

HYDRODEFENSE™

Flood Plank™ XL



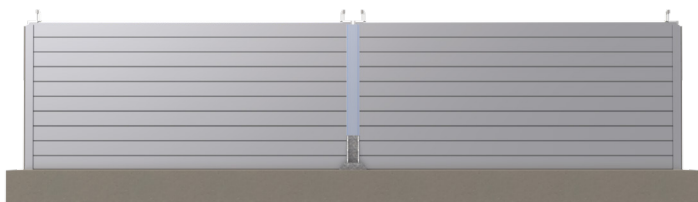
Installation Instructions/Operation and Maintenance Manual

Models:

FP-535

Table of Contents:

- Safety Precautions 2
- Product Information 2
- Sill Installation 4
- Permanent Jamb Installation 6
- Removable Jamb Installation 10
- Dry-Side Support Mullion Installation 14
- Post Mullion Installation 21
- Flood Plank Installation 26
- Inspection and Maintenance 30
- Warranty Registration Form 33



Contact Information

Mail PS Flood Barriers 1150 South 48th Street Grand Forks, ND 58201	Local Phone 701.746.4519 Toll Free Phone 877.446.1519	Website psfloodbarriers.com Email 4psinfo@psindustries.com	Hours of Operation 8 A.M. to 5 P.M. CT Monday – Friday
---	--	---	---

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-535 Flood Plank XL assemblies.
- B. PS Flood Barriers recommends that the owner implement a regular maintenance program to inspect the FP-535 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-535 Flood Plank XL 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. Plank will deflect up to 2" toward the dry-side of the barrier when subject to flood loading conditions. 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 ARE 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-535 Flood Plank XL, 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-535 is a specially designed Flood Plank XL capable of providing flood protection. The Model FP-535 Flood Plank XL 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-535 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 XL 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.

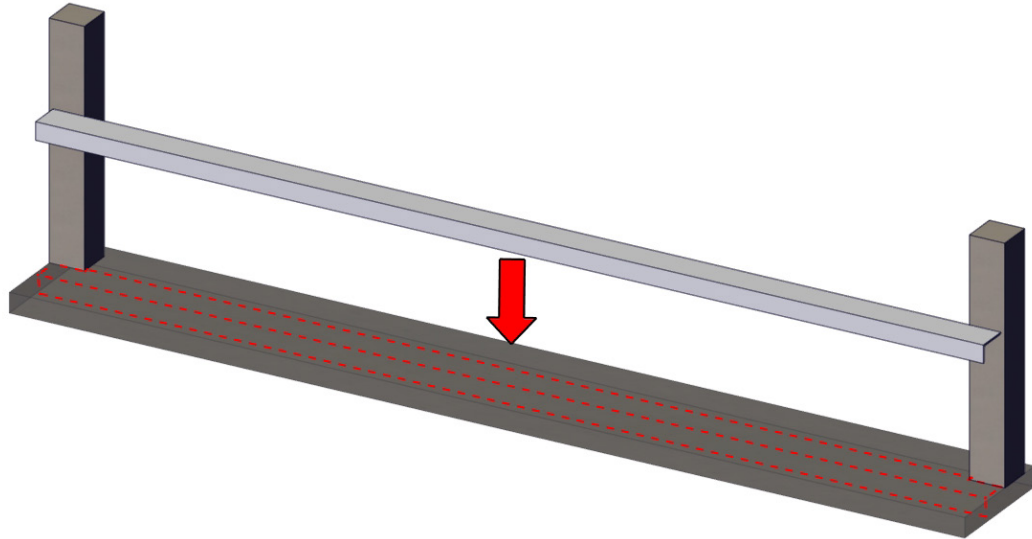
Embedded Sill Angle

STEP 3. Installation of Embedded Sill Angle

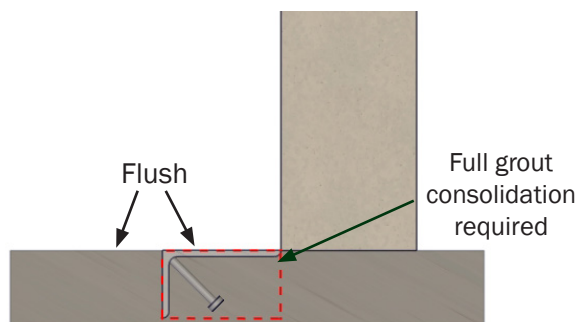
- Place Sill according to Approved for Construction Drawings.
- Grout or concrete, in accordance with grout mfg. instructions. Place embedded sill angle, level into concrete, keeping flush with concrete surface.

IMPORTANT! Allow grout or concrete to fully set before proceeding with Flood Plank XL installation.

Step 3
Illustration A



Step 3
Illustration B



Sill Installation

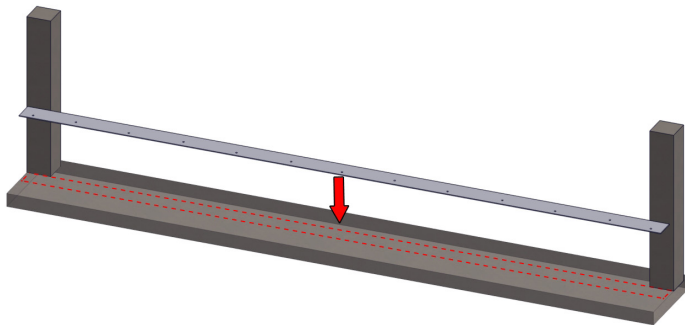
Flat Surface Mounted Sill

STEP 3. Installation of Flat Surface Mounted Sill

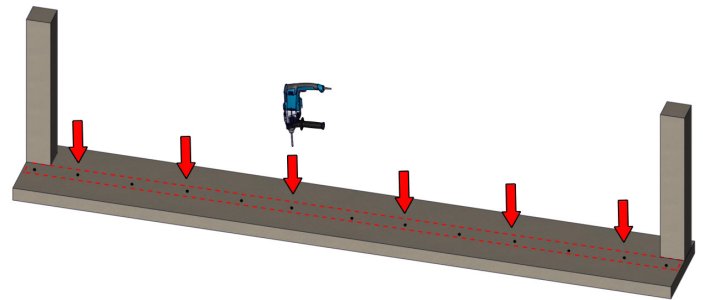
- Place Sill according to Approved for Construction Drawings and mark anchor holes with sill in place.
- Set Sill aside and drill anchor hole diameter as required per included Anchor Specifications; refer to anchor manufacturer's technical data manual for installation limitations and requirements.
- 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.
- Place urethane sealant under each Anchor head, to create a watertight joint, before anchoring sill to concrete surface.

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.

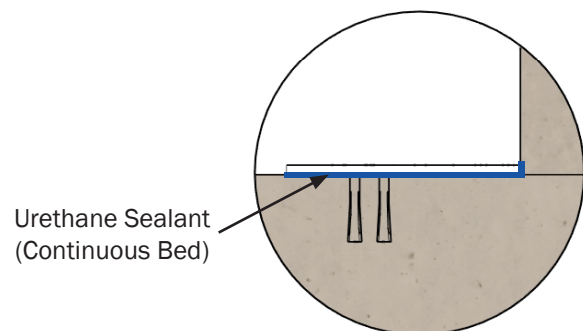
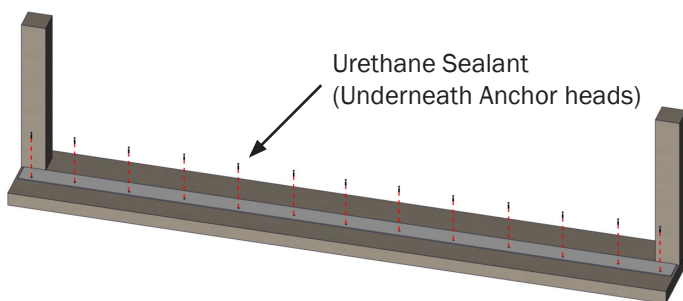
Step 3
Illustration C



Step 3
Illustration D



Step 3
Illustration E



SIDE DETAIL

No Sill

STEP 3. No Sill installation

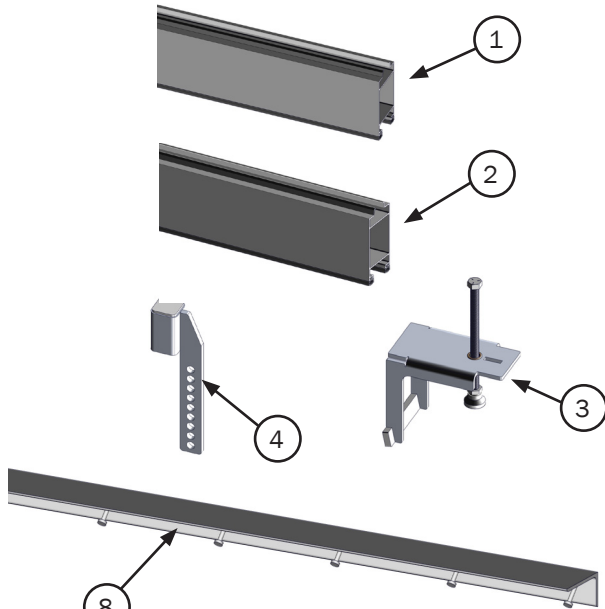
- In applications where the Flood Plank XL gaskets contact the existing building structure, floors, etc. all surfaces must be sound, flat/level, and without blemish for best performance. Floor cracks and expansion joints will cause extreme leakage. Permissible floor tolerance is $\pm 1/16$ " per 10 foot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

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.

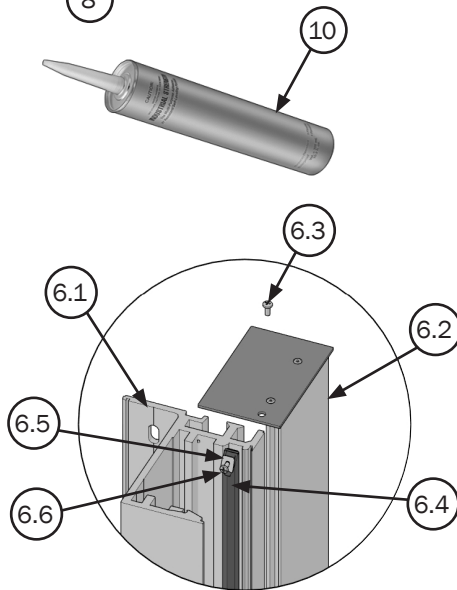


PERMANENT JAMB PARTS LIST			
ITEM #	DESCRIPTION	QTY	PART #
1	FP;BOTTOM PLANK-ALUM	1	BOT P
2	FP;INTER PLANK -ALUM	*	INT P
3	FP535;PLANK LATCH ASSEMBLY (5")	2	514209
4	FP535;PLANK LATCH LOCK	2	514210
5	JAMB FASTENERS **	*	**
6	FP;LEFT SIDE JAMB ASSY **	1	JMBASMLH
7	FP;RIGHT SIDE JAMB ASSY **	1	JMBASMRH
8	FP;SILL ASM **	1	SILL ASM
9	SEALANT; POLYURETHANE, GRAY	2	509809
10	SEALANT; SWELL PASTE TYPEE 100Z	1	500507

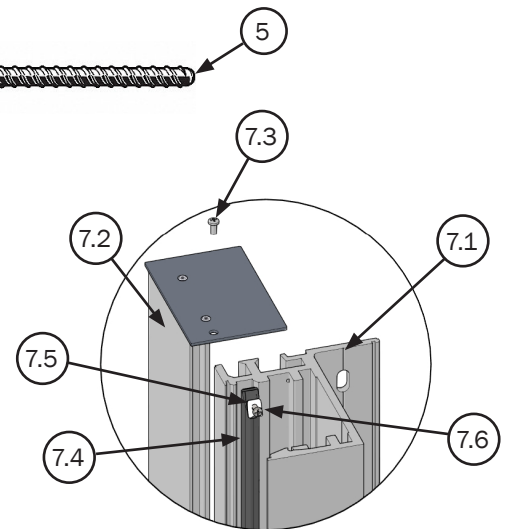
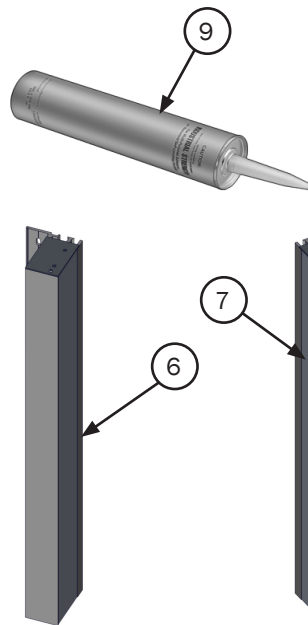
*Refer to Approved for Construction Drawings for quantity.

