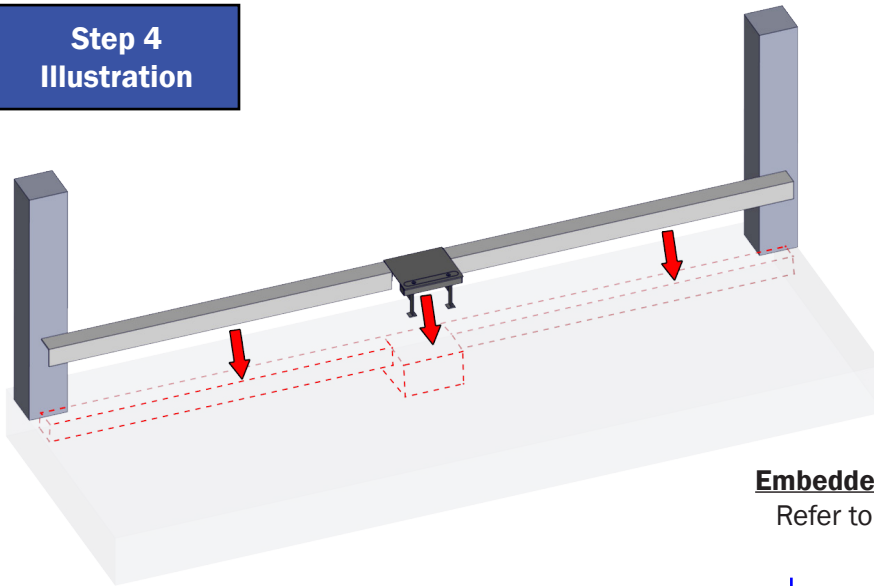
- Place embedded mullion receiver and sills according to Approved for Construction Drawings.
- Fill concrete, in accordance with minimum requirements called out for embedded mullion receiver, level into concrete, keeping flush with concrete surface.

Required embedded mullion receiver edge distances specified in Approved for Construction Drawings.

IMPORTANT! Follow included Anchor Manufacturer's technical data manual/installation instructions for installation requirements and proper installation procedures.

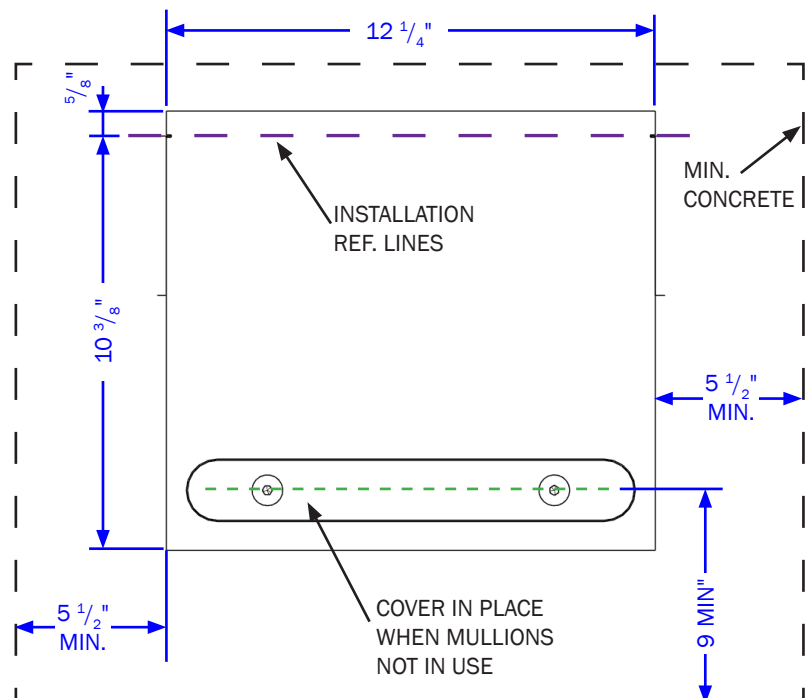
Field concrete foundation design and complete consolidation of concrete surrounding embedded item(s) anchorage points not by PS Flood Barriers.

Step 4 Illustration



Embedded Mullion Receiver Install Reference

Refer to Approved for Construction Drawings for exact placement.



EMBEDDED MULLION RECEIVER INFO:

MIN. 3000 PSI CONCRETE
8" MIN. CONCRETE THICKNESS
5 1/2" MIN. EDGE DISTANCE (SIDES)
9" MIN. EDGE DISTANCE (WET SIDE)

IMPORTANT! Allow concrete to fully set before proceeding with Single Base Plate Mullion installation.

Mullion Installation

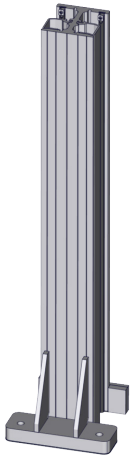
Single Base Plate

XIX. Single Base Plate Mullion Installation

IMPORTANT! Follow included Anchor Manufacturer's technical data manual/installation instructions for installation requirements and proper installation procedures.

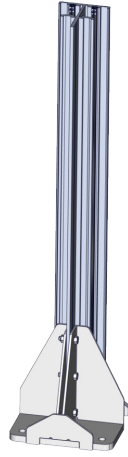
Standard (FM Approved)

Single Base Plate Mullion



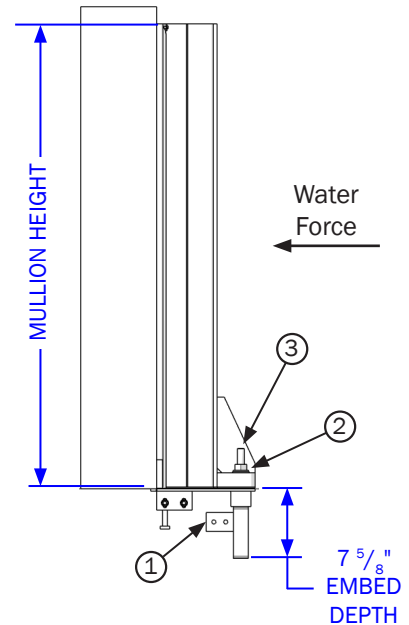
Post Mullion (Non-FM)

Same installation as
Single Base Plate Mullion



Mullion and Embed Reference

Refer to Approved for Construction Drawings
for exact height and length dimensions.



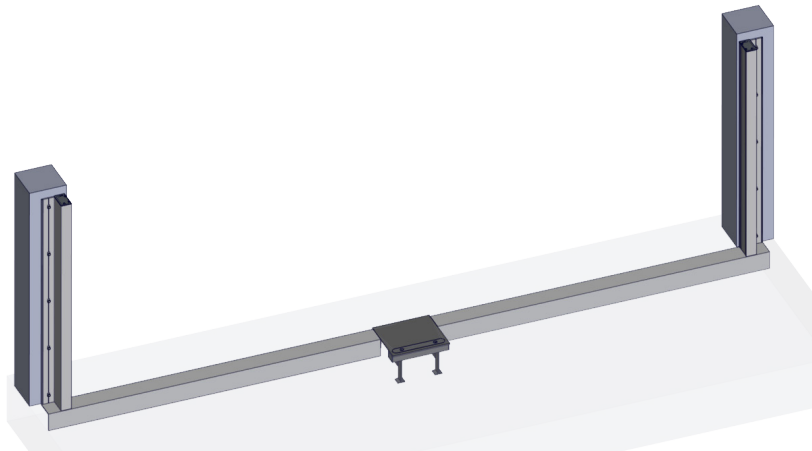
MULLION ANCHOR TORQUE RATINGS:

POST-INSTALLED THREAD INSERTS: 100 FT-LB
EMBEDDED MULLION RECEIVER: 89 FT-LB

EMBEDDED MULLION RECEIVER HARDWARE			
BALLOON	PART #	DESCRIPTION	QUANTITY
1	514092	FP;SBP MULLION EMBED ASM-GALV	1
2	*501941	WASHER; FLAT 3/4"x1-15/32"ZN	4
3	*500755	HALFEN TBOLT 3/4"X4" W/NUT GAL	4
*Unless otherwise specified on Approved for Construction Drawings.			

STEP 1. Clean off debris in and around mounting surface (embedded mullion receiver) to ensure good gasket seal.

Step 1 Illustration

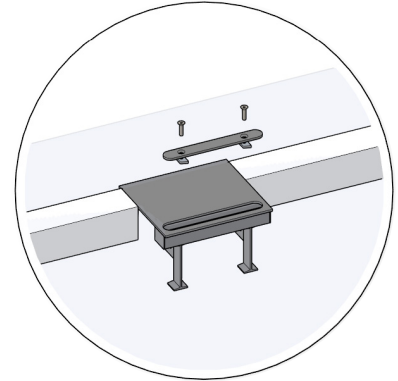
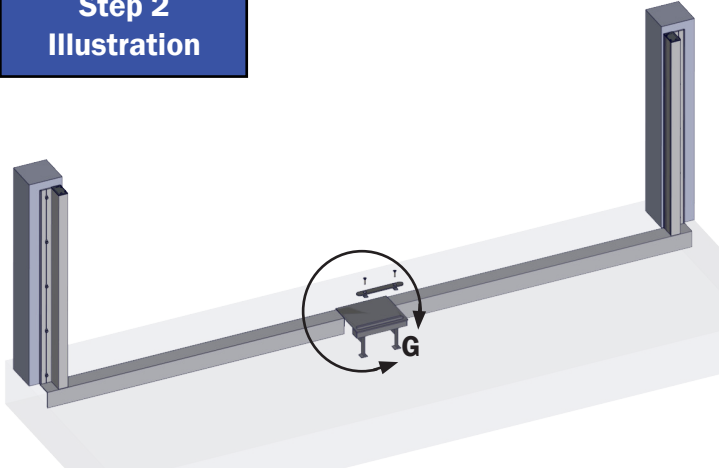


Mullion Installation

Single Base Plate

STEP 2. Remove channel cover plates with $\frac{7}{32}$ " Allen Wrench.

