

Installation Guide

FIBERSPAN™ FRP RAIL PLATFORMS



Introduction

This document is a guide that will explain the steps required to install FRP Rail Platform panels supplied by Creative Composites Group (CCG).

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1. Panel Types

The panels are classified 23 types per the shop drawings. This is due to the individual panel types having differences. Each panel type is specific to its location. The ID of the panel type is located at one end of each panel.

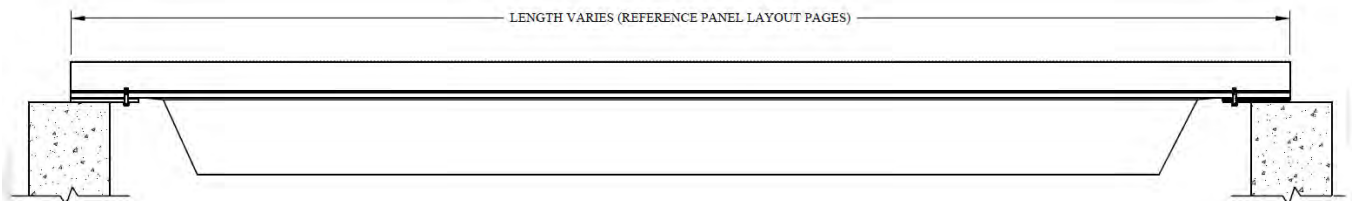


Figure 1 – Prefabricated Tee Panel

2. Platform Substructure Preparation

The platform substructure are concrete piers and are prepared according to the plans. The FRP panels bear on the piers and this is the primary supports for load transfer; not the steel attachment angles. A level surface at the correct elevation is required.

3. Unloading Panels

The panels will arrive on a flatbed truck. Unloading can be done with a crane and slings or a forklift truck. All equipment and labor for unloading is the responsibility of the contractor to furnish. When inserting forks between panels, ensure that the forks do not damage the panel being lifted or scrape off the non-slip top overlay on the panel below.



Figure 2 - Typical Truck Loading

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 cribbing on the truck that may be reused to keep the panels separated and supported in the field. This prevents the non-slip coating of the lower panel from damaging the bottom of the upper panel. A clearance of 2 feet minimum should be maintained around the stacked panels in order to allow access.



Figure 3 – Stacking of Panels on Site

Any expansion joint materials, hardware, panel-to-panel joint materials, connection clip assemblies, etc. will be shipped unattached to the panels; typically accompanying the panel shipment in a tote or on a skid.

4. Panel Erection Equipment

A crane with sufficient capacity and reach to place the panels or forklift should be used. The panels should be lifted so that they will remain horizontal and parallel to the ground. Panels can be lifted with slings under the panels or by using the specified swivel rings inserted in the provided lifting holes of the panel surface.



Figure 4 – Panel Installation

5. Panel Installation Overview

The platform panels are to all be supported by concrete piers. The panels are sized to have panel-to-panel joints centered at each shared pier. Using shims such as wood, steel plates, or other material that will not easily compress are suggested as an aid to ensure the panel joint of 3/4 inch.



Figure 5 – Wood Shims Used to Set Panel Spacing

Once the panels are in place, it is recommended to adjust as necessary to even out the panel-to-panel joints, and to maintain longitudinal straightness.

6. Panel Installation

- a. Lift the panels into position. The panel I.D. will be stenciled on the end.
- b. A measurement check for proper panel location is to mark the designed centers of the panel-to-panel joints on the concrete pier. This reference mark will serve as a visual check to make sure the panels are in the correct locations.
- c. Hard stops to control the joints between the adjacent panels are recommended to be used during the installation of the panels. The shims would be placed on the previous panel to set the joint gap at the nominal 3/4".
- d. Joint size and air temperature should be considered when finalizing panel gaps. Please refer to the reference chart at end of this installation manual.
- e. The panels will be lowered vertically as close to the previous panel as possible; and then move horizontally against the shims.

