

Installation Guide for FiberSPAN Panels for Rail Platforms



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Introduction

This document is a guide that will explain the steps required to install FiberSPAN rail platforms & ramps. This installation guide is based on the typical Composite Advantage (CA) installation procedures. The photos shown throughout this guide were taken from mini-high accessibility platforms at West Natick Station on MBTA's Framington / Worcester Line. This provides a full example of FRP panel installation. Elevated platforms will follow the same installation procedures.

1. Panel Types

The FRP panels will be classified in types. The panel type will typically be labelled on at least one vertical side as well as the underside of each panel. The labeled sides will typically not be exposed after installation is completed. Usually the panels of equal size footprint are not interchangeable, so attention needs to be given to the panel order when installing. This information is usually outlined in the CA shop drawings on a project overview sheet or sheets.

The largest panels at West Natick were 25' x 6' and weighed 3000 lbs. The FiberSPAN FRP doubletee platform shown in Section 06705-10 of the Contract Specs is 10' x 40' and weighs 8000 lbs.





Figure 1 – Tee Panel and Slab Panel

2. Platform Superstructure Preparation

The panel supports are to be prepared according to the contract plans prior to panel installation. Critical items are the elevations and slopes of the supports.



Figure 2 – Concrete Pier Supports

3. Unloading Panels

The panels will arrive on a flatbed truck(s). Unloading can be done using a crane with slings, fork lift truck or other appropriately rated equipment. When inserting forks between panels, ensure that the forks do not damage the panel being lifted or scrape the wear surface of the panel below the one being removed.

Smaller panels can usually be unloaded in stacks depending on their weight and the equipment being used. Typically, no more than three panels should be unloaded at a time. This avoids bending the bottom panel too much. The stacking order of the panels on the truck(s) is usually coordinated with CA and the customer in advance based on the installation order as well as the unloading methods that are to be used.



Figure 3 – Unloading Rail Panels

Panels are to be stored off the ground on supports that do not yield to the weight of the stacked panels. Panels will be separated by foam or wood timbers/blocking on the truck. These same supports may be reused to keep the panels separated & supported in the field.

A minimum clearance of 2 feet is recommended around stacked panels in order to allow sufficient working space for any preparation to the panels and to help enable safe lifts.

4. Panel Erection Equipment

A crane or large telehandler with sufficient capacity & reach to place all panels without driving on the platform is preferred. Lift slings are to be evenly spaced on the lifted panel. The slings are to be wrapped around the short dimension of the panel. Depending on project design and contractor preference, it may be possible for panels to be fabricated with lift point attachments on the surface of the panels. There will be a cost for this.

Panels are to be properly fixed in place prior to walking on or using.



Figure 4 – Transporting a Panel in Basket Slings

Figure 5 – Setting a Panel in Place

5. First Panel Installation

Proper placement of the first panel on the superstructure is very important. The panel must be placed with care onto the supports in the correct location as it will help govern the location of subsequent panels. To ensure that this panel doesn't shift after being placed, often times it is best to fix it in place. This may be accomplished using the panel attachments.

The Platform Overview sheet from the shop drawings will aid in the properly locating the panels. The dimensions provided on this sheet will allot for specified panel-to-panel joint sizes. These joints will be sealed later on using a system detailed in the shop drawings.



Figure 6 – Platform Prior to Panel Installation



Figure 7 – Platform after Fixing Panels in Place

6. Typical Panel Placement Process:

- a. Wipe the panel mating ends with a cloth saturated with isopropyl alcohol (IPA) to remove any surface contaminants.
- b. Lift the panels into position.
- c. Hard stops (by others) can be used at the surface of the panels to control the required joints between the mated panels. These stops can be wood, steel etc. These stops would be placed on the previous panel and then the subsequent panels can be lowered vertically as close to the previous panel as possible. Then move the panel horizontally against the shims.
- d. Panel-to-panel alignment checks are recommended to ensure edges are straight.

7. Connecting The Panels To The Supports

After being placed, the panels are to be mechanically connected to the supports. Typically, this is achieved by bolting clips to the bottom of the panels. These clips capture the top flange of the supporting steel or angles that have been bolted to the supporting structure.



Figure 8 – Capture Clip Bolted to Panel & Engaging Angle Bolted to Concrete Pier

8. Supporting Steel Connections

a. Stainless steel angles are included with the platforms. The angles will be bent to the proper angle to match the panels. These are attached to the supports by match drilling the angle and by using wedge anchors (supplied by others) to secure them.