**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 #
6.1	LEFT JAMB MOUNT EXTRUSION	1	JMBCHNLH
6.2	FP;JAMB COVER	1	JMBCVRLH
6.3	SCREW;RND SLOTMACH12-24X1/2"AL	1	514561
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;RND SLOTMACH12-24X1/2"AL	1	514561
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

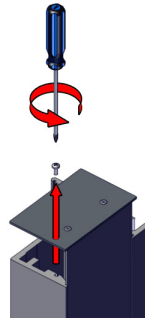
Face Mount Jamb

IX. Permanent Face Mount Jamb Installation

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

STEP 1. Remove cover assembly from jambs.

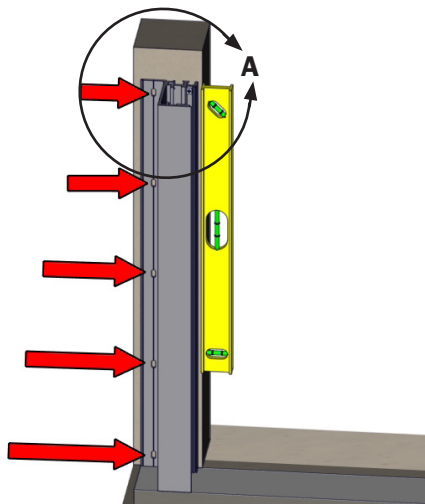
Step 1 Illustration



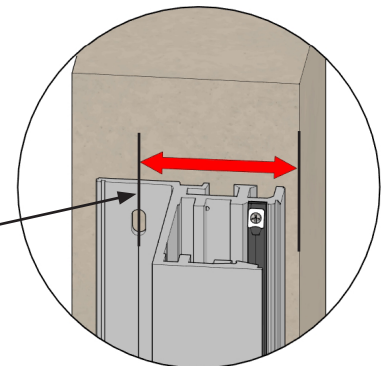
STEP 2. After proper sill installation.

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

Step 2 Illustration



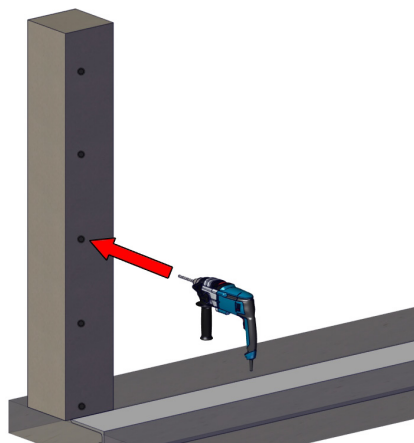
CRITICAL Anchor edge distance.



DETAIL A

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.](#)

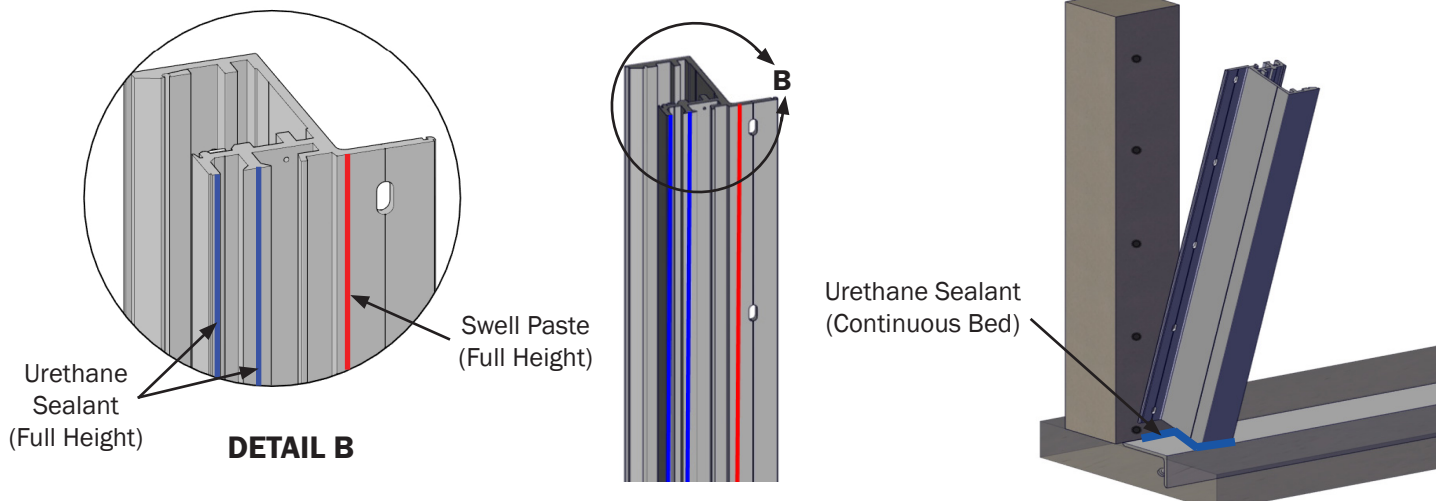
STEP 5. Before placing jamb against existing structure.

- Apply $\frac{1}{8}$ " bead of swell paste (full height), as shown, on back side of jamb. (See Detail B)
- Apply (2) two $\frac{1}{8}$ " beads of urethane sealant (full height), as shown, on back side of jamb. (See Detail B)
- 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

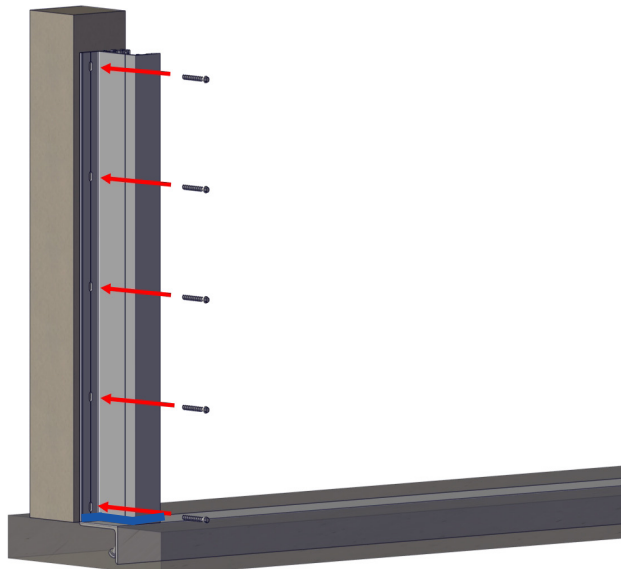
Step 5
Illustration B



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, NQT PS Flood Barriers.

Step 6
Illustration



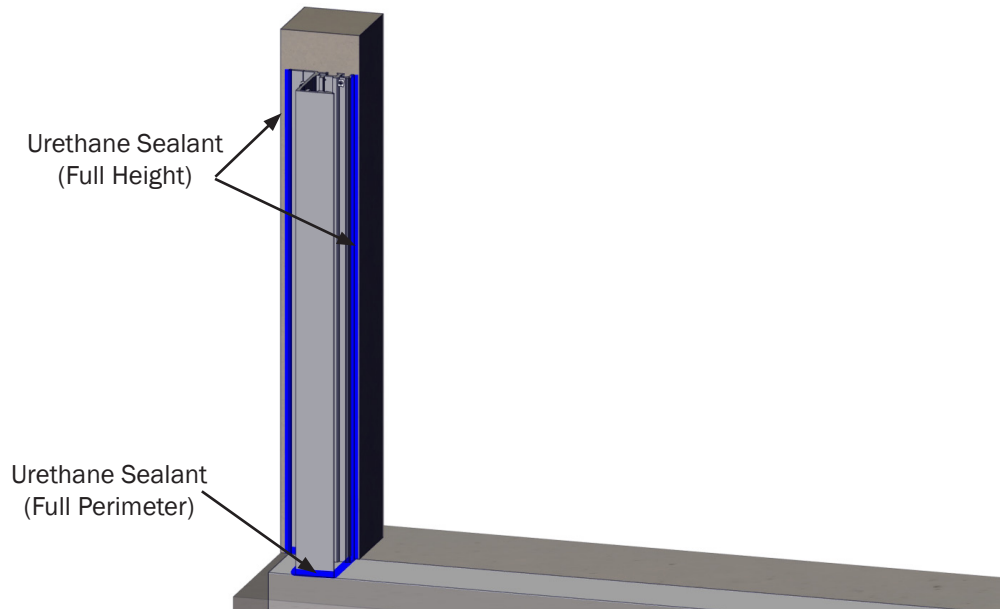
Permanent Jamb Installation

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.

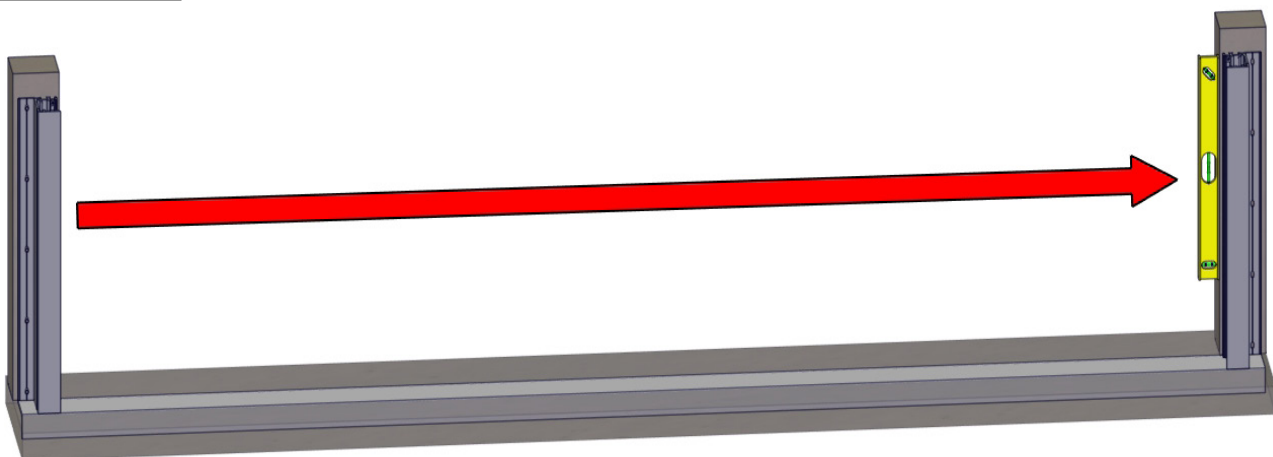
Step 7 Illustration



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



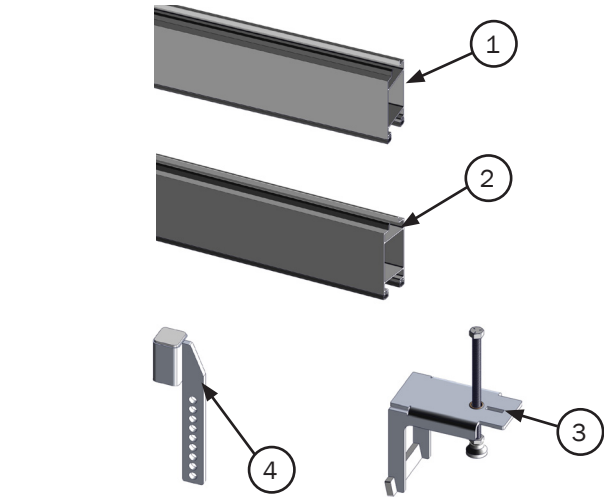
NOTICE PS Flood Barriers recommends completing installation steps fully, testing, and completing a Training Drill for activation prior to storage of Flood Barrier System.

