

Installation Guide

E.T. TECHTONICS FRP PEDESTRIAN BRIDGES



Introduction

E.T. Techtonics brand fiberglass bridges by CCG can be assembled and installed in a variety of ways depending on the difficulty of your site. Spans can be shipped to you fully assembled, partially assembled, or in component parts.

1. Assembly Tools Required

Most fiberglass bridges are constructed with no more than a socket wrench and a few common hand tools. All components arrive precut and predrilled, and customized assembly instructions with drawings are provided to show exactly how to assemble the bridge onto foundations. Typical connections are 3/4" diameter A307 hot dipped galvanized bolts. All hardware required to assemble the span is included with the shipment. Just line up the holes, insert a bolt and tighten the nut. Most spans are designed to be assembled without any power equipment. A list of recommended tools required will be included in the assembly instructions.



Figure 1 - Basic tools needed

2. Mounting Device

Stainless steel mounting clips are provided to connect the bridge to your foundation. An anchor bolt placement drawing will be provided, to assist you in preparing your foundation to line up with our mounting clips. The number of anchor bolts required will depend on the fiberglass bridge design.

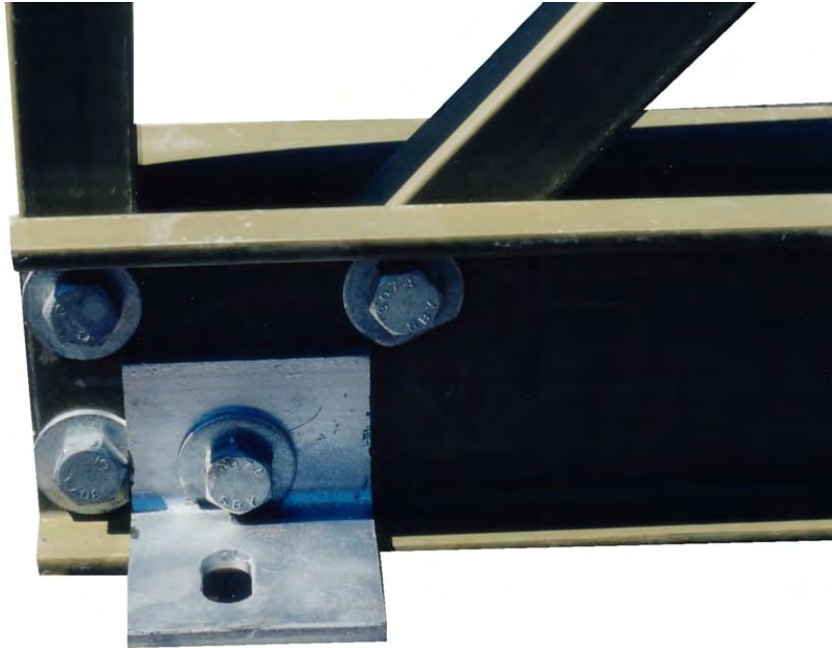


Figure 2 – Stainless Steel Mounting Clip

3. Typical Bridge Erection in Remote Sites

- a. Short Spans
 - i. In most cases, short span FRP bridges (up to 50') can be quickly installed by volunteers, or work crews by first assembling the two trusses adjacent to the stream bank. Two workers can assemble both trusses of a simple 40' bridge in an hour or so. Then a larger crew will be needed for a short time to carry or pull the two trusses across to the other side. (A crew of 7 or 8 people can carry a 40' truss for short distances.) After standing the trusses up on the foundations, crosspieces and bracing will be bolted on underneath to connect the two trusses together. This can take several hours if all work must be done from deck level but will be faster if some of the bridge can be reached from below. Finally, deck & safety rails are installed. Short spans are typically installed by a small crew in about one day.



Figure 3 – Truss being lifted by crew



Figure 4 – Standing truss



Figure 5 – Trusses being connected

b. Long Spans on Shallow Sites

- i. On shallow sites the easiest method is to construct several temporary supports in the streambed using construction lumber or commercial scaffolding and then build the bridge in place. Bottom chords, posts, diagonals and top chords are sequentially added until the bridge is fully constructed on your foundations. Then supports are removed and decking is added. A step-by-step set of assembly instructions will be provided and this type of assembly is appropriate to volunteer groups with experience using hand tools. An 80' foot span can be easily assembled by this method, with a small work crew or volunteers, in about 2-3 days.



Figure 6 – Temporary support in streambed



Figure 7 – Scaffolding being used as a support



Figure 8 – Scaffolding and lumber being used as a support

c. Long Spans on Deep Sites

- i. Installations in these locations are best done by experienced trail crews or other skilled workers. The usual method in forest locations is to assemble the trusses adjacent to the site and pull them across individually by use of “high lines” attached to nearby trees as shown below. Rigging experience is required. In other locations it may be possible to bring in a small crane to lift the assembled span into place on the foundations. On some very difficult sites a small helicopter lift may be the best method.



Figure 9 – Bridge truss being pulled across using a high line



Figure 10 – Crane lifting bridge into place

4. Splices

Many spans are shipped with splices to minimize component weight and aid in transporting components into remote locations. Bridge splices are easily installed during construction using the same hand tools used for bridge assembly.



Figure 11 – Bridge Splice