9. Panel-To-Panel Joints

- a. The panel-to-panel joints receive a sealant system to control water runoff. Panel joints need to be dry prior to installing the system per the manufacturer details.
- b. When provided by CA, Colorseal (a silicone-coated, precompressed, primary seal) or emseal backerseal (a precompressed, self-expanding secondary, self-adhered foam backer) with pecora silicone sealant over top are the systems routinely used.



Figure 9 – Colorseal System Installed Between Two Panels

10. Cosmetic Repair

Amershield coating is provided to touch up cosmetic blemishes of the panels. This is for scratches or marks on the painted surfaces of the panels that may occur during installation.

11. Furnished Material for West Natick Mini-High Platform:

a. Furnished by Composite Advantage

BILL OF MATERIALS (SUPPLIED TO SITE)			
QTY.	UNIT	DESCRIPTION	LOCATION / USE
1	EA	FIBERSPAN DECK PANEL 1N	
1	EA	FIBERSPAN DECK PANEL 2N	
1	EA	FIBERSPAN DECK PANEL 3N	
1	EA	FIBERSPAN DECK PANEL 4N	
1	EA	FIBERSPAN DECK PANEL 5N	
1	EA	FIBERSPAN DECK PANEL 6N	-
1	EA	FIBERSPAN DECK PANEL 1S	-
1	EA	FIBERSPAN DECK PANEL 2S	
1	EA	FIBERSPAN DECK PANEL 3S	
1	EA	FIBERSPAN DECK PANEL 4S	
1	EA	FIBERSPAN DECK PANEL 5S	
1	EA	FIBERSPAN DECK PANEL 6S	
160	EA	½"-13 x 2" ASTM F593C SS BOLT	ALL PANELS
160	EA	½" 304SS LOCK WASHER	ALL PANELS
160	EA	½" 304SS FLAT WASHER	ALL PANELS
8	10' ROLLS	½" COLORSEAL WITH MANUFACTURER ADHESIVE (LIMESTONE)	PANEL JOINTS
4	10' ROLLS	1" COLORSEAL WITH MANUFACTURER ADHESIVE (LIMESTONE)	PANEL JOINTS
6	10oz	PECORA 890NST SEALANT (LIMESTONE)	PANEL JOINTS
2	EA	LOCTITE 263 - 50ml BOTTLE	ALL BOLTS
64	EA	4-1/4" x 6" x 3/8" 304SS PANEL CONNECTION CAPTURE TYPE 1 PLATE	ALL PANELS
16	EA	8-3/4" x 3" x 3/8" 304SS PANEL CONNECTION CAPTURE TYPE 2 PLATE	PANELS 4,6
90	EA	5"-11 x 2" ASTM A325 - HDG BOLT	RET. EDGE
90	EA	* ASTM F436 - HDG STRUCTURAL WASHER	RET. EDGE
16	EA	ANGLE CLIP TYPE 1 - 4" x 6" x 3" 304SS ANGLE - 12" - NO SHIM	ABUTMENTS
16	EA	ANGLE CLIP TYPE 2 - 4" x 6" x 🖁 304SS ANGLE - 5" - NO SHIM (8A/8B)	ABUTMENTS
4	EA	ANGLE CLIP TYPE 3 - 4" x 6" x 5" 304SS ANGLE - 12" - POSITIVE SHIM	ABUTMENTS
8	EA	ANGLE CLIP TYPE 4 - 4" x 6" x 🖁 304SS ANGLE - 5" - POSITIVE SHIM (4A/4B)	ABUTMENTS
4	EA	ANGLE CLIP TYPE 5 - 4" x 6" x \$" 304SS ANGLE - 12" - NEGATIVE SHIM	ABUTMENTS
8	EA	ANGLE CLIP TYPE 6 - 4" x 6" x 3" 304SS ANGLE - 5" - NEGATIVE SHIM (4A/4B)	ABUTMENTS

- **b.** Furnished by Contractor
 - All hardware, materials, and labor associated with railing
 - All material and labor necessary for installation except as noted above
 - Lifting equipment, rigging and tools for unloading and erecting panels
 - IPA for cleaning panel edges
 - Shims for setting joint gaps
 - Concrete anchors
 - Any sealant for edges other than panel-to-panel joints