Removable Jamb Installation

Parts List

X. Removable Jamb Parts List

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

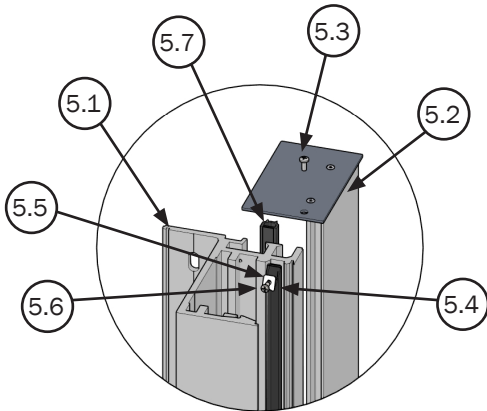
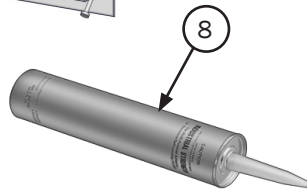
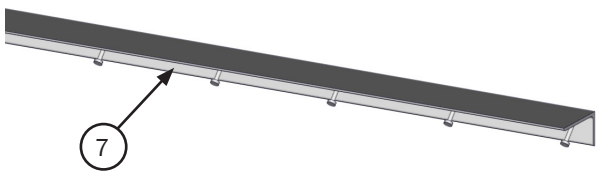


REMOVABLE JAMB PARTS LIST			
ITEM #	DESCRIPTION	QTY	PART #
1	FP;BOTTOM PLANK-ALUM	1	BOT P
2	FP;INTER PLANK -ALUM	*	INT P
3	FP535;PLANK LATCH ASSEMBLY (5")	2	514209
4	FP535;PLANK LATCH LOCK	2	514210
5	FP;LEFT SIDE JAMB ASSY **	1	JMBASMLH
6	FP;RIGHT SIDE JAMB ASSY **	1	JMBASMRH
7	FP;SILL ASM **	1	SILL ASM
8	WS;SEALANT;REMOVABLE	2	512654
9	JAMB ANCHOR SYSTEMS **	*	**

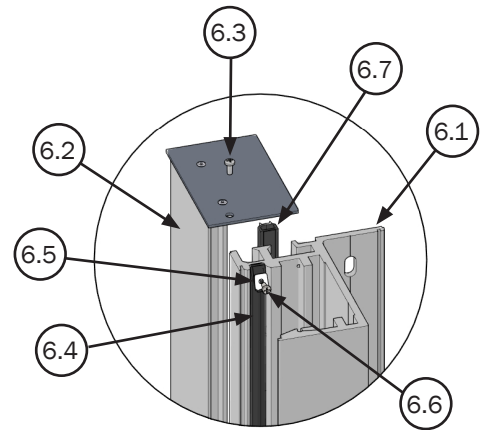
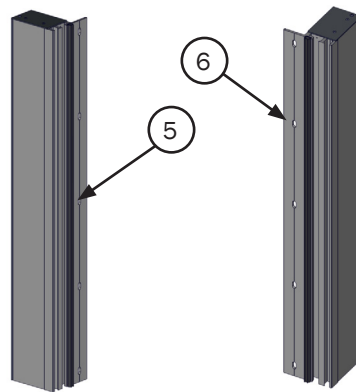
*Refer to Approved for Construction Drawings for quantity.

**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;RND SLOTMACH 12-24X1/2"AL	1	514561
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;RND SLOTMACH 12-24X1/2"AL	1	514561
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

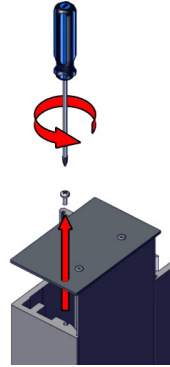
Face Mount Jamb

XI. Removable Face Mount Jamb Installation

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

STEP 1. Remove cover assembly from jambs.

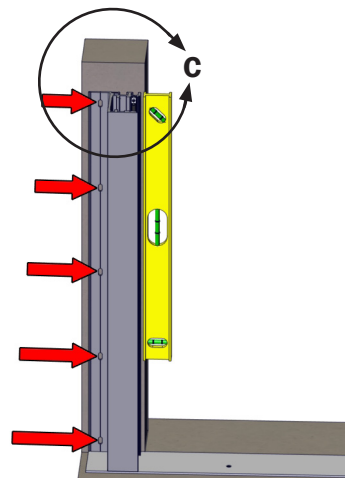
Step 1 Illustration



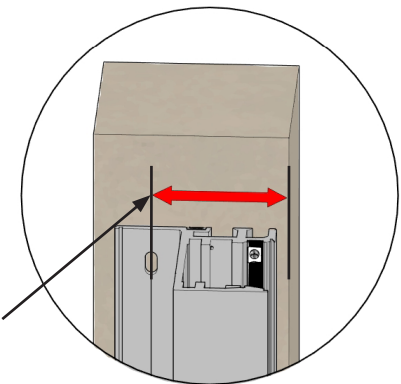
STEP 2. After proper sill installation.

- 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



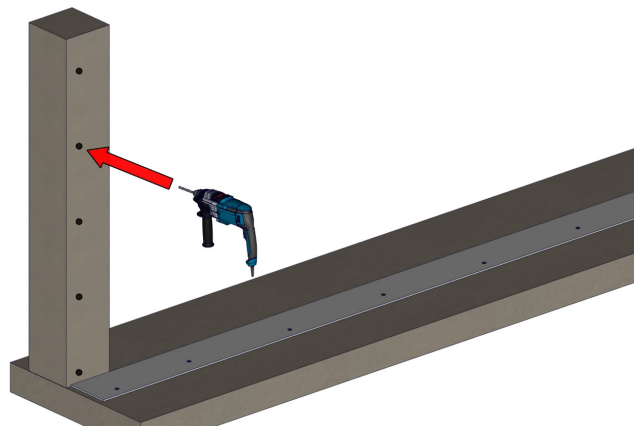
CRITICAL Anchor edge distance.



DETAIL C

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

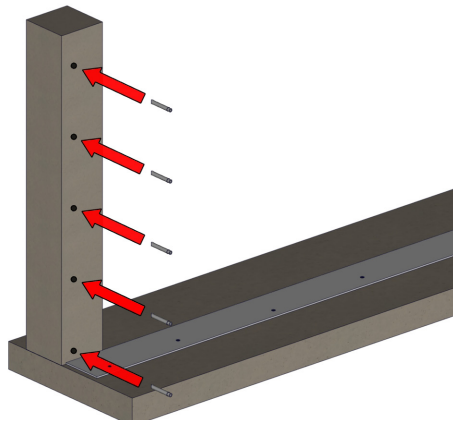
STEP 4. Remove all dust and debris from anchor holes [per included Anchor Manufacturer's technical manual](#).

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

- Make sure anchor is flush or slightly below face of wall.
- Clean up any excess epoxy around holes and on wall surface.
- Nylon set screws (not shown) are provided for inserts when jambs are not in use.

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

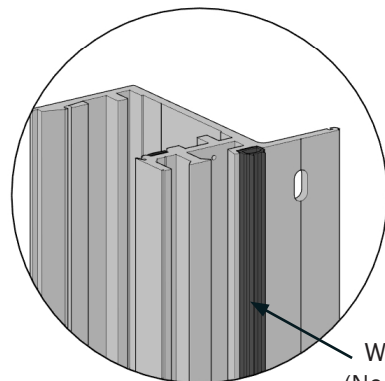
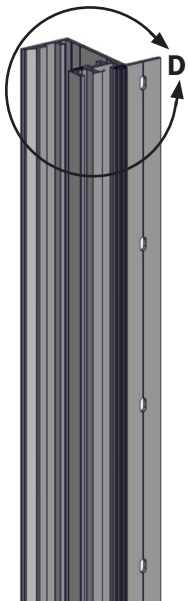
Step 5 Illustration



STEP 6. Before placing jamb against existing structure.

- 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 D) to create a watertight seal with the wall and floor.

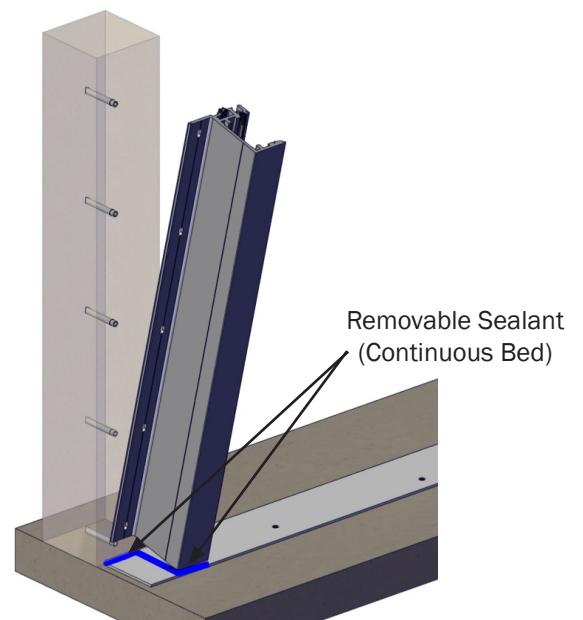
Step 6 Illustration A



DETAIL D

Wall Gasket
(No Swell Paste
required)

Step 6 Illustration B



Removable Jamb Installation

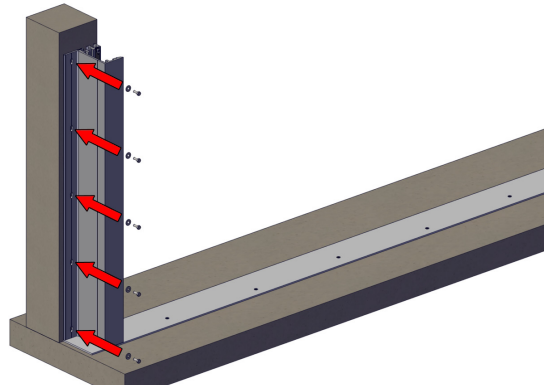
Face Mount Jamb

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.

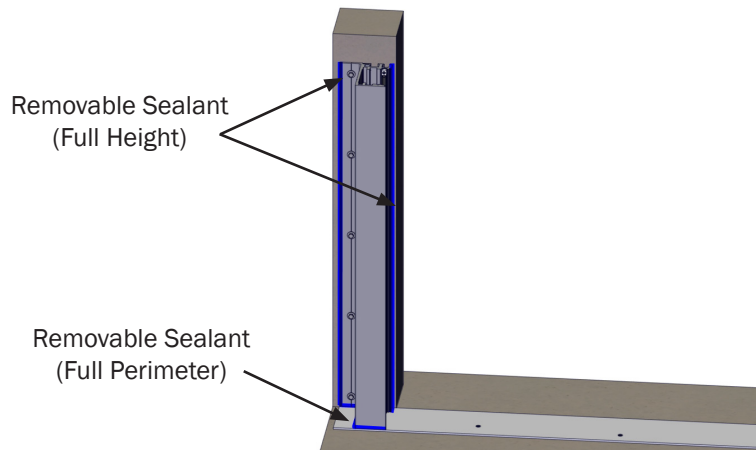
Step 7 Illustration



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.

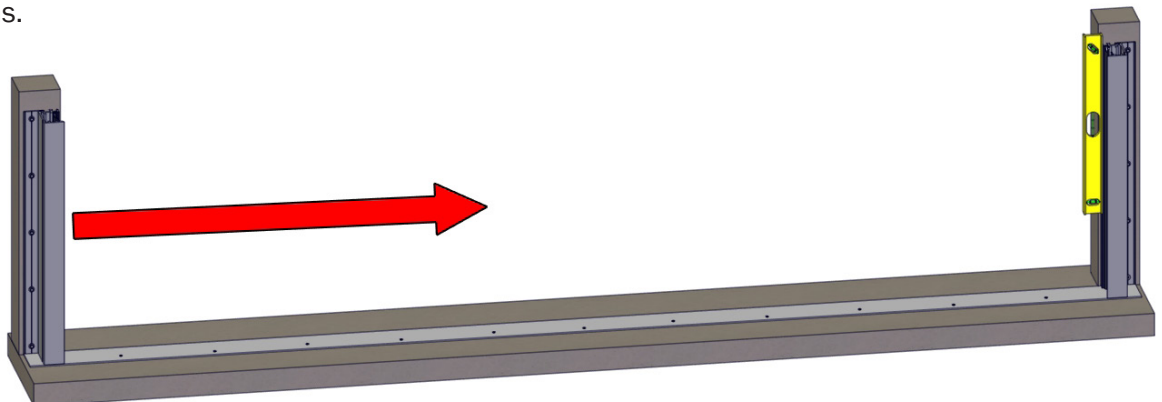
Step 8 Illustration



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.