Step 2 Illustration

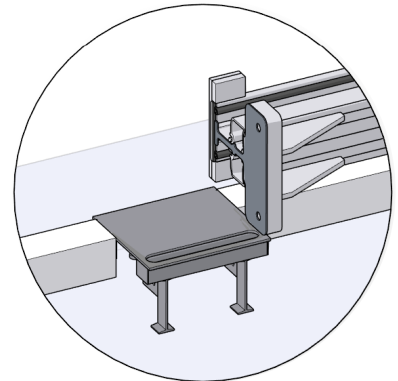
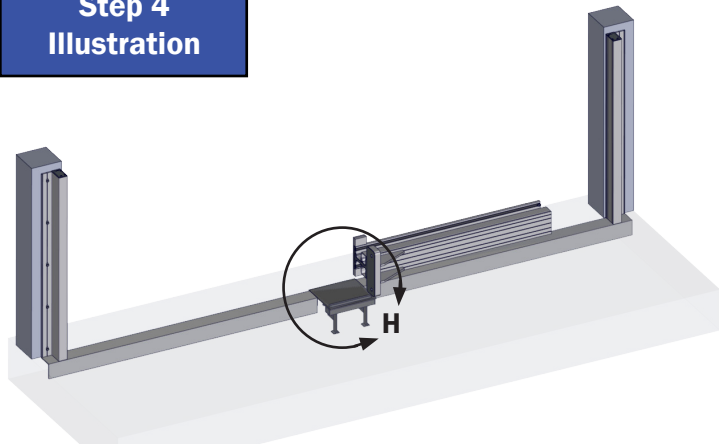


DETAIL G

STEP 3. Remove any water and debris collected inside Halfen channel.

STEP 4. Lay mullion on his side next to the mounting area.

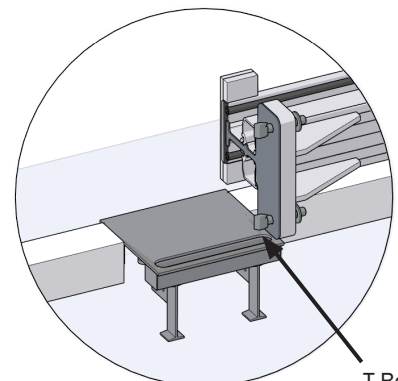
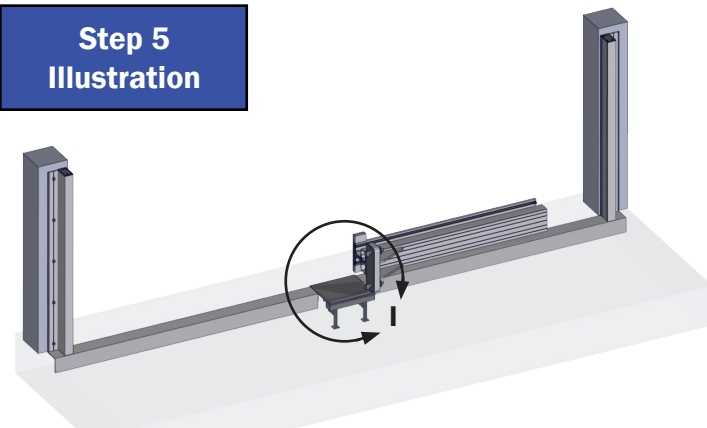
Step 4 Illustration



DETAIL H

STEP 5. Insert T-Bolts in bottom of mullion baseplate and loosely thread on nuts.

Step 5 Illustration



T-Bolts w/
washers

DETAIL I

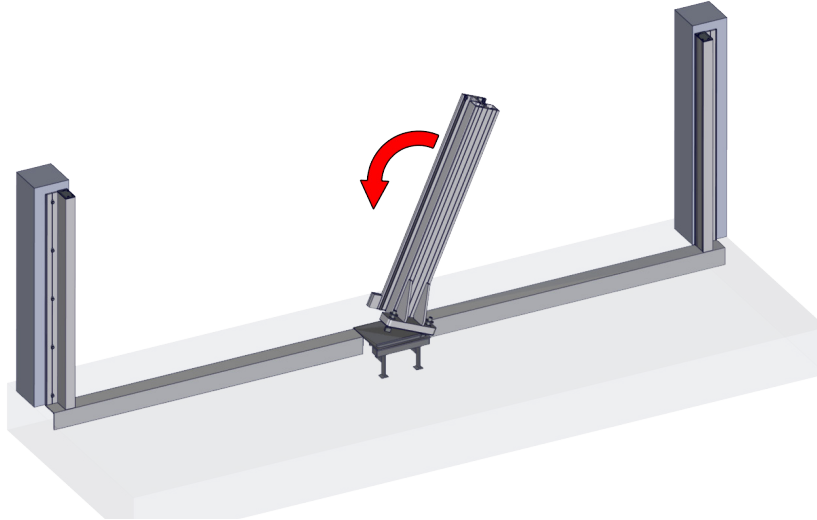
Mullion Installation

Single Base Plate

STEP 6. Line T-Bolts up with channels and tip mullion into place.

- a. Centering it on the embedded mullion receiver, making sure not to tear bottom gasket when installing.

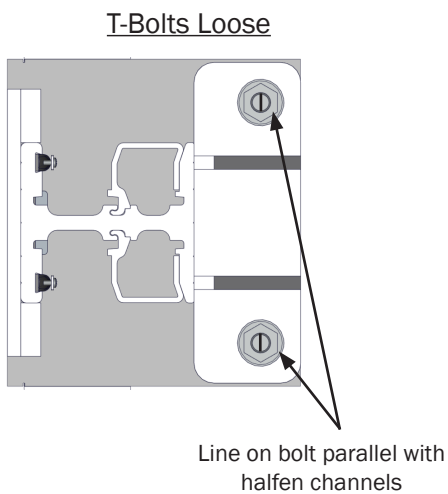
**Step 6
Illustration**



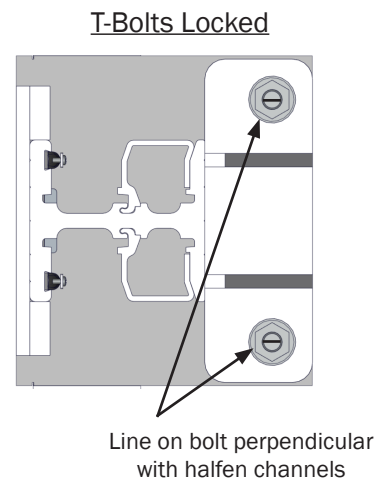
STEP 7.

- a. Spin T-Bolts until line on the bolt is perpendicular to the Halfen channel.
- b. Tighten nuts on embedded mullion receiver to 89 ft-lbs Unless otherwise specified on Approved for Construction Drawings and/or inside optional Calculations packet.

**Step 7
Illustration A**



**Step 7
Illustration B**



STEP 8. Continue with Flood Plank Deployment - Found on Page 30.

Mullion Installation

High Water Tension/Tension Embedded Mullion Receiver

XX. High Water Tension/Tension Embedded Mullion Receiver Installation

NOTICE Only use Approved for Construction Drawings.

STEP 1. Review all Approved for Construction drawings sent with the crated Flood Wall.

The Approved for Construction Drawings are located inside a plastic bag inside the crate. Review all installation labels prior to installation.

STEP 2. Determine sill/embed types and exact placements as called out on Approved for Construction Drawings.

All sealing surfaces must be sound, flat/level, and without blemish for best performance.

Permissible tolerance is $\pm 1/16"$ per 10 foot length. Ensure Embedded Mullion Receiver is level to within $1/32"$ and flush with adjacent sealing surfaces.

STEP 3.

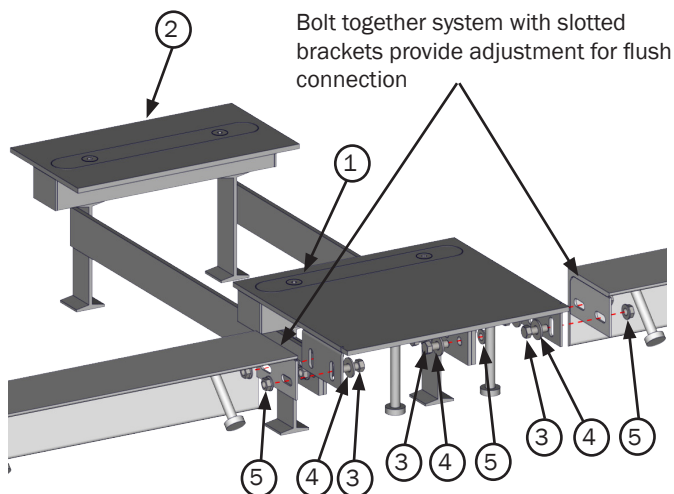
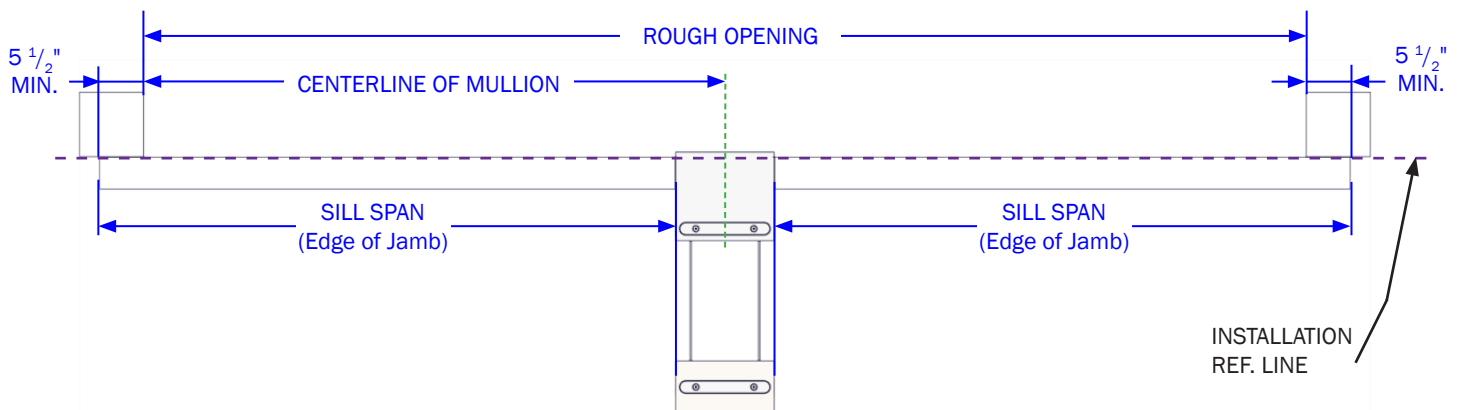
a. Locate Installation Reference Line and mark embedded mullion receiver locations on concrete surface, as detailed on **Embedded Mullion Receiver Install Reference**.

b. Connect embedded mullion receiver to sills with included hardware.

Embedded mullion receiver includes notch for alignment with embedded sill edge.

Flood Wall Install Reference

Refer to Approved for Construction Drawings for exact dimensions.