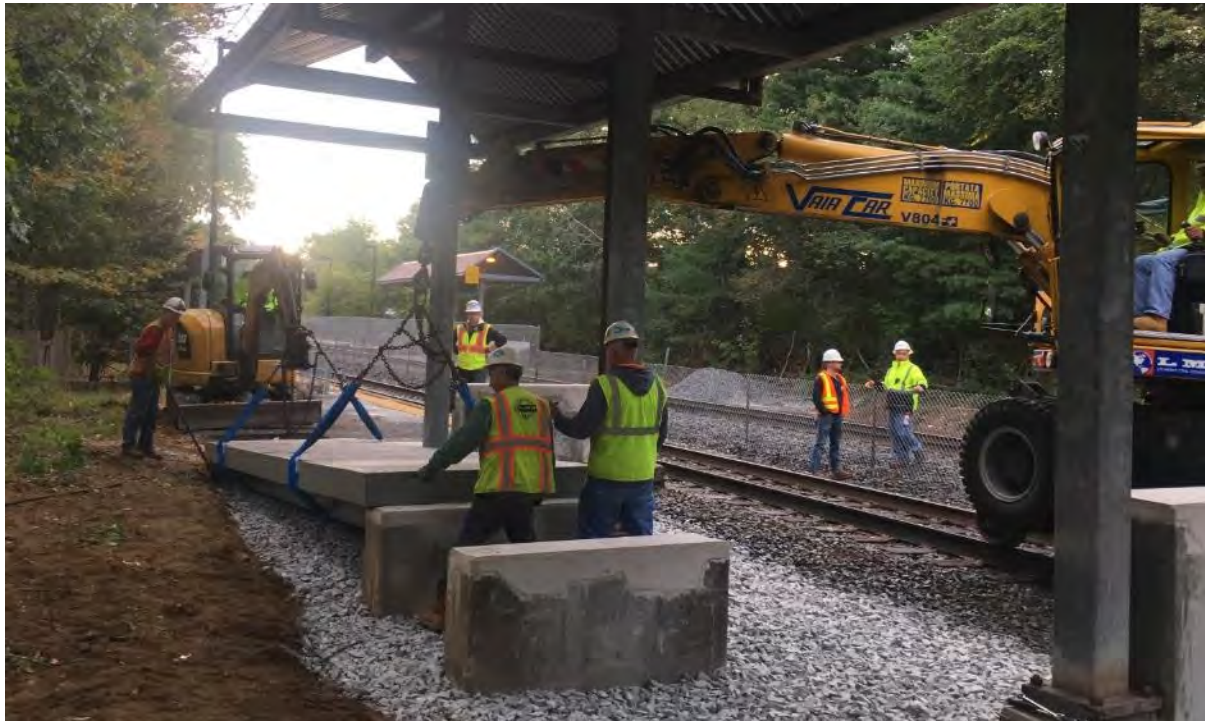


Figure 6 – Panel set on piers

- f. Panel-to-panel alignment checks are recommended to ensure edges are straight and maintain correct offset from the tracks.

- g. Panel elevations on the concrete pier should be adjusted using hard shims to adjust panel height to the finished elevation. These should be located within the interior of the pier so that they will be fully encased by grout.
- h. Install panel connection clips (see connections in Section 7). Minimize work done from on top of the panels until the connection clips have been installed as they will not resist uplift or bounce (vertical forces) until the clips are in place.

7. Pier Clip Angles for Panel Connection

Stainless steel angles are used to connect the platform panels to the concrete piers. The concrete anchors for the angles are the responsibility of the contractor installing the panels. CA supplies the stainless angles and the bolts for the panels.

After the FRP panels are located on the piers at the correct elevations, the pier angles are located with the FRP panel and the concrete pier. Mark the angle hole locations on the pier to match drill the angle location. Install concrete anchors and secure the angles to the concrete. Panels must be in their final location and alignment verified before installing the clip angles to the piers. Leave 1/8" gap between top of angle and bottom of panel to avoid the panels bearing on clip angles.

8. Panel Connection

After panels are placed and pier angles are anchored, the panels are to be mechanically connected to the supports. This is achieved by directly bolting the angles to the bottom of the panels.