Mullion Installation

Dry-Side Support Embedded Mullion Receiver

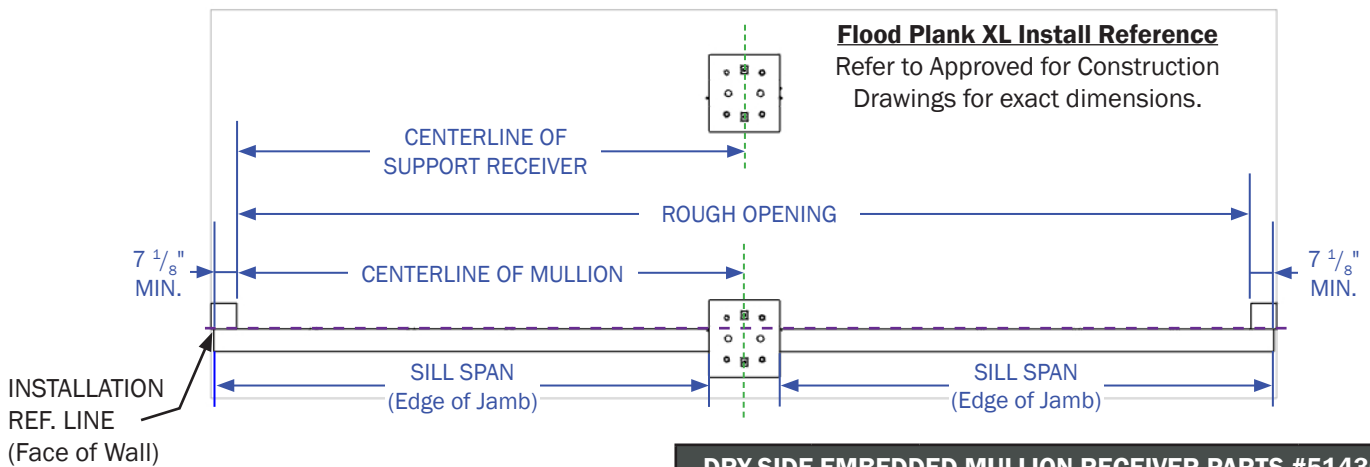
XII. Dry-Side Support Embedded Mullion Receiver Installation

NOTICE Only use Approved for Construction Drawings.

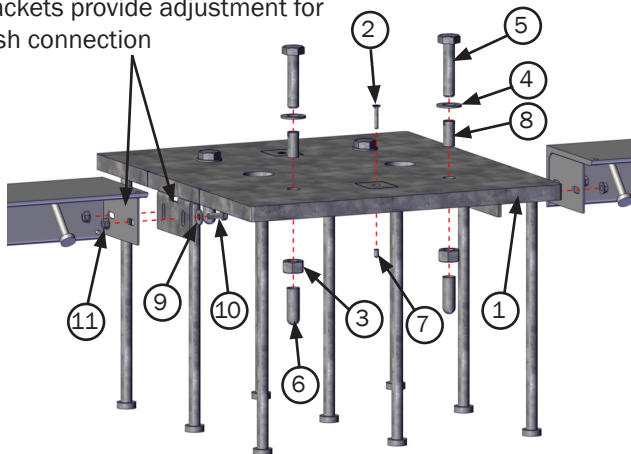
STEP 1. Review all Approved for Construction drawings sent with the crated Flood Plank XL.
The Approved for Construction Drawings are located inside a plastic bag inside the crate. Review all installation labels prior to installation.

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 sill 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.



Bolt together system with slotted brackets provide adjustment for flush connection



DRY-SIDE EMBEDDED MULLION RECEIVER PARTS #514306			
BALLOON	PART #	DESCRIPTION	QUANTITY
1	514305	FP535;DRY MULL EMBED-RAW	1
2	514484	SCREW;FLSOCKCAP3/8"16X1 1/2"ZN	2
3	502800	NUT;HEAVY HEX 3/4"10X 2H GALV	4
4	506754	WASHER;FLAT 3/4", HDGALV	4
5	514433	BOLT;HEX 3/4X3-1/2 A325 GALV	4
6	514443	CAP;RND VINYL 2"X3/4"	4
7	511310	CAP;VINYL 1/4"-5/16" BLACK	2
8	514449	SCREW;SET 3/4"-10 X 1-5/8" NYL	4
9	501947	WASHER;FLAT 3/8"ZN	4
10	500400	BOLT;HEX3/8"16X1GR5ZN	4
11	501085	NUT;FLANGE 3/8"16ZN-CASE HARD	4
NOT SHOWN	514261	L-KEY;HEX 7/32"	1

Mullion Installation

Dry-Side Support Embedded Mullion Receiver

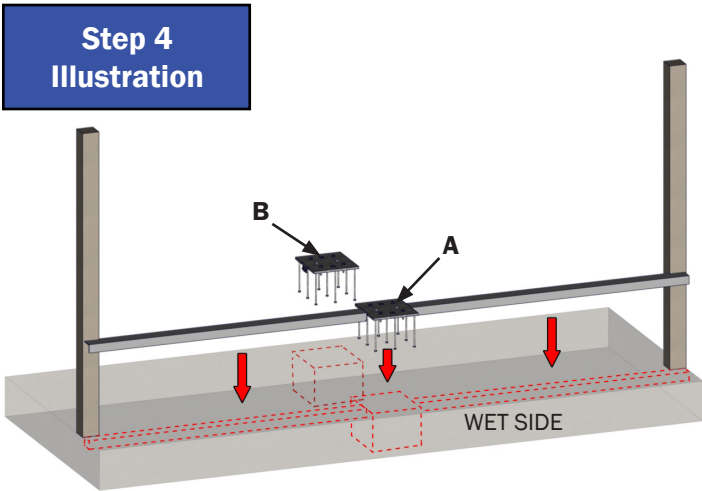
STEP 4.

- a. Place embedded mullion receiver and sills according to Approved for Construction Drawings.
- b. 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.



EMBEDDED MULLION POST RECEIVER INFO: (A)

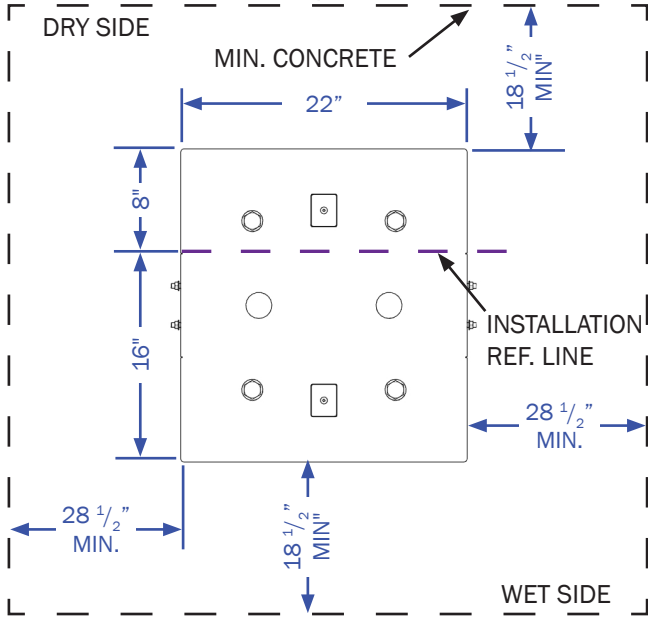
- MIN. 4000 PSI CONCRETE
- 24" MIN. CONCRETE THICKNESS
- 28 1/2" MIN. EDGE DISTANCE (SIDES)
- 18 1/2" MIN. EDGE DISTANCE (WET SIDE)
- 18 1/2" MIN. EDGE DISTANCE (DRY SIDE)

EMBEDDED MULLION SUPPORT FOOT RECEIVER INFO: (B)

- MIN. 4000 PSI CONCRETE
- 24" MIN. CONCRETE THICKNESS
- 52 1/2" MIN. EDGE DISTANCE (SIDES)
- 22 1/2" MIN. EDGE DISTANCE (WET SIDE)
- 22 1/2" MIN. EDGE DISTANCE (DRY SIDE)

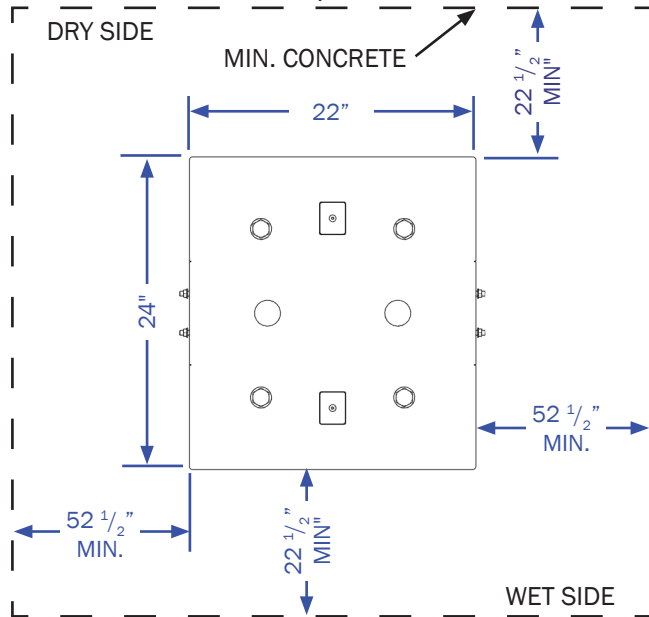
Embedded Mullion Post Receiver Install Reference (A)

Refer to Approved for Construction Drawings for exact placement.



Embedded Mullion Support Foot Install Reference (B)

Refer to Approved for Construction Drawings for exact placement.



CRITICAL Do not disassemble bolts until concrete is fully set.

IMPORTANT! Allow concrete to fully set before proceeding with Dry-Side Support Mullion installation.

Mullion Installation

Dry-Side Support

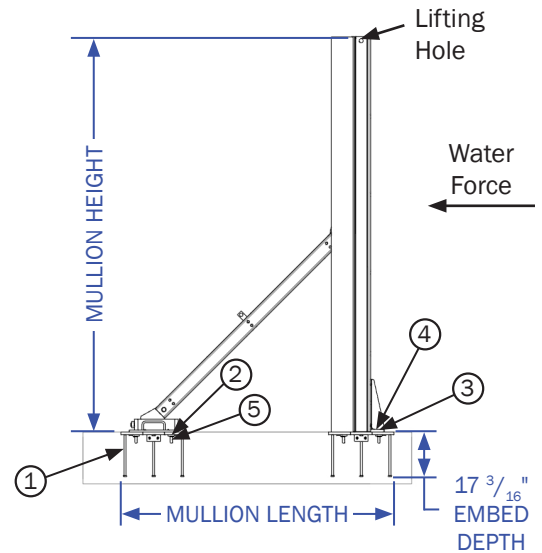
XIII. Dry-Side Support Mullion Installation

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

Dry-Side Supported



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

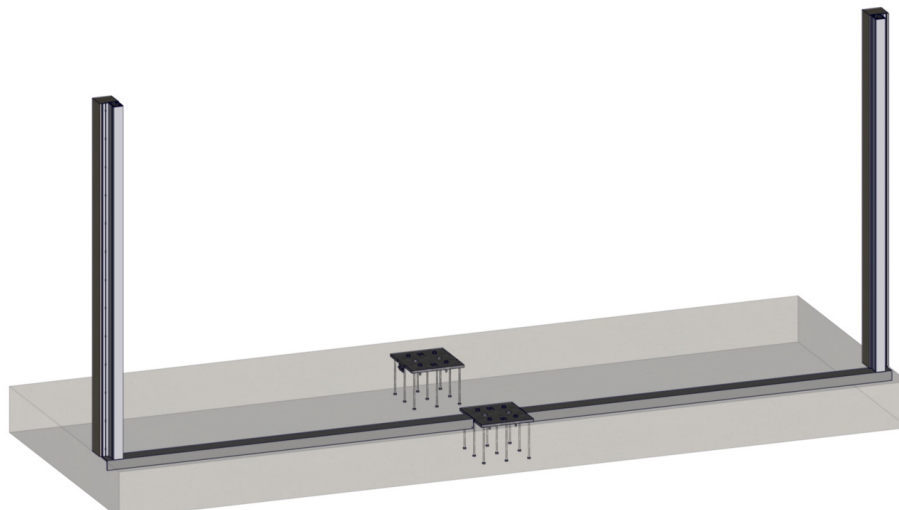


DRY-SIDE EMBEDDED MULLION RECEIVER HARDWARE			
BALLOON	PART #	DESCRIPTION	QUANTITY
1	514306	FP535;HDFW DRY MULL EMBED-GALV	2
2	*502800	NUT;HEAVY HEX 3/4"10, 2H GALV	8
3	*506754	WASHER;FLAT 3/4", HDGALV	8
4	*514433	BOLT;HEX 3/4X3-1/2 A325 GALV	8
5	514443	CAP; RND VINYL 2"X3/4"	8
NOT SHOWN	514449	~SCREW;SET 3/4"-10 X 1-5/8" NYL	8
*Unless otherwise specified on Approved for Construction Drawings. ~Nylon set screw for when mullion is not in place.			