FP;SBP H.W. TENSION EMBED ASSY (PN#513074)

BALLOON	PART #	DESCRIPTION	QUANTITY
1	514092	FP;SBP MULLION EMBED ASM-GALV	1
2	514386	FP;HW TNSN EMBD ATCH ASM-GALV	1
3	500400	BOLT;HEX3/8"16X1GR5ZN	8
4	501947	WASHER;FLAT 3/8"ZN	8
5	501085	NUT;FLANGE 3/8"16ZN-CASE HARD	8
NOT SHOWN	514261	L-KEY;HEX 7/32"	1

FP;SBP TENSION EMBED ASSY (PN#512949)

BALLOON	PART #	DESCRIPTION	QUANTITY
1	514092	FP;SBP MULLION EMBED ASM-GALV	1
2	514388	FP;LW TNSN EMBD ATCH ASM-GALV	1
3	500400	BOLT;HEX3/8"16X1GR5ZN	8
4	501947	WASHER;FLAT 3/8"ZN	8
5	501085	NUT;FLANGE 3/8"16ZN-CASE HARD	8
NOT SHOWN	514261	L-KEY;HEX 7/32"	1

Mullion Installation

High Water Tension/Tension Embedded Mullion Receiver

STEP 4.

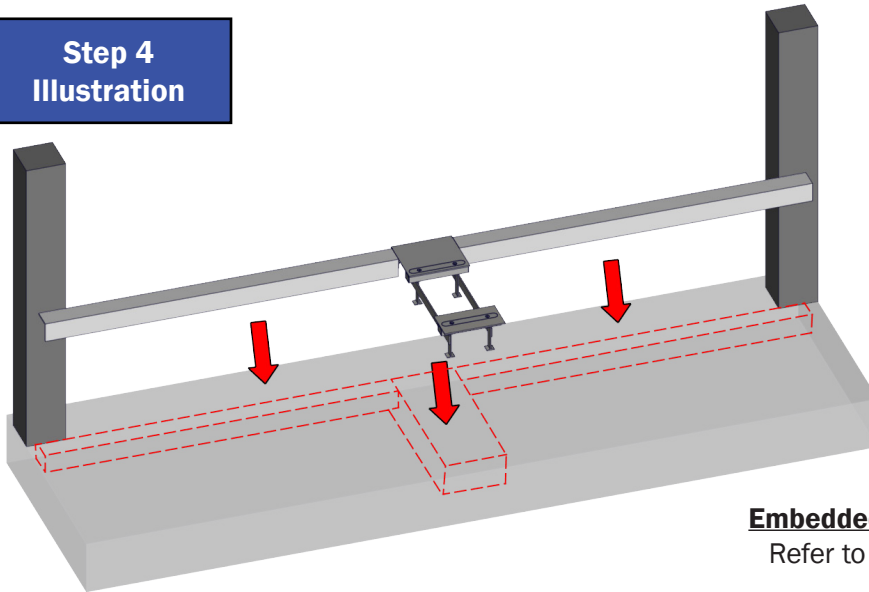
- Place embedded mullion receiver and sills according to Approved for Construction Drawings.
- Fill concrete, in accordance with minimum requirements called out for embedded mullion receiver, level into concrete, keeping flush with concrete surface.

Required embedded mullion receiver edge distances specified in Approved for Construction Drawings.

IMPORTANT! Follow included Anchor Manufacturer's technical data manual/installation instructions for installation requirements and proper installation procedures.

Field concrete foundation design and complete consolidation of concrete surrounding embedded item(s) anchorage points not by PS Flood Barriers.

Step 4 Illustration

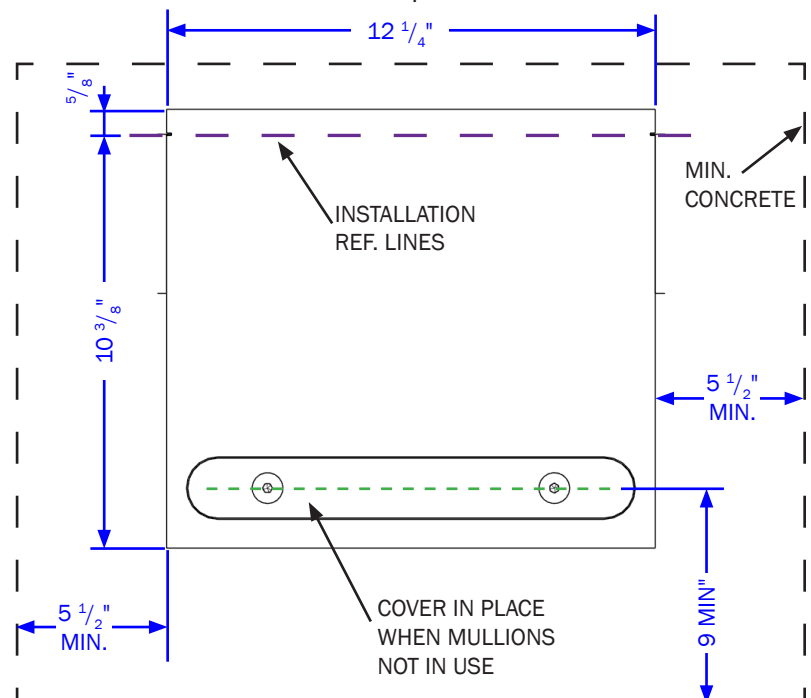


EMBEDDED MULLION RECEIVER INFO:

MIN. 3000 PSI CONCRETE
8" MIN. CONCRETE THICKNESS
5 1/2" MIN. EDGE DISTANCE (SIDES)
9" MIN. EDGE DISTANCE (WET SIDE)

Embedded Mullion Receiver Install Reference

Refer to Approved for Construction Drawings for exact placement.



IMPORTANT! Allow concrete to fully set before proceeding with Single Base Plate Mullion installation.

Mullion Installation

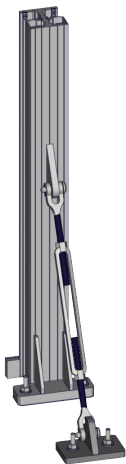
High Water Tension/Tension

XXI. Tension Mullion Installation

IMPORTANT! Follow included Anchor Manufacturer's technical data manual/installation instructions for installation requirements and proper installation procedures.

Standard (FM Approved)

High Water Tension/
Tension Mullion



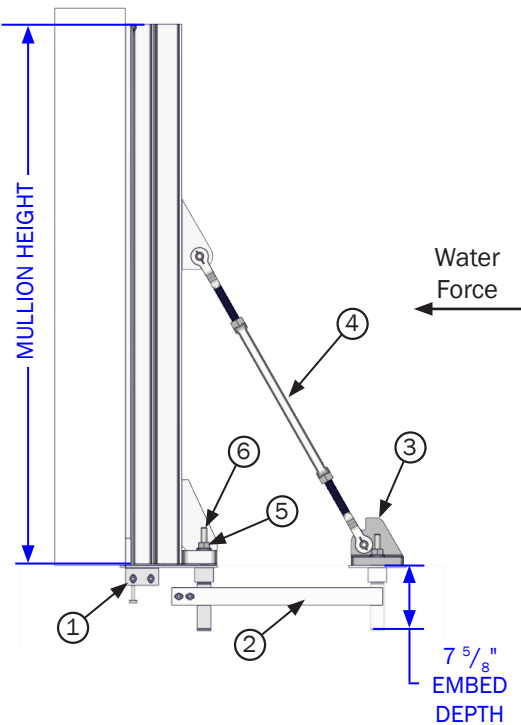
Wet-Side Mullion (Non-FM)

Same installation as
Tension Mullion



Mullion and Embed Reference

Refer to Approved for Construction Drawings
for exact height and length dimensions.



MULLION ANCHOR TORQUE RATINGS:
POST-INSTALLED THREAD INSERTS: 100 FT-LB
EMBEDDED MULLION RECEIVER: 89 FT-LB

EMBEDDED MULLION RECEIVER HARDWARE			
BALLOON	PART #	DESCRIPTION	QUANTITY
1	512343	FP;HW TENSION ASSY-ALUM	1
2	513074	FP;SBP H.W. TENSION EMBED ASSY	1
3	514354	FP530;HWT TIE PLATE-GALV	1
4	511812	TURNBUCKLE;JAW-JAW44 5/32"	1
5	*501941	WASHER; FLAT 3/4"x1-15/32"ZN	4
6	*500755	HALFEN TBOLT 3/4"x4" W/NUT GAL	4
*Unless otherwise specified on Approved for Construction Drawings.			

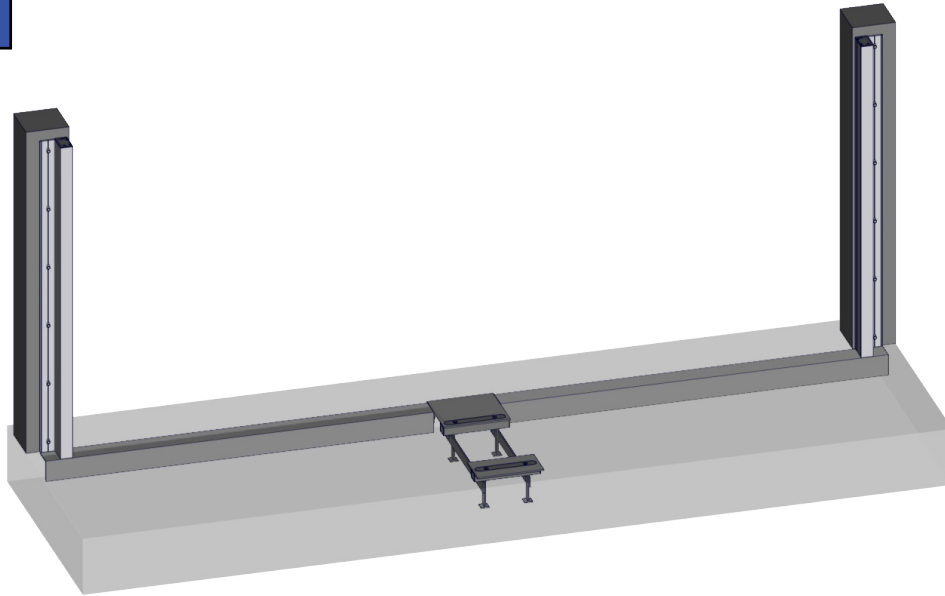
EMBEDDED MULLION RECEIVER HARDWARE			
BALLOON	PART #	DESCRIPTION	QUANTITY
1	510191	FP;TENSION MULLION ASSY	1
2	512949	FP;SBP TENSION EMBED ASSY	1
3	514343	FP;530;LWT TIE PLATE-GALV	1
4	510172	FP; TURNBUCKLE, JAW 1"X 8	1
5	*501941	WASHER; FLAT 3/4"x1-15/32"ZN	4
6	*500755	HALFEN TBOLT 3/4"x4" W/NUT GAL	4
*Unless otherwise specified on Approved for Construction Drawings.			