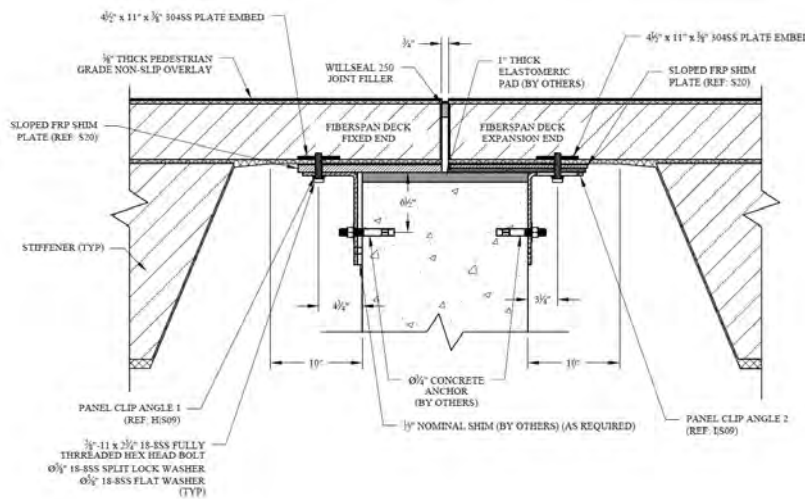


Figure 7 – Angle Bolted to Concrete

CA supplies the clips, bolts and washers for this attachment. Bolts thread into holes tapped into the embedded stainless steel inside the FRP panel. Concrete anchors and shims by others.

9. Grouting Piers

The gaps between the bottom of the panels and the concrete piers will need to be sealed and filled with a flowable grout to provide a continuous bearing for the platform panels.



Figure 8 – Finished Grout Pad Below Panel

10. Panel-To-Panel Joints

- The panel-to-panel joints receive a Willseal 250 system to control water runoff. Follow the complete manufacturer instructions for the entire joint system installation process.
- Slide the Willseal down into the panel-to-panel joint. Place the top of the Willseal at a max depth of 1/4". Remove film backing from the strip. The Willseal will expand to seal the panel-to-panel interface.
- The panel-to-panel joints will need sealed with the provided silicone sealant at the top edges of the Willseal and the panels. Care will need to be taken to avoid getting excessive sealant on the wear surface since wet sealant will adhere to the wear surface and be difficult to remove.

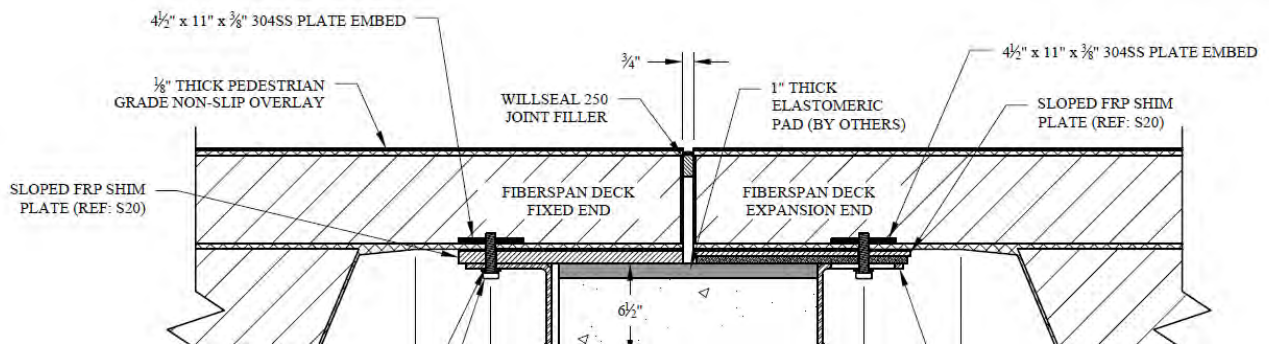


Figure 9 – Colorseal System Installed Between Two Panels

11. Railing Connections

The side mount rail connections points will be shop drilled and taped per the layout provided by contractor to CCG.