MULLION ANCHOR TORQUE RATINGS:
EMBEDDED MULLION RECEIVER: 125 FT-LB

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

Step 1
Illustration

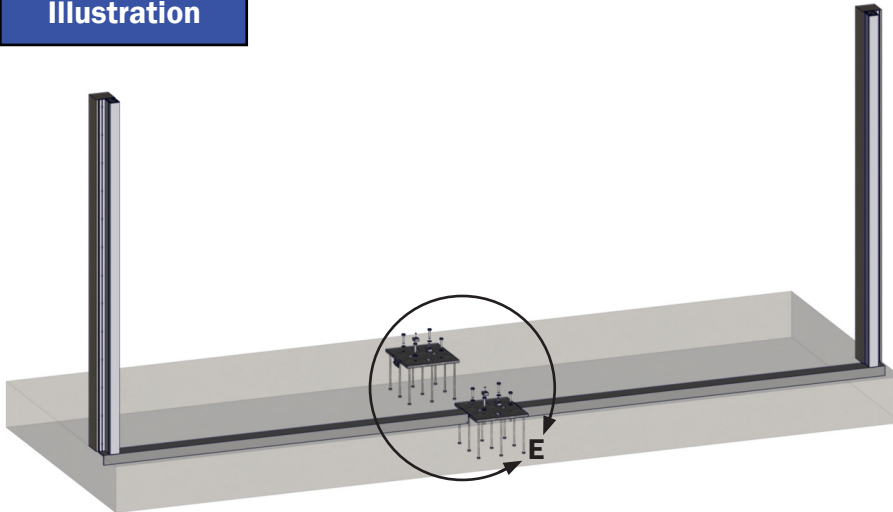


Mullion Installation

Dry-Side Support

- STEP 2.** Remove shear lug cut out with $\frac{7}{32}$ " Allen Wrench.
 a. Remove nylon plugs from mounting holes.

Step 2 Illustration



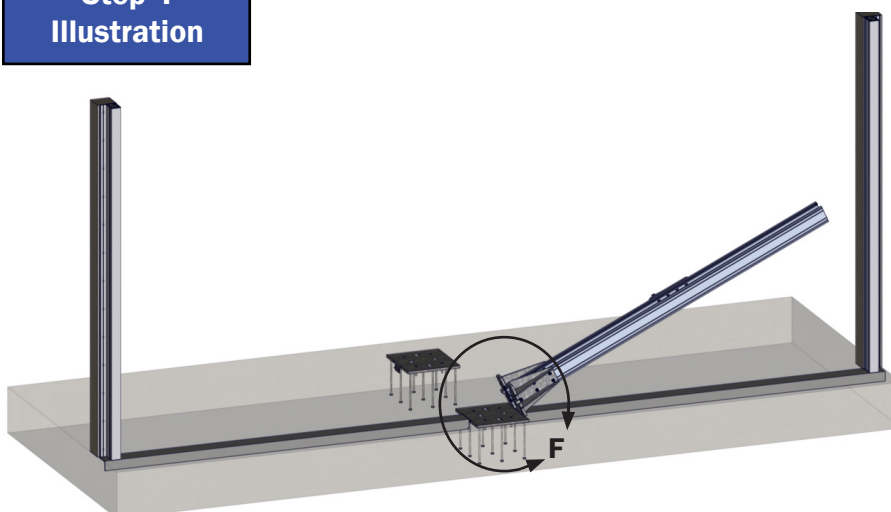
DETAIL E

- CRITICAL** Inspect all mullion gaskets for damage, continuous adhesion to the attached surface, and proper position and compression before installation.

- STEP 3.** Remove any water and debris that has collected inside the shear lug cut-outs and mounting holes.

- STEP 4.** Place mullion on embedded receiver.
 a. Be sure shear lugs go into cut-outs.

Step 4 Illustration



Shear Lugs

DETAIL F

Mullion Installation

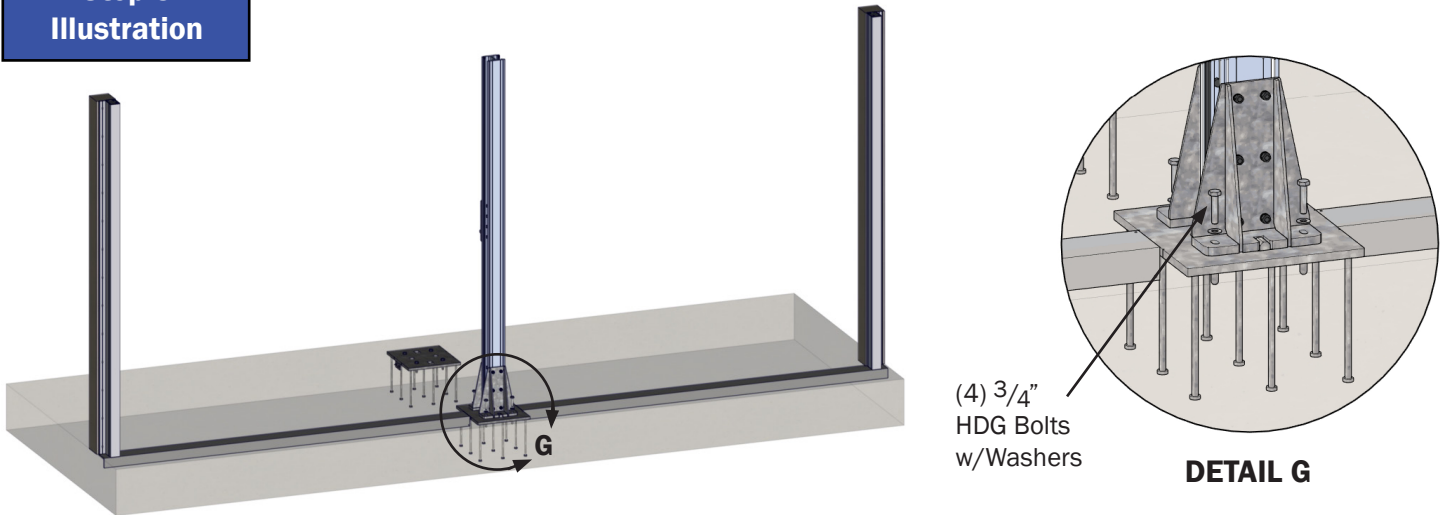
Dry-Side Support

STEP 5. Tighten bolts on embedded mullion receiver to 125 ft-lbs with provided HDG bolts using 1 1/4" wrench or socket.

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

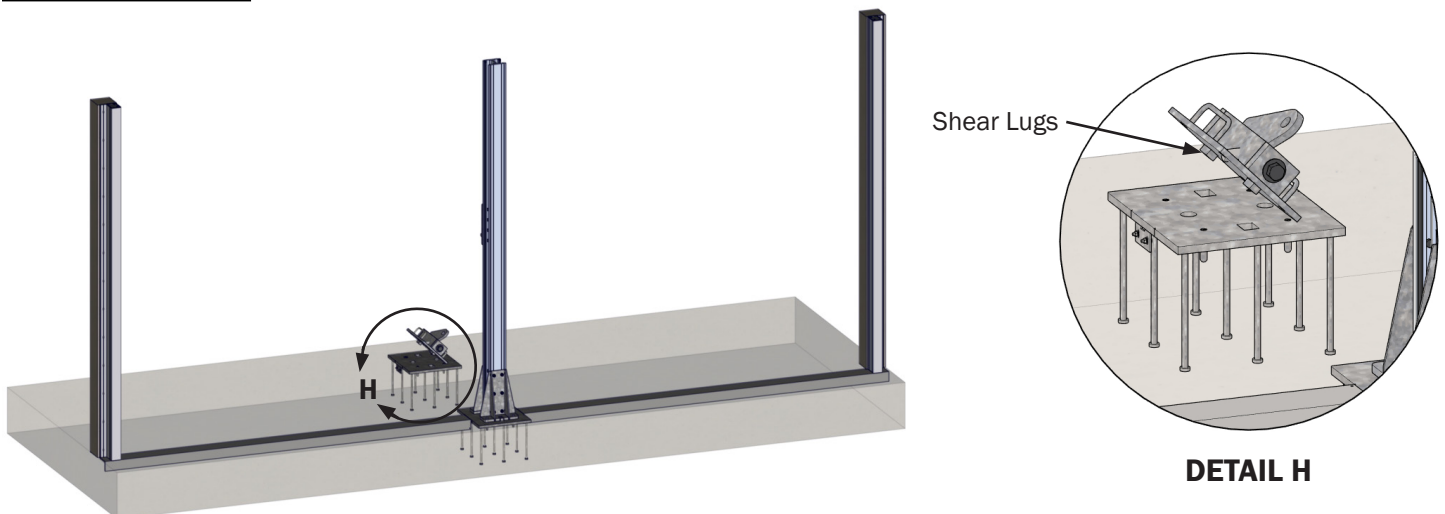
▲ WARNING The flood protective barrier components ARE heavy, consult Approved for Construction drawings and included documents for weights and use appropriate lifting procedures and equipment.

Step 5 Illustration



STEP 6. Place dry-side support mount on embedded receiver.
a. Be sure shear lugs go into cut-outs.

Step 6 Illustration



Mullion Installation

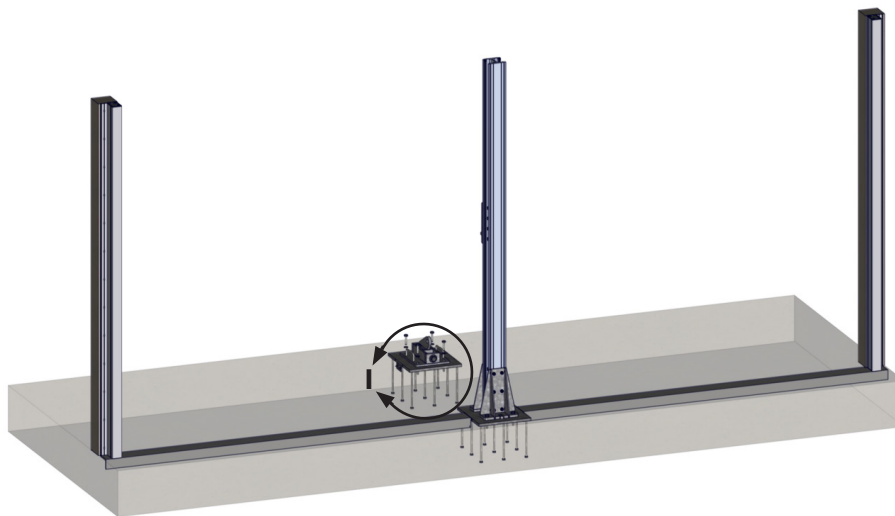
Dry-Side Support

STEP 7. Tighten bolts on dry-side support mount to 125 ft-lbs with provided HDG bolts using 1 1/4" wrench or socket.

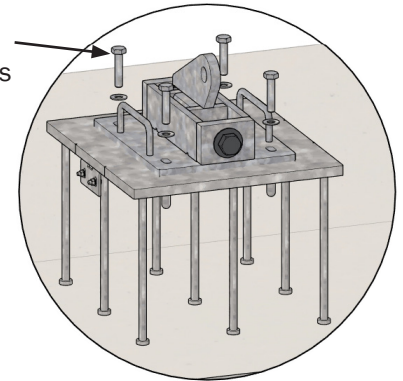
*Torque wrench supplied by others, NOT PS Flood Barriers.