Mullion Installation

High Water Tension/Tension

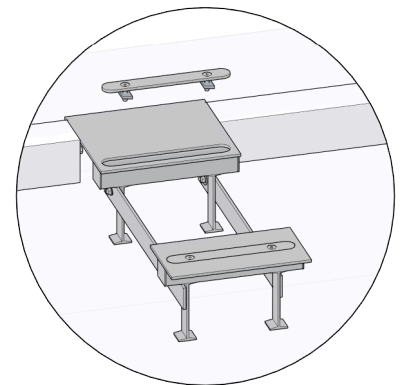
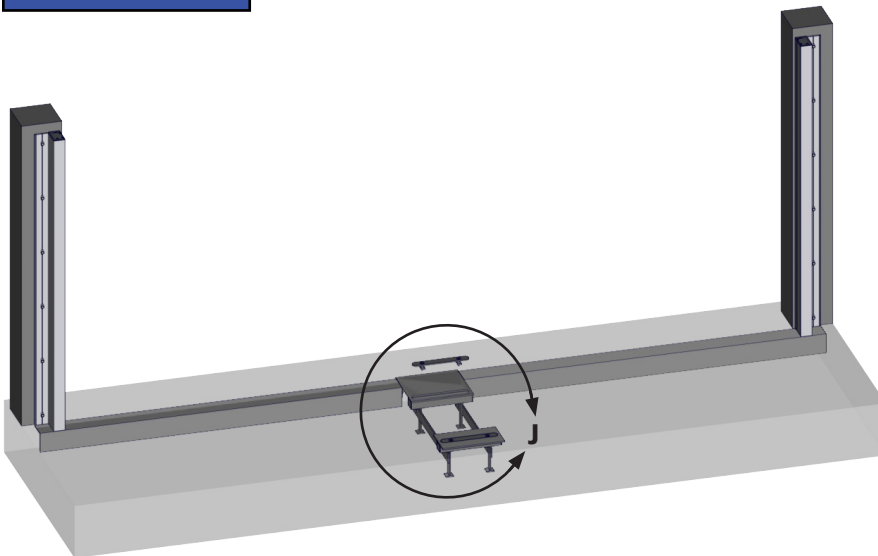
STEP 1. Clean off debris in and around mounting surface (embedded mullion receiver) to ensure good gasket seal.

Step 1 Illustration



STEP 2. Remove channel cover plates with $\frac{7}{32}$ " Allen Wrench.

Step 2 Illustration



DETAIL J

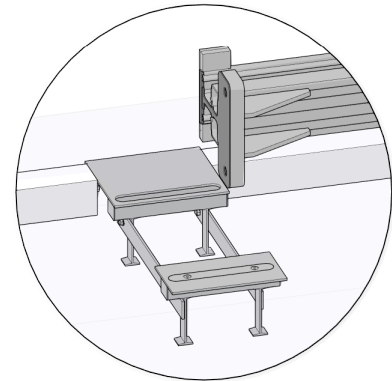
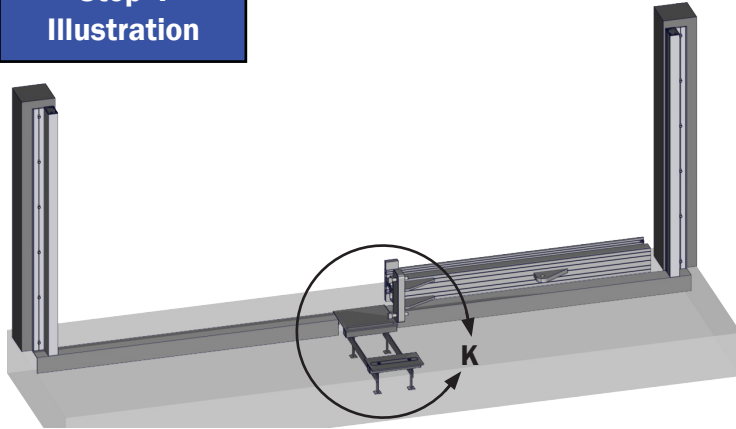
STEP 3. Remove any water and debris collected inside Halfen channel.

Mullion Installation

High Water Tension/Tension

STEP 4. Lay mullion on his side next to the mounting area.

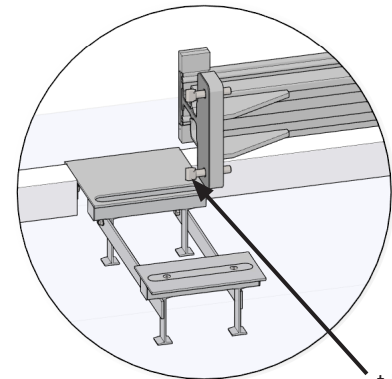
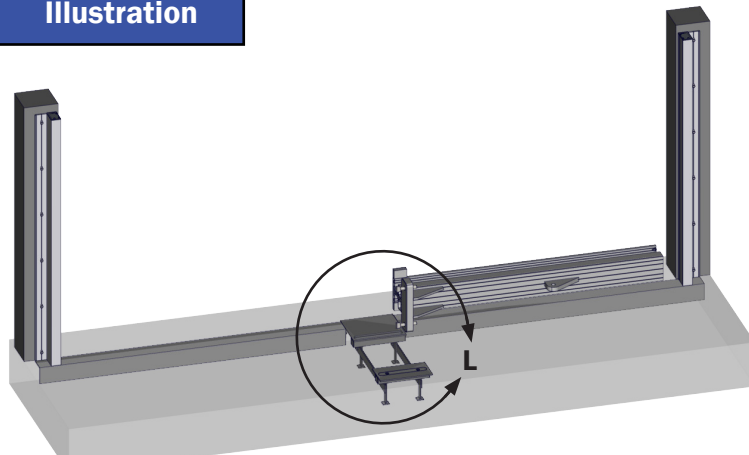
Step 4 Illustration



DETAIL K

STEP 5. Insert T-Bolts in bottom of mullion baseplate and loosely thread on nuts.

Step 5 Illustration

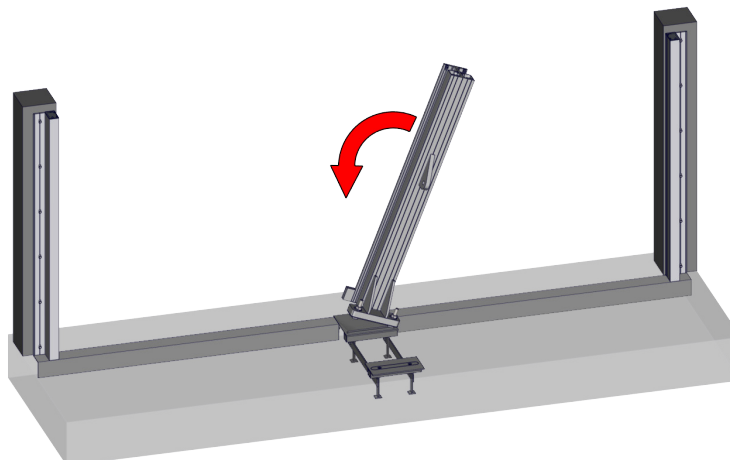


DETAIL L

STEP 6. Line T-Bolts up with channels and tip mullion into place.

Centering it on the embedded mullion receiver, making sure not to tear bottom gasket when installing.

Step 6 Illustration



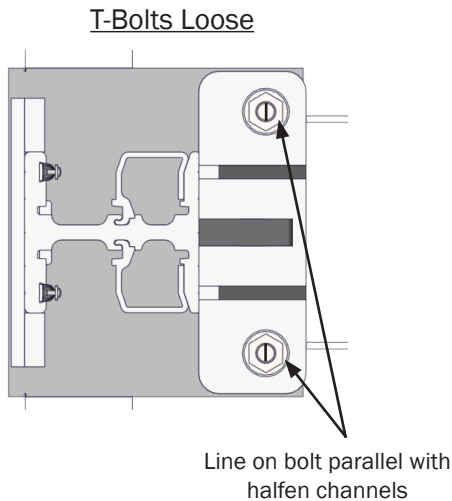
Mullion Installation

High Water Tension/Tension

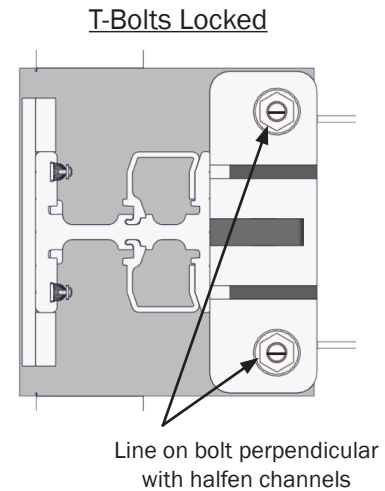
STEP 7.

- Spin T-Bolts until line on the bolt is perpendicular to the Halfen channel.
- Tighten nuts on Embeds to 89 ft-lbs Unless otherwise specified on Approved for Construction Drawings and/or inside optional Calculations packet.

**Step 7
Illustration A**



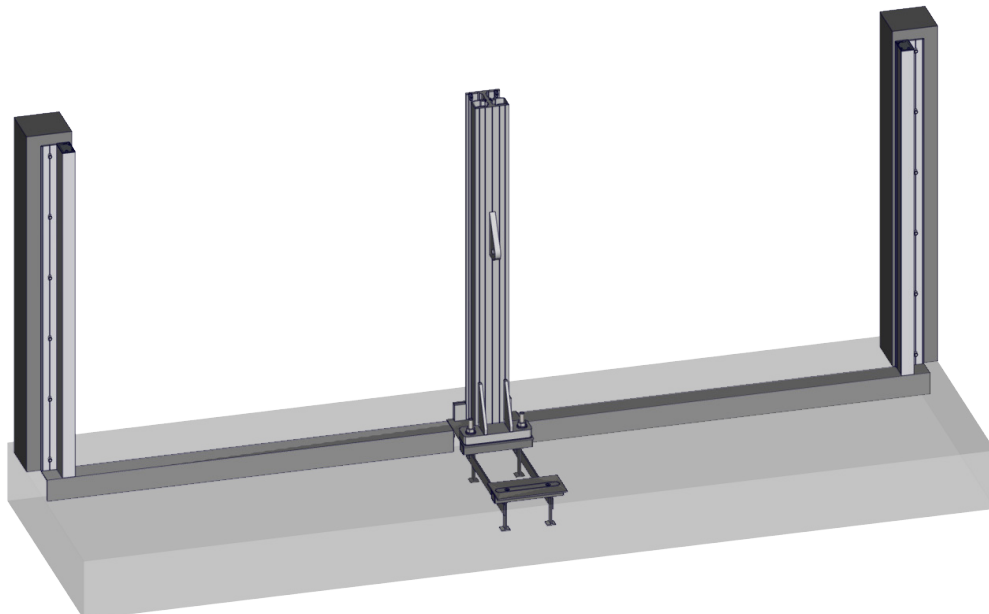
**Step 7
Illustration B**



STEP 8. After proper Tension Mullion installation.