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INSTAL

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COLORSEAL-ON-A-REEL

DO NOT INSTALL THIS MATERIAL UNTIL ALL MEMBERS OF YOUR CREW HAVE READ AND UNDERSTAND THESE INSTRUCTIONS AND ALL RELEVANT SAFETY DATA SHEETS. IF YOU DO NOT UNDERSTAND ANY PART OF THESE INSTRUCTIONS CALL EMSEAL AT 1-800-526-8365

Installation Equipment & Material Storage

In addition to masonry tools needed to remove joint obstructions or adjust joint width as necessary the following are needed:

- Tape measure
- Long-bladed utility knives
- 10-ounce caulking gun
- Caulk knives
- Acetone & lint-free rags

Cold Days: Store sealant, off the floor, inside at above 68°F (20°C). It will recover slower when cold and faster when warm.

Very Hot Days: Keep sealant out of direct sun when temperatures are greater than 60°F (15°C) until immediately prior to

Step 1: Joint Prep

- Ensure joint faces are parallel and have sufficient depth to receive the full depth of the size(s) of COLORSEAL-ON-A-REEL being installed plus at least 1/4-inch (6mm).
- Repair spalled, irregular or unsound joint surfaces using accepted industry practices for repair of the substrates in question. Remove protruding roughness to ensure joint sides are smooth.
- Remove residues of old sealants.



 Apply solvent or other agent suitable for use on the substrates in guestion to clean, lint-free rags. · Wipe joint faces to ensure joint sides are free of dust, previous sealant, oils, grease, etc.

· Ensure joint sides are dry of solvent or cleaning agent prior to installation.



Step 2: Apply Installation Sealant Bead



- Cut the tube tip to provide a 1/4'' opening in the nozzle.
- Pierce the tube foil to allow the sealant to flow.
- Load the tube into the caulk gun.





3/8" (8mm) = mounting bead of liquid sealant

- Gun a 1/4" (6mm) wide mounting bead of sealant onto each joint face, about 3/8" (8mm) back from the joint edge.
- Strike the mounting bead of liquid sealant with a caulk knife to ensure that it is continuous, even, and properly bonded to the substrate.



Step 3: Select and Open Material

- Open a box marked with a material size to match the joint size.
- Remove a reel from box



• Peel back the packing tape and release liner at the beginning of the reel.





NOTE: Be sure to cut away from

- Extend the blade on your long-bladed utility knife.
- Using a back and forth "sawing" motion, square off the end of the material.
- Toll Free: 1-800-526-8365

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Step 4: Wet Seal the Starter End



- On the starter piece, apply a bead of sealant along the silicone coating
- Uncoil the first end from the reel.



· Insert the end into the bottom of the joint.

Step 5: Insert Material **Into Joint**

 Work your way along the joint pushing on the material while inserting it.



- Remove the release liner as you go.
- REMEMBER: ALWAYS PUSH, Never Pull. Do Not Stretch the material.
- By pushing on the material it will "snake" into the joint from side to side.
- As it expands to fill the joint, it will also push along its length ensuring the joins and ends are a tight fit.







- At the end of a roll, leave the end of the material sticking out of the joint about 3/4'' (20mm).
- As in Step 4, apply a bead of sealant along the silicone edge.
- · Open another reel, square off the end, and join it to the piece sticking out of the joint.



- Install the rest of the joint run then come back and push the join into the joint.
- Tool away the excess joining sealant and blend the join.



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NOTE: For HORIZONTAL applications -- finishing corner beads of silicone must be applied and tooled at both top edges.

Corner Transition (elevation) Inside Corner Transition **Cross Transition** Outside Corner Transition (elevation) (side view) (side view) Silicone Facing IMPORTANT Liquid Sealant at Joint Intersections Silicone Facing Facing icone and Terminations Facing Silicone Facir IMPORTANT IMPORTANT Silicone Facing Liquid Liquid Sealant Sealant Facing Silicone Silicone IMPORTANT IMPORTANT Liquid Liquid Sealant Sealant Notch out the back and bend Notch the top of lower piece. Join with liquid sealant.

Joins at Intersections

EMSEAL JOINT SYSTEMS, LTD 25 Bridle Lane, Westborough, MA01581 EMSEAL, LLC 120 Carrier Drive, Toronto, ON, Canada M9W 5R1 09-27-2013_1.0

it to 90-degrees.

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- - Push pieces firmly together.

- Cut each run of material about 3/8" (8mm) longer than needed.
- "Snake" the excess into each run.

Joining Straight Lengths