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

Step 7 Illustration



(4) 3/4"
HDG Bolts
w/Washers

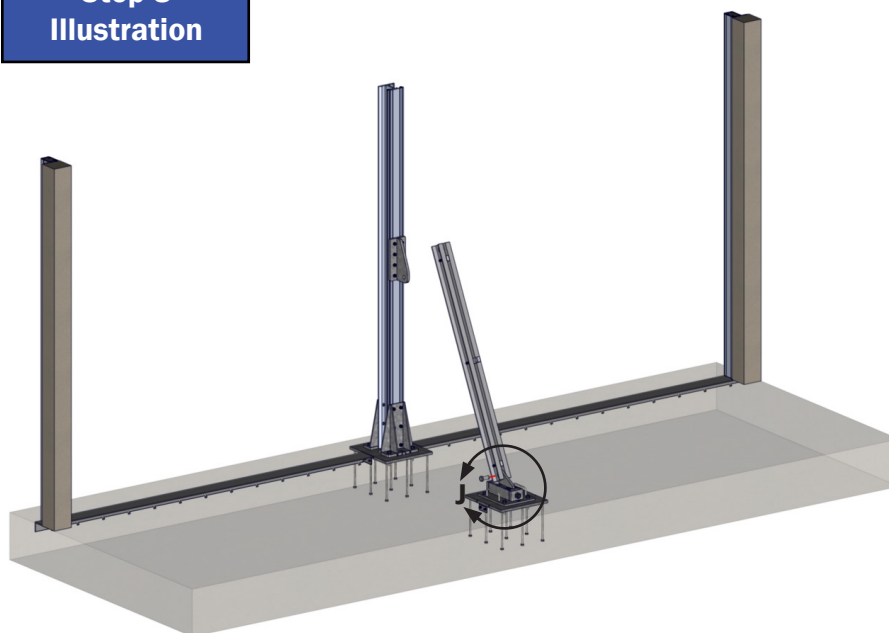


DETAIL I

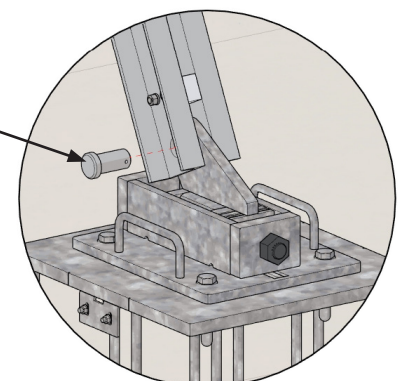
STEP 8. Attach support brace to support mount using clevis pin.

a. Attach to mounting point on mullion post using clevis pin, secure using supplied cotter pin.

Step 8 Illustration



Clevis Pin



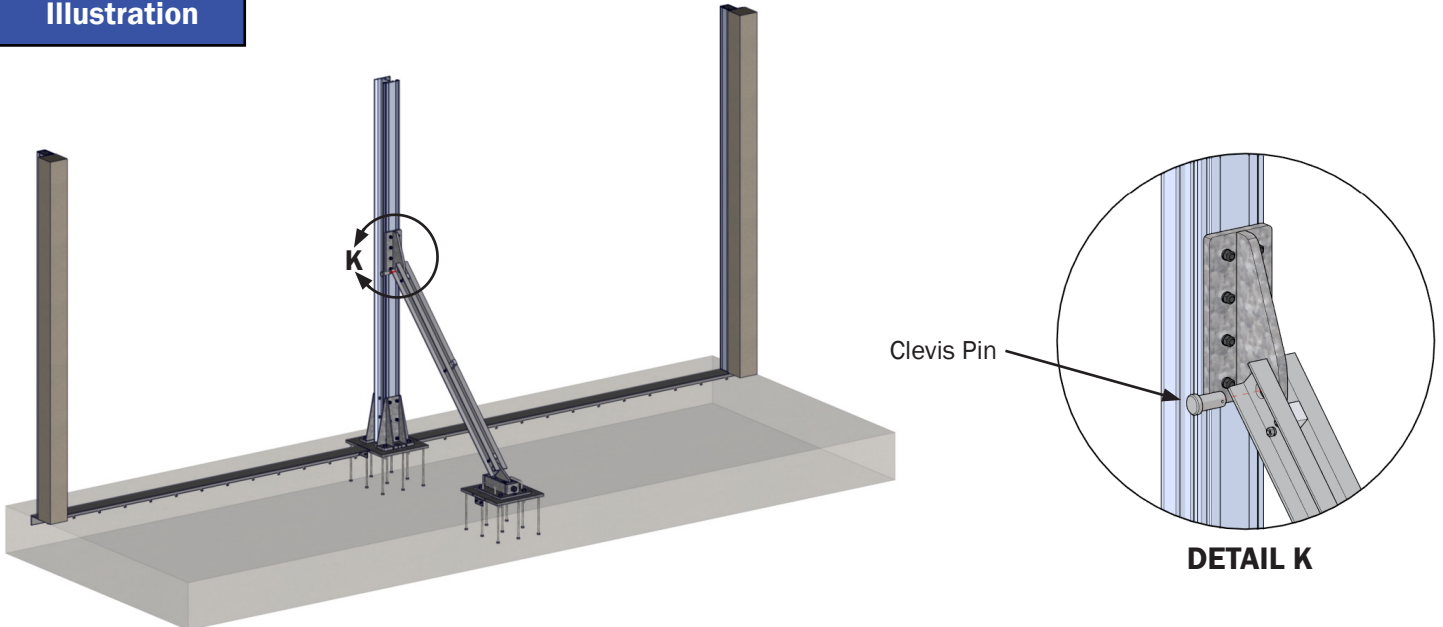
DETAIL J

Mullion Installation

Dry-Side Support

STEP 9. Attach to mounting point on mullion post using the other clevis pin, secure using supplied cotter pin.
a. Support mount may need to be adjusted for support brace to fit appropriately.

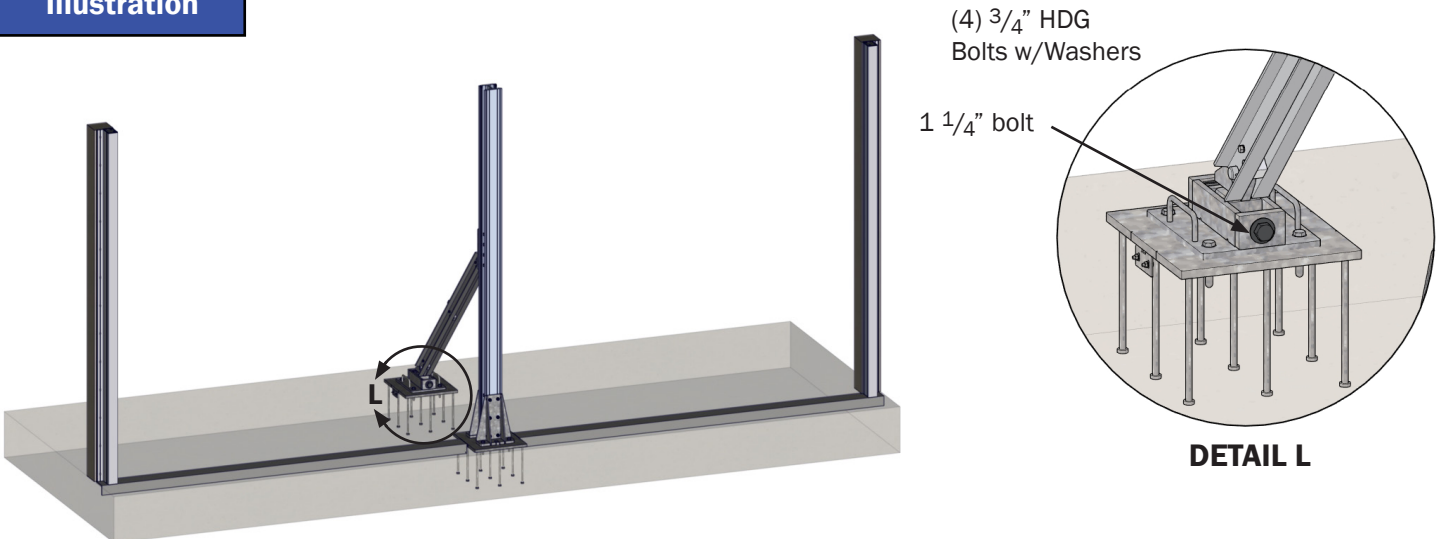
Step 9 Illustration



STEP 10. Tighten 1 1/4" bolt in support mount until brace is snug against both the mounts.
a. Make sure support foot can't slide away from mullion.

NOTICE Do not over-tighten, brace should be snug.

Step 10 Illustration



STEP 11. Continue with Flood Plank Deployment - Found on Page 26.

Mullion Installation

Post Embedded Mullion Receiver

XIV. Post Embedded Mullion Receiver Installation

NOTICE Only use Approved for Construction Drawings.

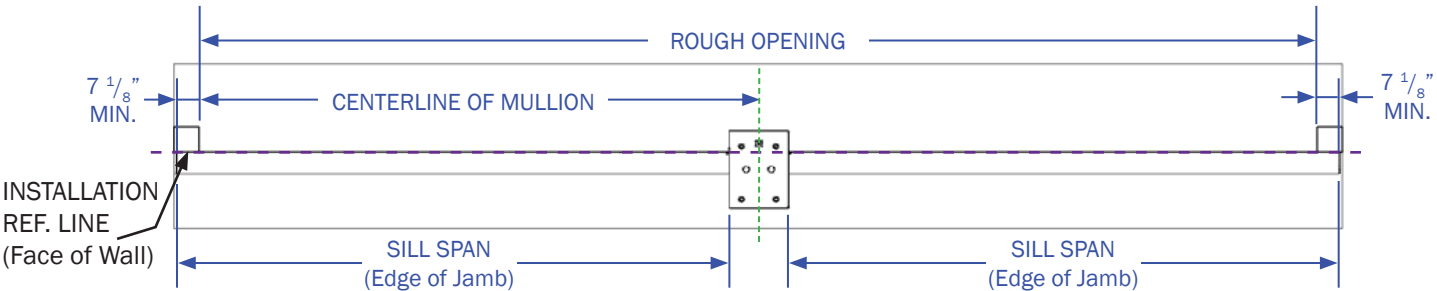
STEP 1. Review all Approved for Construction drawings sent with the crated Flood Plank XL.
The Approved for Construction Drawings are located inside a plastic bag inside the crate. Review all installation labels prior to installation

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 sill 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.

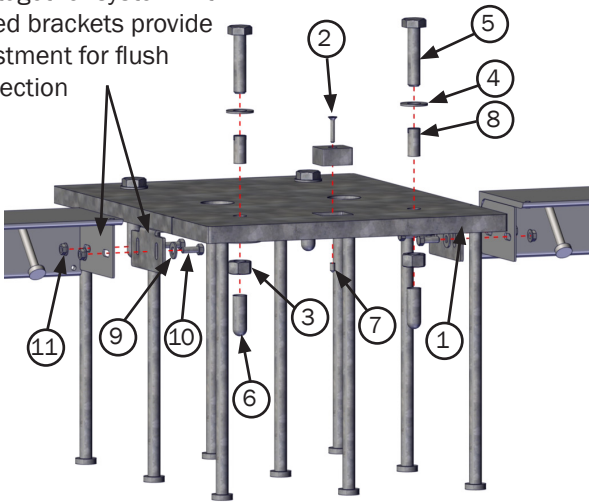
- STEP 3.**
- a. Locate Installation Reference Line and mark embedded mullion receiver locations on concrete surface, as detailed on ***Embedded Mullion Receiver Install Reference.***
 - b. Connect embedded mullion receiver to sills with included hardware.
Embedded mullion receiver includes notch for alignment with embedded sill edge.

Flood Plank XL Install Reference

Refer to Approved for Construction Drawings for exact dimensions.



Bolt together system with slotted brackets provide adjustment for flush connection



POST EMBEDDED MULLION RECEIVER PARTS #514257			
BALLOON	PART #	DESCRIPTION	QUANTITY
1	514256	FP535;PST MULL EMBED-RAW	1
2	514484	SCREW;FLSOCKCAP3/8"16X1-1/2"ZN	1
3	502800	NUT;HEAVY HEX 3/4"10X 2H GALV	4
4	514433	BOLT;HEX 3/4X3-1/2 A325 GALV	4
5	506754	WASHER;FLAT 3/4", HDGALV	4
6	514443	CAP;RND VINYL 2"X3/4"	4
7	511310	CAP;VINYL 1/4"-5/16" BLACK	1
8	514449	SCREW;SET 3/4"-10 X 1-5/8" NYL	4
9	501947	WASHER;FLAT 3/8"ZN	4
10	500400	BOLT;HEX3/8"16X1GR5ZN	4
11	501085	NUT;FLANGE 3/8"16ZN-CASE HARD	4
NOT SHOWN	514261	L-KEY;HEX 7/32"	1

Mullion Installation

Post Embedded Mullion Receiver

STEP 4.