- Clean off debris in and around mounting surface (embedded mullion receiver) to ensure good gasket seal.

**Step 8
Illustration**

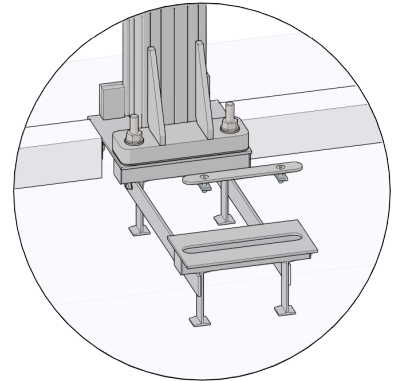
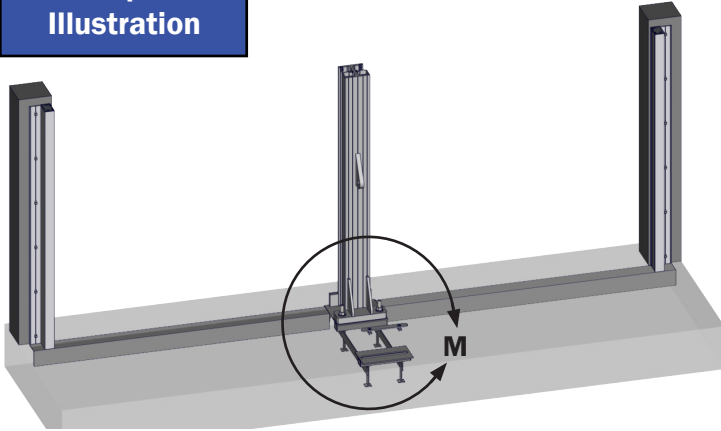


Mullion Installation

High Water Tension/Tension

STEP 9. Remove channel cover plate with $\frac{7}{32}$ " Allen Wrench.

Step 9 Illustration

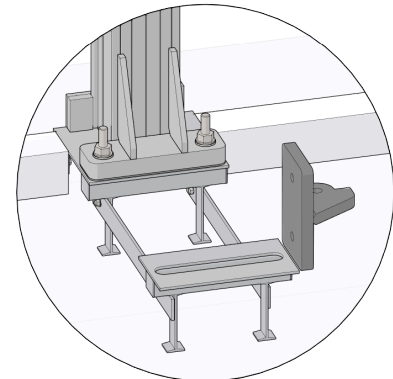
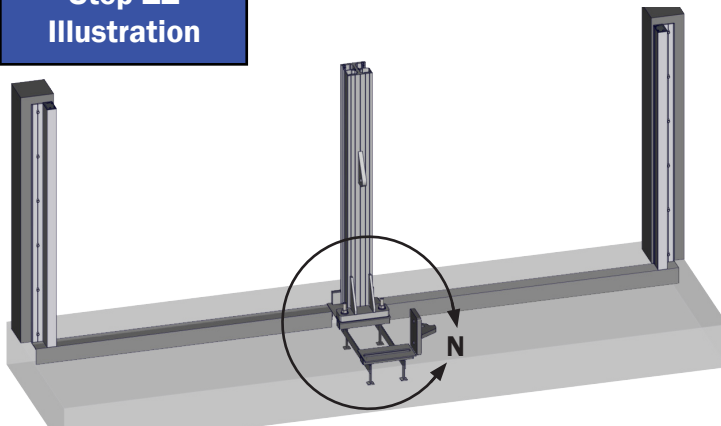


DETAIL M

STEP 10. Remove any water and debris collected inside halfen channel.

STEP 11. Lay Turnbuckle Mount Plate on his side next to the mounting area.

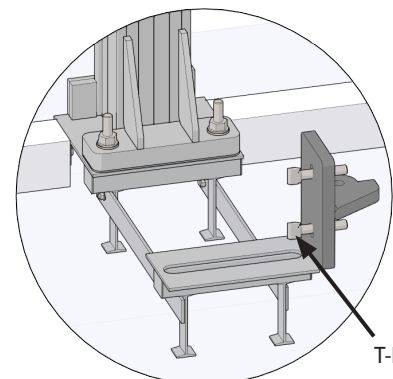
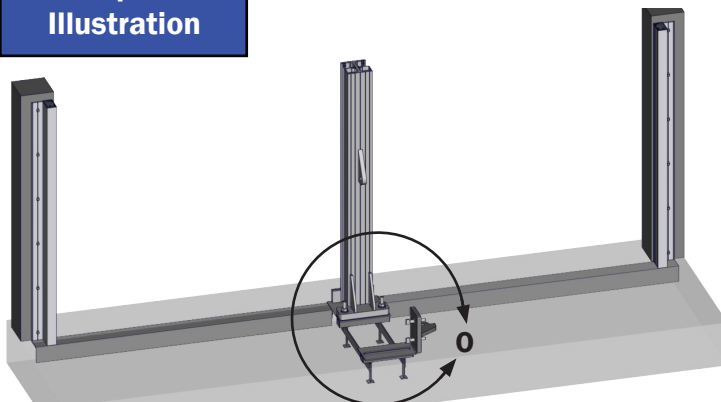
Step 11 Illustration



DETAIL N

STEP 12. Insert T-Bolts in bottom of Turnbuckle mount plate and loosely thread on nuts.

Step 12 Illustration



T-Bolts w/
washers

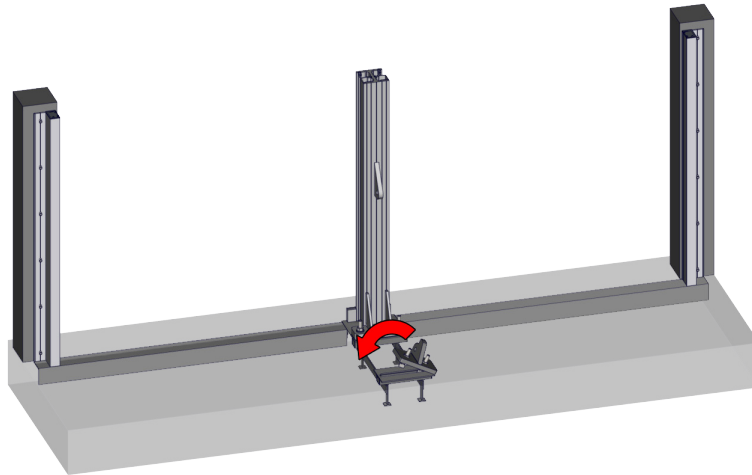
DETAIL O

Mullion Installation

High Water Tension/Tension

- STEP 13.** Line T-Bolts up with channels and tip turnbuckle mounting plate into place.
a. Centering it on the embedded mullion receiver.

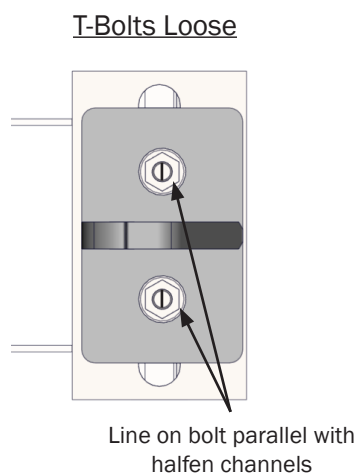
Step 13 Illustration



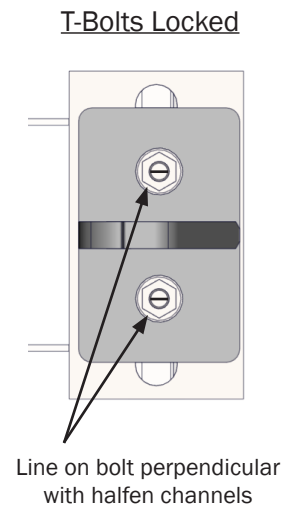
STEP 14.

- a. Spin T-Bolts until line on the bolt is perpendicular to the Halfen channel.
b. Tighten nuts on Halfen Embeds to 89 ft-lbs Unless otherwise specified on Approved for Construction Drawings and/or inside optional Calculations packet.

Step 14 Illustration A



Step 14 Illustration B



NOTICE Do not compress gaskets during storage. Store all mullions in a way that allows gaskets to be free of contact so the gaskets do not become mis-shaped and unusable.

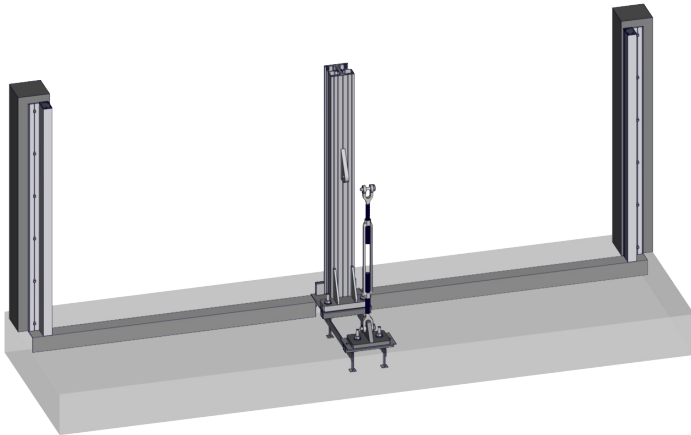
Mullion Installation

High Water Tension/Tension

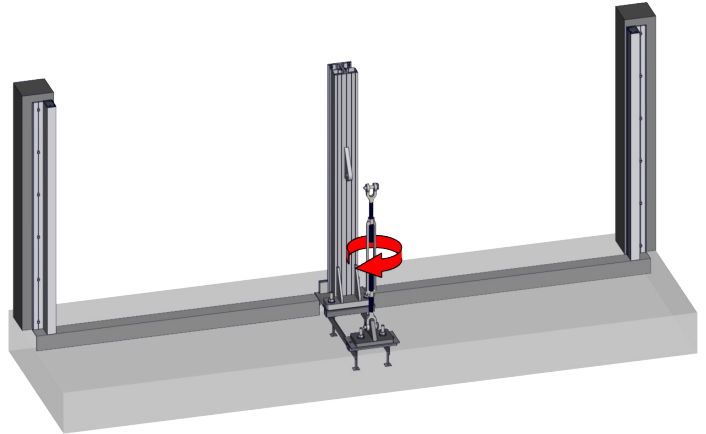
STEP 15. Attach turnbuckle to tieback mount plate.