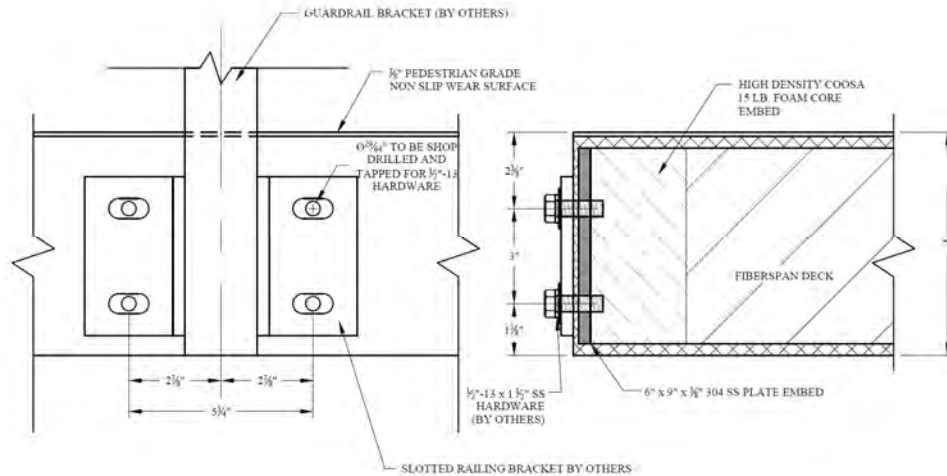


Figure 10 – Railing Connection

12. Treated Rub Rail

Rub rails may come attached if supplied with the FRP panels. Otherwise, contractor will bolt the rub rails to the front edge using the pre-drilled holes.

13. Tactiles

Tactile warning surfaces will come bonded to the FRP panels.

14. Cosmetic Repairs

Amershield polyurethane 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.

15. Bill of Materials Shipped to Site

COMPOSITE ADVANTAGE - SHIP TO SITE BILL OF MATERIALS				
QTY.	UNIT	PART NO.	DESCRIPTION	LOCATION / USE
25	EA	CA	FIBERSPAN DECK PANEL	-
50	EA	-----	6" x 10" x $\frac{3}{8}$ " 304SS ANGLE 10" LONG - PANEL CLIPS	FIXED ENDS
50	EA	-----	6" x 10" x $\frac{3}{8}$ " 304SS ANGLE 10" LONG - SLOTTED PANEL CLIPS	EXPANSION ENDS
26	EA		1" WILLSEAL 250 JOINT SEAL - 6.5 FT STICK, CONCRETE GRAY	JOINT FILLER
1	EA	890NST	10oz TUBE PECORA SEALANT - LIMESTONE	JOINT FILLER
1	GAL	-----	AMERSHIELD - CONCRETE GRAY (RAL 7023)	TOUCH-UPS
2	EA	CA	I. D. PLATE - 3" x 5"	BRIDGE ENDS
1	EA	0610692	LOCTITE 243 - 50ml BOTTLE	BOLTS
8	EA	97524A035	$\varnothing\frac{3}{16}$ " ALUMINUM RIVETS	MOUNT I. D. PLATE
200	EA	92240A788	$\frac{3}{8}$ "-11 x 5" 18-8SS HEX HEAD BOLT - FULLY THREADED	PANEL CLIPS
200	EA	92146A035	$\frac{3}{8}$ " 18-8SS SPLIT LOCK WASHER	PANEL CLIPS
200	EA	92141A035	$\frac{3}{8}$ " 18-8SS FLAT WASHER	PANEL CLIPS
100	EA	92311A794	$\frac{3}{8}$ "-11 x 1" 18-8SS CUP-POINT SET SCREW	LIFT POINTS
1	EA	2521A647	$\frac{3}{8}$ "-11 SS TAP	PANEL CLIPS
1	EA	2521A645	$\frac{1}{2}$ "-13 SS TAP	PEDESTALS

Figure 11 –Ship to Site Bill of Materials

16. Furnished by Contractor

- All hardware, materials and labor associated with and railing or mounted accessories
- Forklift/crane and rigging equipment for unloading and erecting panels
- IPA or Acetone for cleaning panel edges
- Shims for setting joint gaps and grout for fill
- Concrete anchors
- Air compressor and drivers for installing bolts in clips

Example of Joint Sizing Table for Panel Installation

The optimal panel-to-panel joint gap is dependent on the ambient temperature when installed. Nominal 3/4" Joint size is for installs at 68°F. Chart lists joint gap sizes at temperatures from -10°F to 105°F per AASHTO 3.12.2.2-3 and AASHTO 3.12.2.2-4. The joint size is based on the longest panel length driving the panel-to-panel joint movement of 407-1/8".

3/4" Nominal Joint Gap By Temperature		
Temperature (fahrenheit)	Temperature Difference	Joint Gap (Inches)
-10	-78	1.003
0	-68	0.97
10	-58	0.938
20	-48	0.906
30	-38	0.873
40	-28	0.841
50	-18	0.808
60	-8	0.776
68 (Nominal)	0	0.75
70	2	0.744
80	12	0.711
90	22	0.679
100	32	0.646
105	37	0.63