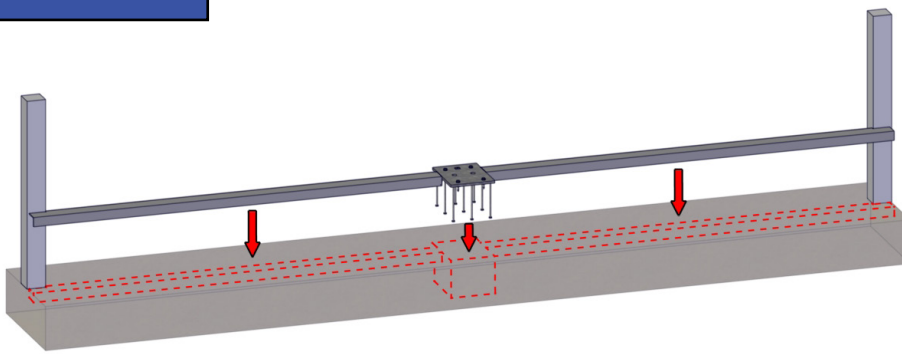
- a. Place embedded mullion receiver and sills according to Approved for Construction Drawings.
- b. Fill concrete, in accordance with minimum requirements called out for embedded mullion receiver, level into concrete, keeping flush with concrete surface.

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.

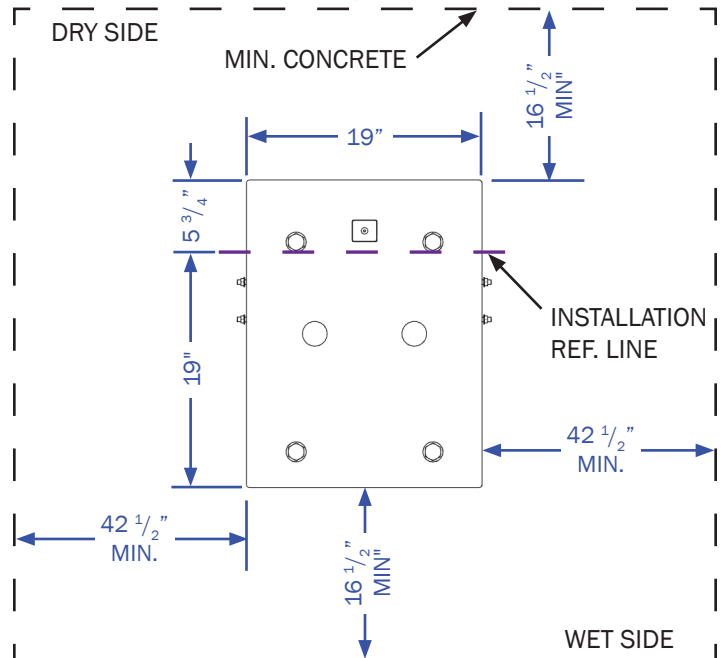
Field concrete foundation design and complete consolidation of concrete surrounding embedded item(s) anchorage points not by PS Flood Barriers.

**Step 4
Illustration**



Embedded Mullion Post Receiver Install Reference

Refer to Approved for Construction Drawings for exact placement.



EMBEDDED MULLION POST RECEIVER INFO:

- MIN. 4000 PSI CONCRETE
- 24" MIN. CONCRETE THICKNESS
- 42 1/2" MIN. EDGE DISTANCE (SIDES)
- 16 1/2" MIN. EDGE DISTANCE (WET SIDE)
- 16 1/2" MIN. EDGE DISTANCE (DRY SIDE)

CRITICAL Do not disassemble bolts until concrete is fully set. When concrete is set replace bolts with nylon set screws and KEEP BOLTS FOR MULLION INSTALLATION.

IMPORTANT! Allow concrete to fully set before proceeding with Dry-Side Support Mullion installation.

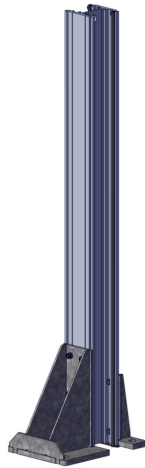
Mullion Installation

Post

XV. Post Mullion Installation

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

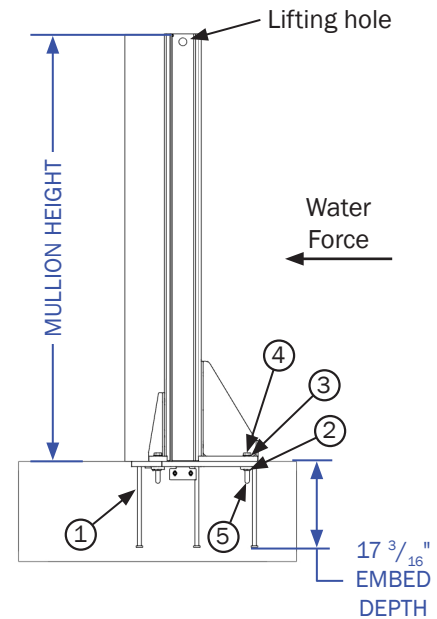
Post Mullion



POST EMBEDDED MULLION RECEIVER HARDWARE			
BALLOON	PART #	DESCRIPTION	QUANTITY
1	514257	FP535;HDFW PST MULL EMBED-GALV	1
2	*502800	NUT;HEAVY HEX 3/4"10, 2H GALV	4
3	*514433	BOLT;HEX 3/4X3-1/2 A325 GALV	4
4	*506754	WASHER;FLAT 3/4", HDGALV	4
5	514443	CAP; RND VINYL 2"X3/4"	4
NOT SHOWN	514449	~SCREW;SET 3/4"-10 X 1-5/8" NYL	4
*Unless otherwise specified on Approved for Construction Drawings. ~Nylon set screw for when mullion is not in place.			

Mullion and Embed Reference

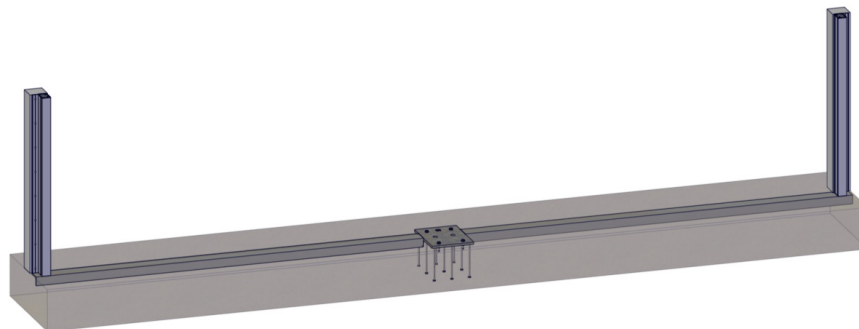
Refer to Approved for Construction Drawings for exact height and length dimensions.



MULLION ANCHOR TORQUE RATINGS:
EMBEDDED MULLION RECEIVER: 125 FT-LB

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

Step 1 Illustration

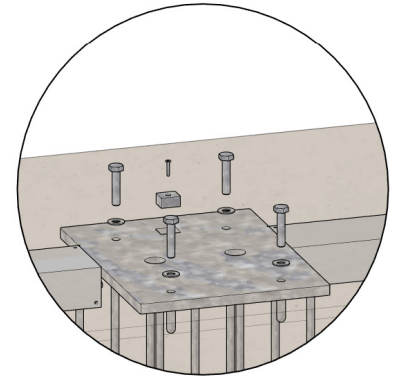
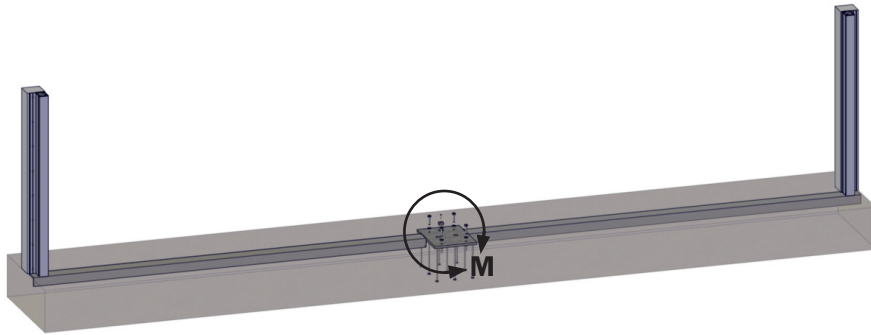


Mullion Installation

Post

- STEP 2.** Remove shear lug cut out with $7/32$ " Allen Wrench.
a. Remove nylon plugs from mounting holes.

**Step 2
Illustration**



DETAIL M

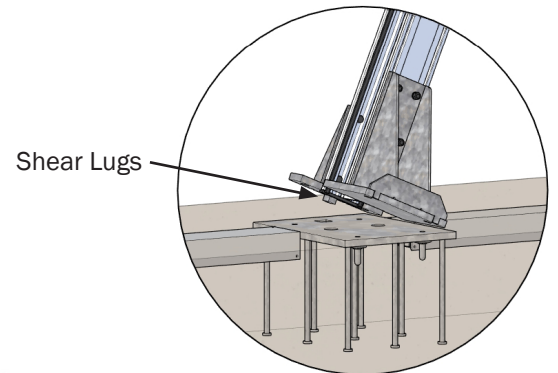
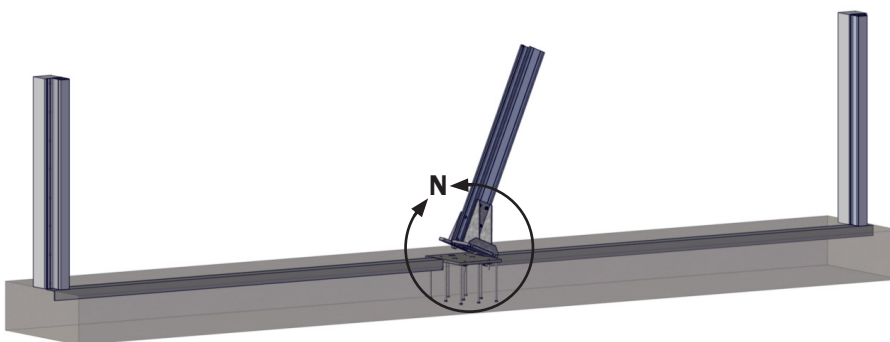
CRITICAL Inspect all mullion gaskets for damage, continuous adhesion to the attached surface, and proper position and compression before installation.

- STEP 3.** Remove any water and debris that has collected inside the shear lug cut-outs and mounting holes.

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

- STEP 4.** Place mullion on embedded receiver.
a. Be sure shear lugs go into cut-outs.

**Step 4
Illustration**



DETAIL N

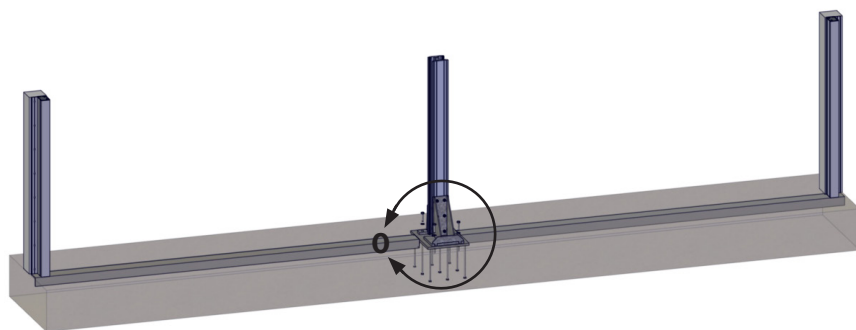
Mullion Installation

Post

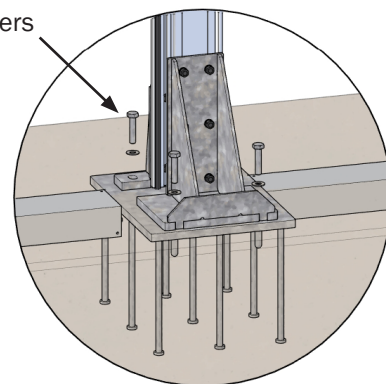
STEP 5. Tighten bolts on embedded mullion receiver to 125 ft-lbs with provided HDG bolts using 1 1/4" wrench or socket.