- a. Adjust until it can be attached to mounting tab on mullion (*Cotter pins required to be installed*).

Step 15
Illustration A



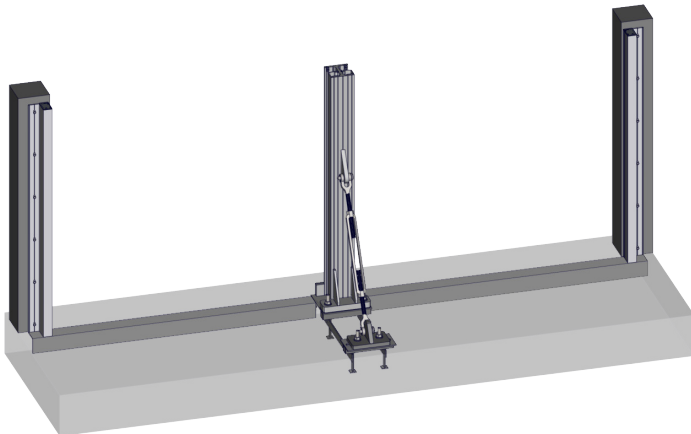
Step 15
Illustration B



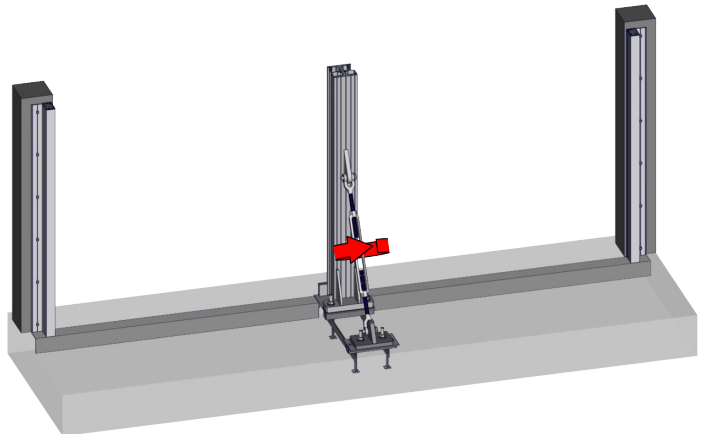
STEP 16. Tighten turnbuckle until snug, making sure to not over-tighten.

- a. Ensure gaskets do not pull off floor on dry-side of mullion.

Step 16
Illustration A



Step 16
Illustration B



STEP 17. Continue with Flood Plank Deployment - Found on Page 30.

Mullion Installation

Post-Installed Thread Inserts

XXII. Hilti Installation

IMPORTANT! Follow included Anchor Manufacturer's technical data manual/installation instructions for installation requirements and proper installation procedures.

STEP 1. Review all Approved for Construction drawings sent with the crated Flood Wall.

The Approved for Construction Drawings are located inside a plastic bag inside the crate. Review all installation labels prior to installation.

STEP 2. Determine sill/embed types and exact placements as called out on Approved for Construction Drawings.

All sealing surfaces must be sound, flat/level, and without blemish for best performance.

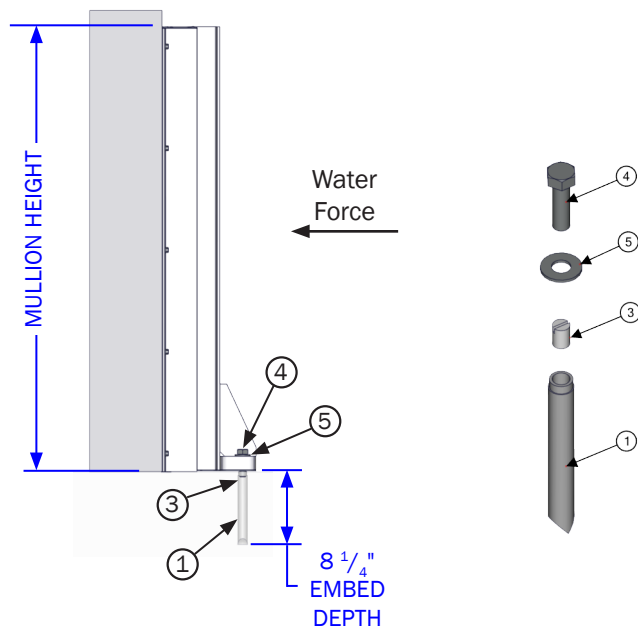
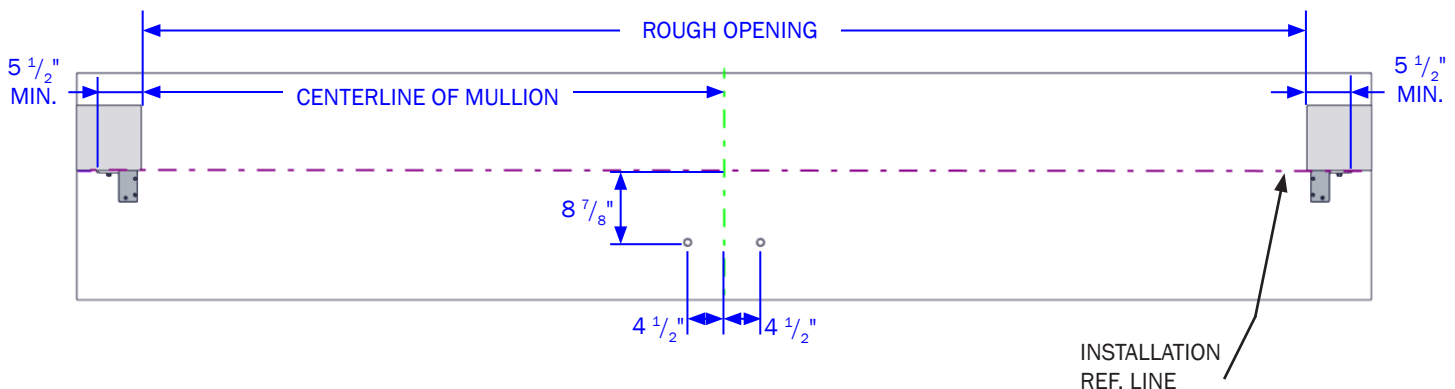
Permissible tolerance is $\pm 1/16$ " per 10 foot length.

STEP 3. Locate Installation Reference Line and mark embedded mullion receiver locations on concrete surface, as detailed on **Post-Installed Thread Inserts Install Reference**.

Required Anchor edge distances specified in Approved for Construction Drawings.

Flood Wall Install Reference

Refer to Approved for Construction Drawings for exact dimensions.



POST-INSTALLED THREAD INSERTS INFO:

MIN. 3000 PSI CONCRETE
14" MIN. CONCRETE THICKNESS
18" MIN. EDGE DISTANCE (SIDES)
13" MIN. EDGE DISTANCE (WET SIDE)
13" MIN. EDGE DISTANCE (DRY SIDE)

POST-INSTALLED THREAD INSERTS HARDWARE

BALLOON	PART #	DESCRIPTION	QUANTITY
1	511818	ANCHOR;HILTI HIS-RN 3/4"-8 1/4"	2
2	512348	EPOXY;HYBRID HY 200-R 16.9 OZ	1
3	512415	SCREW;SET 3/4"-10 X 1" NYLON	2
4	509441	BOLT;HEX3/4"10X2 1/2GR5ZN	2
5	501941	WASHER; FLAT 3/4"x1-15/32"ZN	2

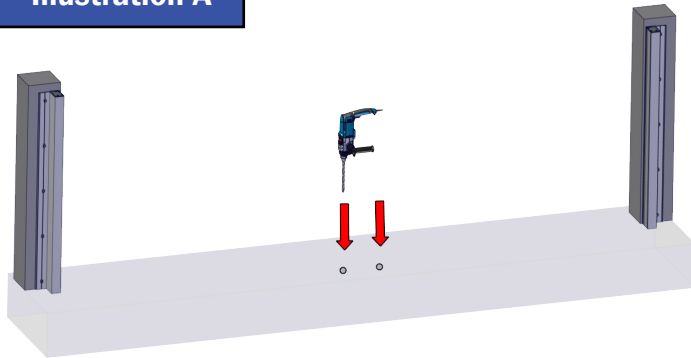
*Unless otherwise specified on Approved for Construction Drawings.
Post-Installed Thread Insert Hardware is based upon sub-floor material.

Mullion Installation

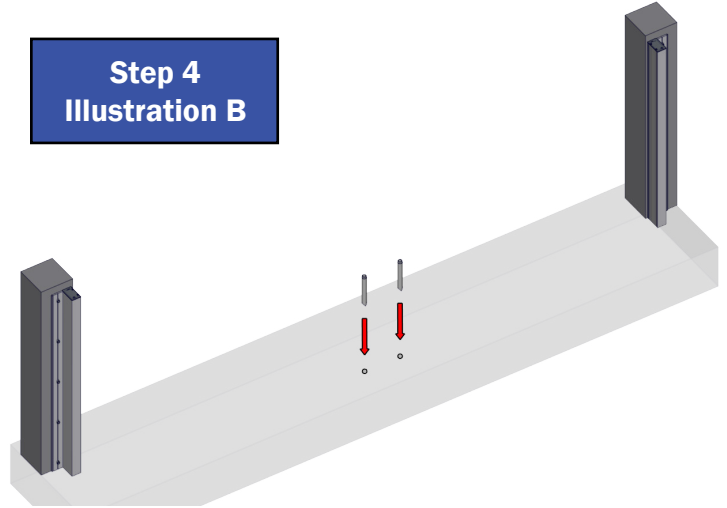
Post-Installed Thread Inserts

- STEP 4.** Installation of internally threaded anchors Refer to included anchor manufacturer's technical manual.
- Drill holes; drill bit diameter as required per included anchor manufacturer's technical manual. Remove all dust and debris from the anchor holes.
 - Fill anchor holes with supplied anchor epoxy before inserting post-installed threaded inserts. Nylon set screws (not shown) are provided for inserts when Mullions are not in use.
 - Clean-up excess anchor epoxy.