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

Step 5 Illustration



(4) 3/4" HDG
Bolts w/Washers



DETAIL 0

STEP 6. Continue with Flood Plank Deployment - Found on Page 26.

Flood Plank Installation

Deployment

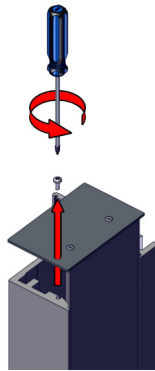
XVI. Plank Deployment Procedure

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, jambs, planks, mullions, and accounting for all of the latching devices.

STEP 1. Remove cover assembly from jamb

Step 1
Illustration



STEP 2. Lube Jamb Seals (recommended to allow flood plank to slide more easily into the jambs)

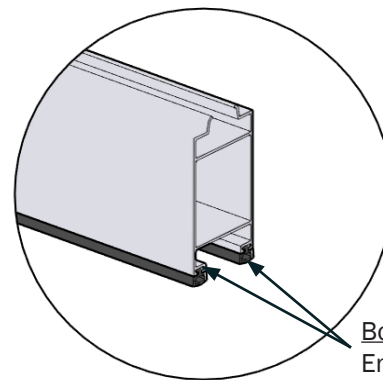
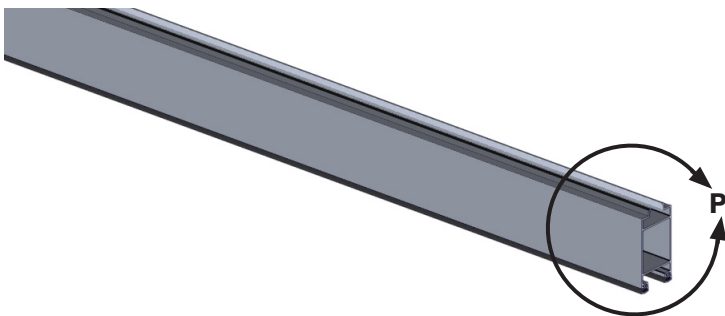
- a. Using a spray bottle filled with a water-dish soap mixture. This may need to be repeated as planks are placed in the jamb. Keep jamb gaskets moist during Flood Plank Deployment.

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 Bottom Plank Detail. The ends of the gaskets have been factory sealed to ensure a watertight junction with the sill.

Step 4
Illustration



Bottom Plank:
Ends of gasket are
factory sealed

**BOTTOM PLANK
DETAIL P**

CRITICAL Inspect factory seal on ends of bottom gaskets before prior to installation and storage.

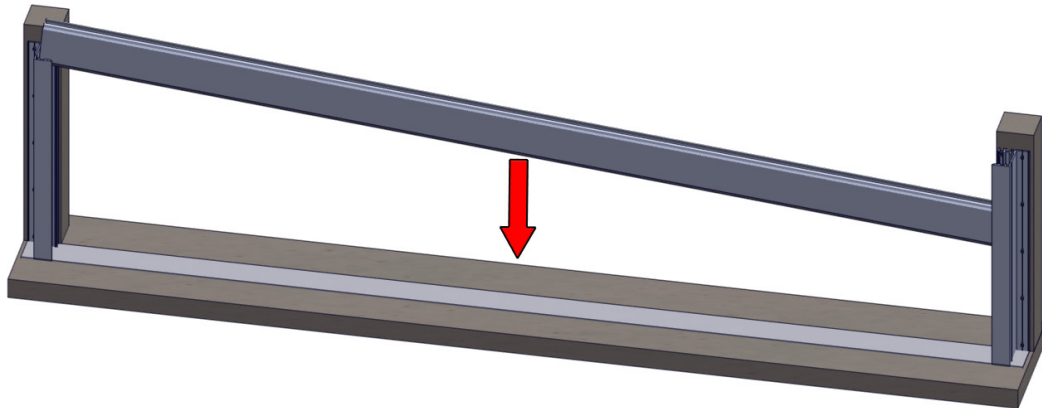
Flood Plank Installation

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.

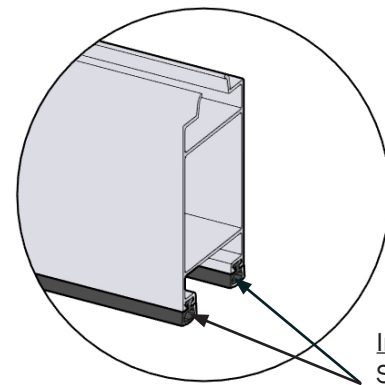
Step 5 Illustration



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

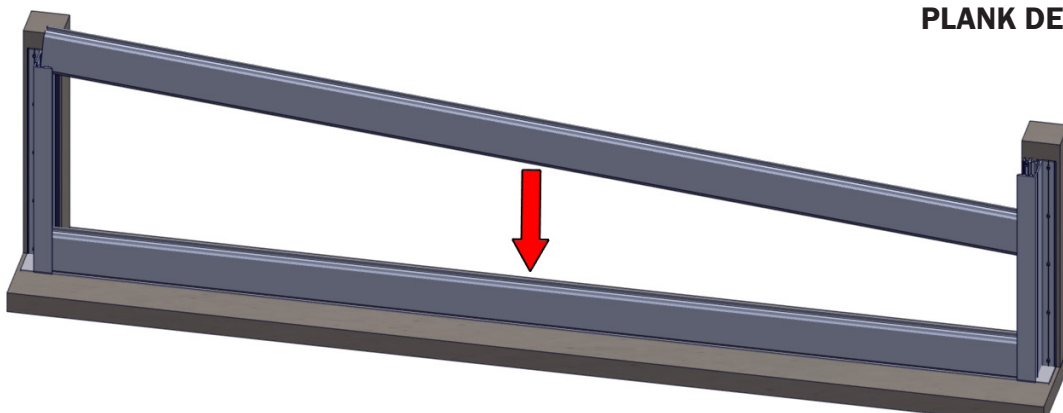
- Ensure each additional plank is fully seated onto the plank below by inspecting for continuous and uniform plank gasket contact between planks. If this is not achieved; remove and re-install the plank before installing subsequent planks.

Step 6 Illustration



INTERMEDIATE PLANK DETAIL

Intermediate Plank:
Small bead of
instant adhesive to
hold gasket onto
plank.



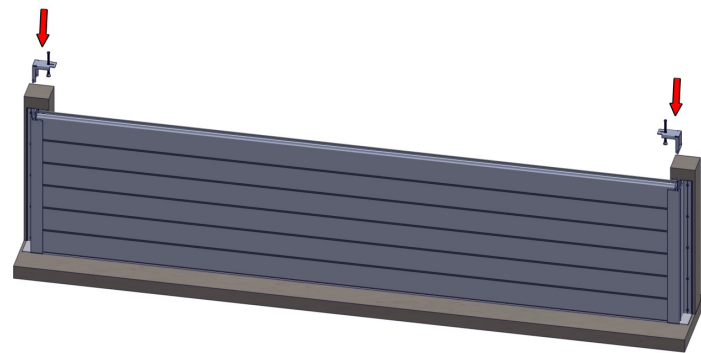
Flood Plank Installation

Deployment

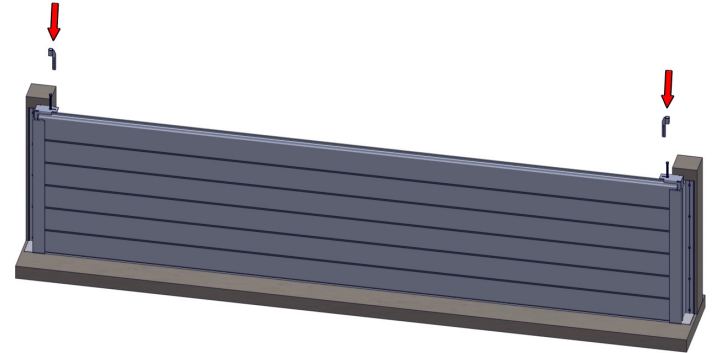
STEP 7. Install latching, making certain to tighten both latch sides evenly to compress planks uniformly. Refer to your Approved for Construction Drawings to determine the type of latching supplied for your Flood Plank XL.

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

**Step 7
Illustration A**



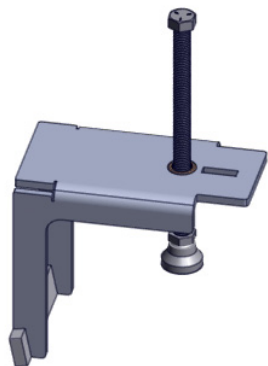
**Step 7
Illustration B**



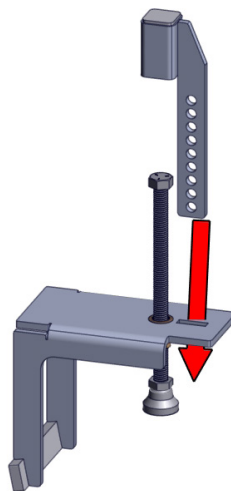
CRITICAL To achieve even gasket compression tighten both latches evenly. At each end of the plank, measure from the floor to the top plank to ensure this dimension is within 1/4" while tightening latch to the required torque rating.

NOTE: PS Flood Barriers requires tightening the Latch bolt to a torque of 100 in-lbs for proper plank gasket compression. *Torque wrench supplied by others, NOT PS Flood Barriers.

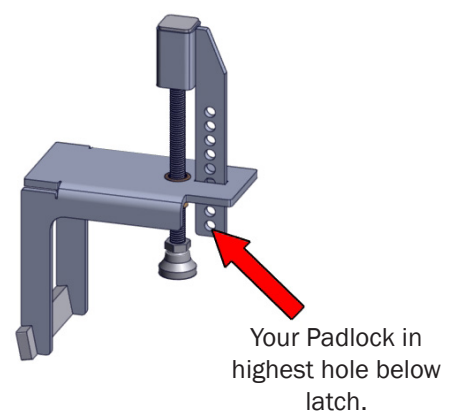
**Step 7
Illustration C**



**Step 7
Illustration D**



**Step 7
Illustration E**



Flood Plank Installation

Removal

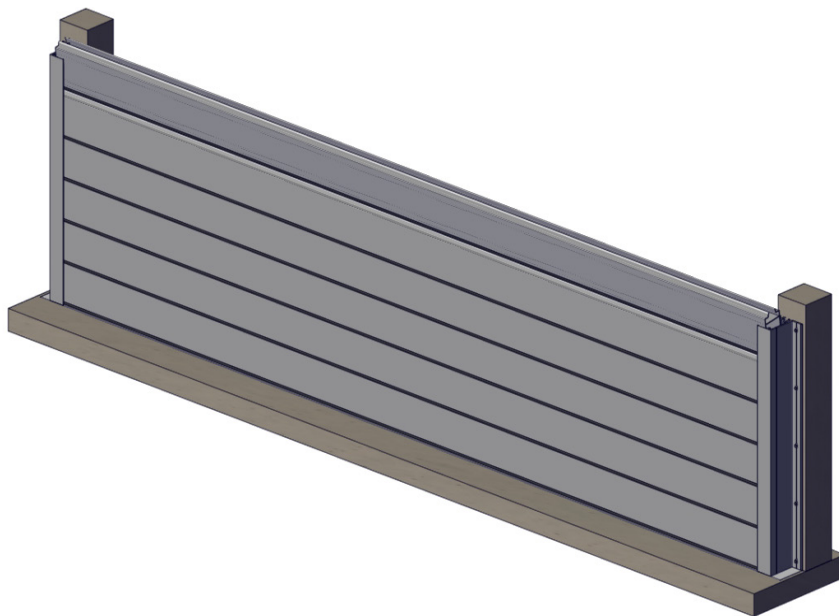
XVII. Plank Removal Procedure

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 the Flood Plank XL 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.
- Rock back and forth until plank is released from the plank below.
 - Remove plank, taking care not to damage jamb gasket.

Step 1 Illustration



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

XVIII. 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 Plank XL 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>

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.

1. Was the flood barrier field tested after installation? Yes No
2. 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.)

 Signature

 Date

 Test Witness Name (Please print.)

 Signature

 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