**Step 4
Illustration A**

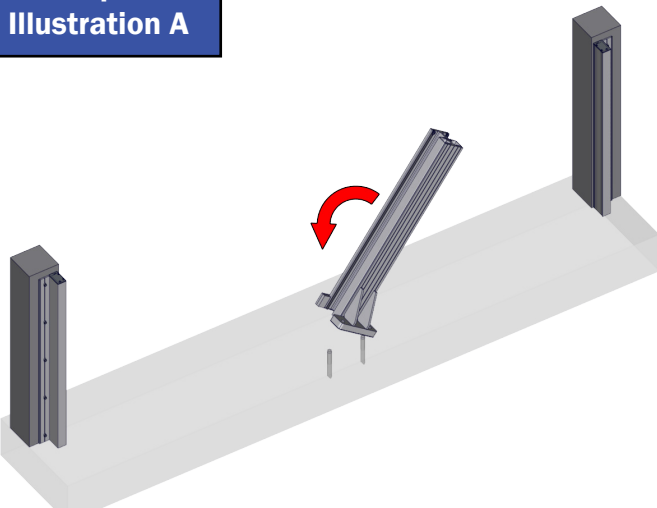


**Step 4
Illustration B**

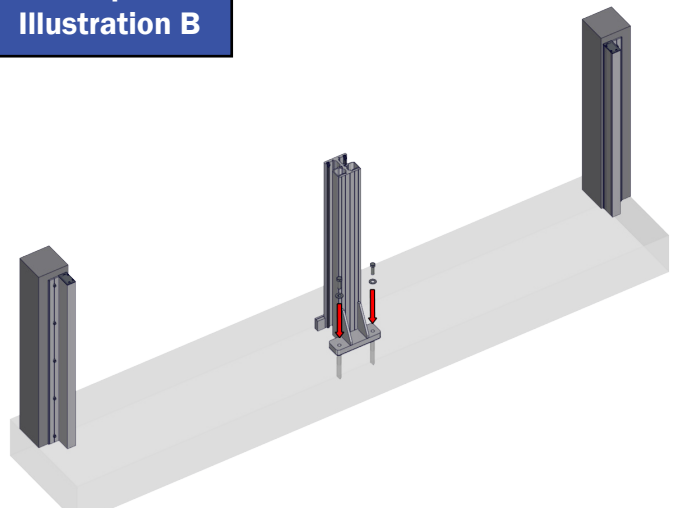


- STEP 5.** Set Mullion in place, referencing Installation Reference Line as specified in Approved for Construction Drawings. Completely thread-in supplied bolts through mullion base plate into post-installed thread inserts.

**Step 5
Illustration A**



**Step 5
Illustration B**



IMPORTANT! Let epoxy fully set before proceeding; required time as specified per included anchor manufacturer's technical manual.

NOTICE PS Flood Barriers recommends completing installation steps fully, testing, and completing a Training Drill for activation prior to storage of Removable Flood Wall.

Flood Plank Installation

Deployment

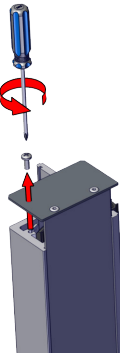
XXIII. Plank Deployment Procedure

NOTICE Operation in a manner other than intended could result in damage or less than acceptable performance at time of need for which the manufacturer will not be held responsible.

NOTE: *Conduct Inspection and Maintenance activities as described in this Operation and Maintenance Manual, at a minimum, annually and seasonally if seasonal flood conditions exist, prior to the flood season. This may require the replacement of gaskets, sealants, anchors, and accounting for all of the latching devices.*

STEP 1. Remove cover assembly from jambs.

Step 1 Illustration

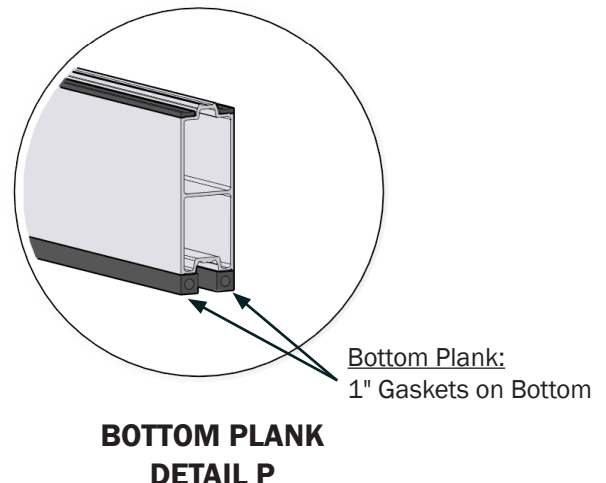
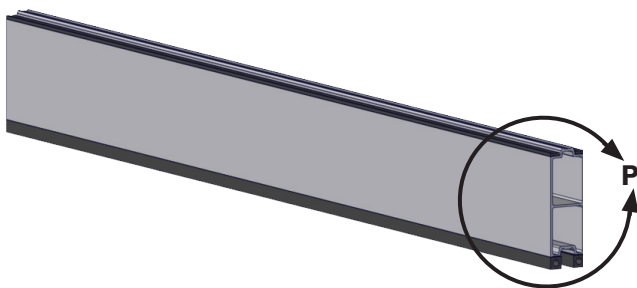


STEP 2. Lube Jamb Seals (recommended to allow flood plank to slide more easily into the jambs)
a. Using a spray bottle filled with a water-dish soap mixture. This may need to be repeated as planks are placed in the jamb. Keep jamb gaskets moist during Flood Plank Deployment.

STEP 3. Remove all debris from sill/gasket sealing surface.

STEP 4. The bottom plank is unique and must be installed first.
a. Locate the flood plank that is labeled "bottom" flood plank, as shown in the Bottom Plank Detail P. The ends of the gaskets have two thick (1") gaskets mounted to the bottom of the plank.

Step 4 Illustration



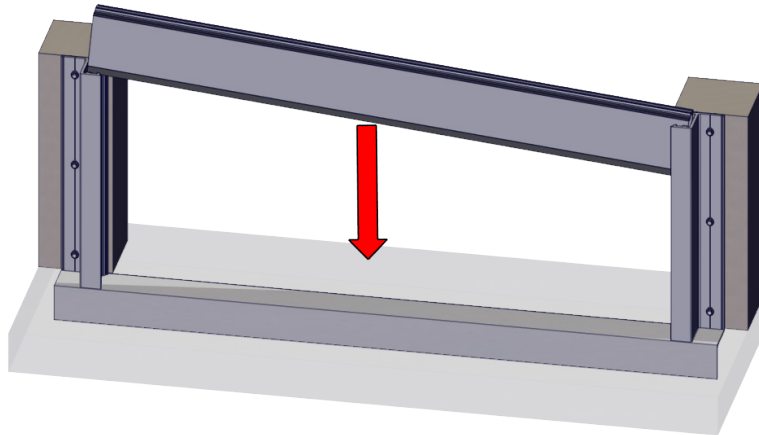
Flood Plank Installation

Deployment

STEP 5. Installation of bottom plank.

- Place one corner of the bottom plank into the bottom corner of the jamb.
- Angle the opposite end of the plank upward until it clears the opposite jamb.
- Slide into the jamb, taking care to not tear the jamb gasket.
- Level plank and slide down to sill/gasket sealing surface.
- Center plank evenly between jambs, ensuring plank fully overlaps the jamb gasket.

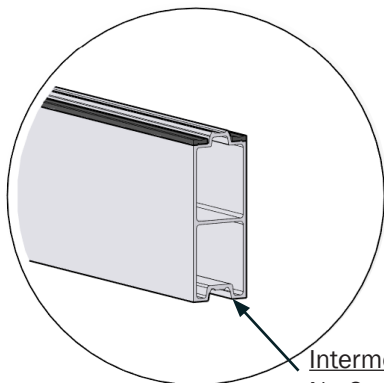
Step 5 Illustration



STEP 6. Install intermediate planks in the same manner as the bottom plank, ensuring contact with plank below.

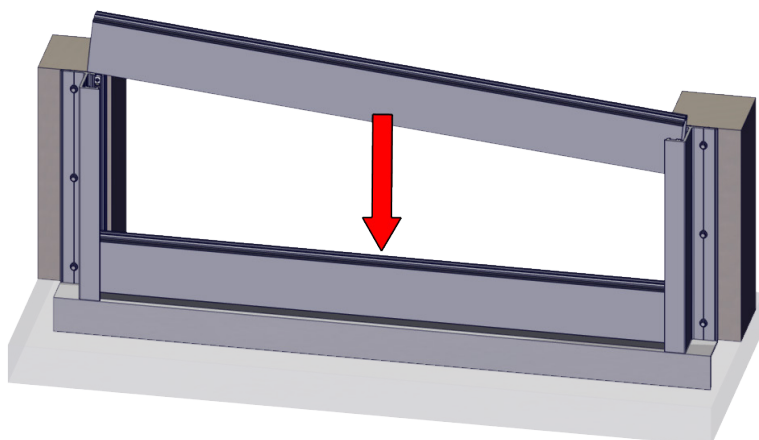
- Ensure each additional plank is fully seated onto the plank below by inspecting for continuous and uniform plank gasket contact between planks. If this is not achieved; remove and re-install the plank before installing subsequent planks.

Step 6 Illustration



Intermediate Plank:
No Gasket on Bottom

INTERMEDIATE PLANK DETAIL



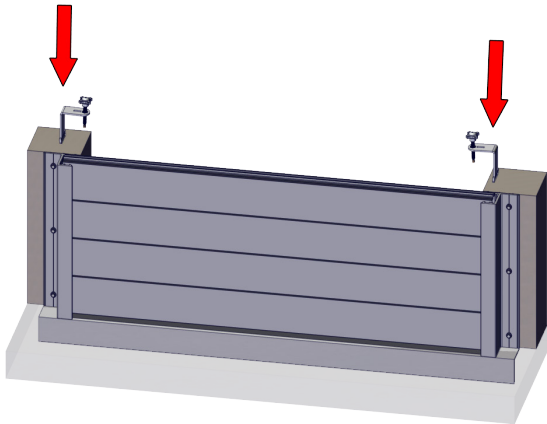
Flood Plank Installation

Deployment

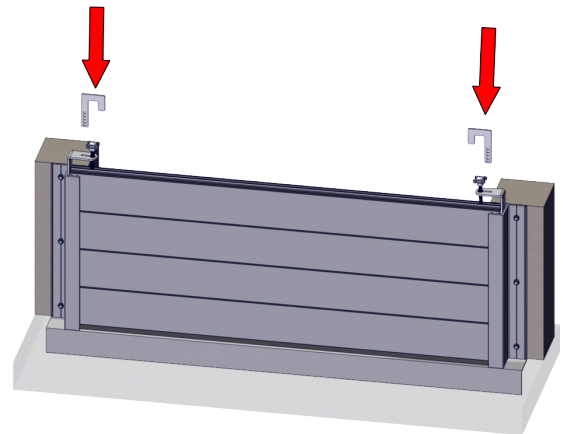
STEP 7. Install latching, making certain to tighten both latch sides evenly to compress planks uniformly. Refer to your Approved for Construction Drawings to determine the type of latching supplied for your Flood Plank.

NOTICE Use of supplied Plank Latch Lock is optional, recommended in locations where tampering of Flood Plank is prevalent. (Shown in Illustration D and Illustration E)

**Step 7
Illustration A**

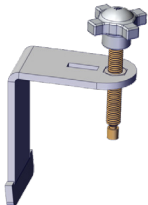


**Step 7
Illustration B**

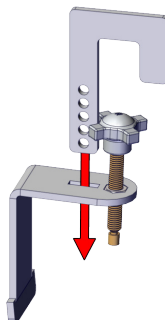


NOTE: PS Flood Barriers requires tightening the Latch Spin Knob to a torque of 40 in-lbs for proper plank gasket compression. *Torque wrench supplied by others, NOT PS Flood Barriers.

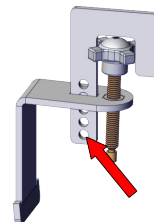
**Step 7
Illustration C**



**Step 7
Illustration D**



**Step 7
Illustration E**



Your Padlock in
highest hole below
latch.

Flood Plank Installation

Removal

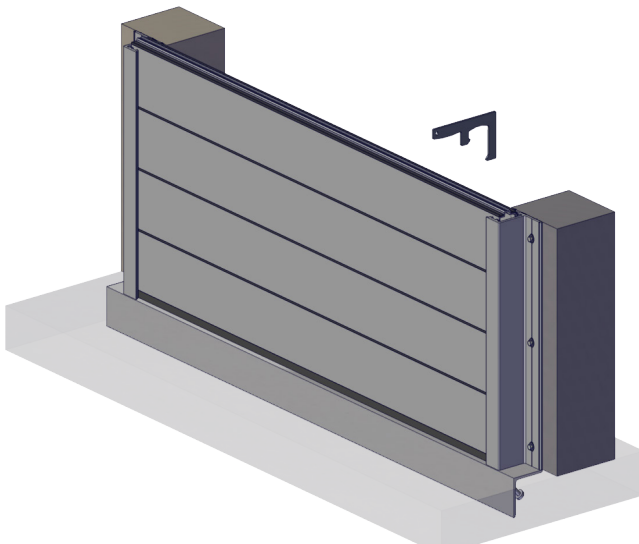
XXIV. Plank Removal Procedure

NOTICE Operation in a manner other than intended could result in damage or less than acceptable performance at time of need for which the manufacturer will not be held responsible.

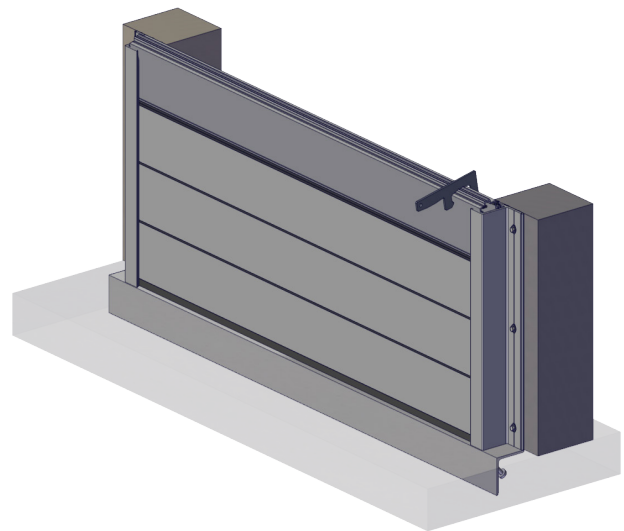
NOTE: *Inspect all components of Flood Wall before storage, making sure to properly clean and remove contaminants. Contact PS Flood Barriers at 877-446-1519 for purchase of replacement components, if necessary.*

- STEP 1.** If planks have been deployed for an extended period of time, spray/hose water to moisten plank/jamb gaskets prior to removal.
- Place plank removal tool on the top plank, shown in Illustration A.
 - Rock back and forth until plank is released from the plank below, shown in Illustration B.
 - Remove plank, taking care not to damage jamb gasket.

**Step 1
Illustration A**



**Step 1
Illustration B**



STEP 2. Repeat Step 1 for all remaining planks.

STEP 3. Inspect all gaskets for damage, continuous adhesion to the attached surface, and proper position and compression before storage.

CRITICAL Do not compress gaskets during storage. Store all planks in a way that allows gaskets to be free of contact so the gaskets do not become mis-shaped and unusable.

Inspection and Maintenance

XXV. Inspection and Maintenance (Minimum Annually)

IMPORTANT! Consult Approved for Construction Drawings and Anchor Manufacture Technical Manual before replacing fasteners, as most have specific design load requirements.

A. Jambs, Sill Assembly:

1. Inspect components for damage and misalignment. Adjust, repair, or replace as needed, to meet original design tolerance.

B. Embedded Items:

1. Inspect all embedded components for corrosion, damage, and misalignment. Adjust, repair, or replace as needed, to meet original design tolerances.
2. Check all connections, making sure they meet original design standards (refer to Approved for Construction Drawings and Anchor Specifications).

C. Fasteners and mechanical connections:

1. All fasteners must be in place and adjusted to their original design standard, per included anchor manufacture technical manual.
2. Replace any damaged components (refer to Approved for Construction Drawings and Anchor Specifications).

D. Sealants and Waterstops:

1. Inspect all sealants used on jambs and connections to ensure their effectiveness.
2. Replace any cracked, loose, and otherwise non-performing sealants.
3. Use only factory approved/supplied products (refer to Approved for Construction Drawings).
 - a. Permanent Jamb factory approved sealant/waterstops: Sika; Sikaflex-227, Quellpaste Typ E.
 - b. Removable Jamb factory approved sealant/waterstops: Red Devil, Inc.; Zip-a-Way Removable Sealant

E. Gasket:

1. Inspect all gaskets for damage, and for continuous adhesion to the attached surface.
2. Visually inspect all gaskets for proper positioning, and compression.
 - a. Inspect all plank gaskets.
 - b. Inspect all jamb gaskets.
3. Replace or repair if damage or deterioration to gaskets has occurred.
4. Use only factory approved materials (refer to Approved for Construction Drawings).

F. Lock/Latch:

1. Operate all latching hardware to ensure smooth, uninhibited movement of all mechanical components.
2. Position flood barrier and check latches for proper engagement. If gaskets are not properly positioned and properly compressed, unlatch flood barrier panel and adjust latching accordingly.

G. Finishes:

1. Inspect all surfaces for signs of wear or corrosion and clean finishes periodically.
2. Touch up repair finishes, or refinish as necessary to protect the structural integrity.

H. Housekeeping:

1. Clean sill and jambs of any debris and keep the area clean throughout the Flood Wall opening.
2. For all surfaces (Industrial Enamel, Epoxy, Powder Coat finishes, Stainless Steel, Aluminum):
 - a. Make a mixture of warm water and a gentle dish soap, using a soft cloth/rag, scrub the jambs and planks.
 - b. Rinse off with water and dry with paper towel.
3. Clean all gaskets and seals with a soft rag with warm water and dry off with paper towel.

I. Labels and Placards:

1. Inspect all labels and placards.
2. Replace any labels and placards which are unreadable/missing.

Inspection and Maintenance Log

CRITICAL Periodic Inspection and Maintenance Required. Inspect at minimum annually.

Date Purchased:

Product:

Model Number:

Serial Number:

Opening Identifier/ Number:

Location:

DATE INSPECTED	INSPECTED BY <i>(Print & Sign)</i>	INSPECTION ITEMS NOTED	CORRECTIVE ACTION	CORRECTED BY <i>(Print & Sign)</i>

PS FLOOD BARRIER WARRANTY REGISTRATION FORM

PS Flood Barriers™ Product Warranty Registration: For PS Flood Barriers™ Products, the Limited Warranty will only be valid if the Owner completes, and returns, this PS Flood Barrier Warranty Registration Form within thirty (30) days of Product installation.

To request additional copies of the Warranty Registration Form, contact PS Industries™ Incorporated, 1150 S. 48th Street, Grand Forks, ND 58201, phone 877-446-1519, email: 4psinfo@psindustries.com. For a fillable form, download a copy from www.psfloodbarriers.com/download-center/ To register online: www.psindustries.com/contact/register-your-product/

The following information is required:

Owner Name: _____	Product Name: _____
Company: _____	Model: _____
Address: _____	Serial Number: _____
State/Province: _____	Date Installed: _____
Zip/Postal Code: _____	
Country: _____	

Although testing of flood barriers is not required, PS Industries™ Incorporated recommends testing flood barriers after installation to verify the suitability of the installation and ensure proper adjustment of flood barrier for optimum performance.

The following information and signatures are required to ensure warranty coverage of installed product.

- Was the flood barrier field tested after installation? ☐ Yes ☐ No
- If tested, which type(s) of testing was conducted? ☐ Hose Test per PS Flood Barriers testing procedure.
☐ Hydrostatic Test per PS Flood Barriers testing procedure.
☐ Other Testing Method (*describe below*):

Owner or Installer Name (Please print.)

Test Witness Name (Please print.)

Signature

Signature

Date

Date

Return form to:

PS Flood Barriers
Attention: Warranty
1150 S. 48th Street
Grand Forks, ND 58201

Fax: 701-746-8340
E-mail: 4psinfo@psindustries.com

(Make additional copies as necessary)

Rev. 022119



877.446.1519

4psinfo@psindustries.com | psfloodbarriers.com
1150 South 48th Street | Grand Forks, ND 58201

Product Registration:
psindustries.com/contact/register-your-product