



E.T. TECHTONICS BRIDGES | PEDESTRIAN ACCESS STRUCTURES

# FRP Boardwalks & Beam Bridges

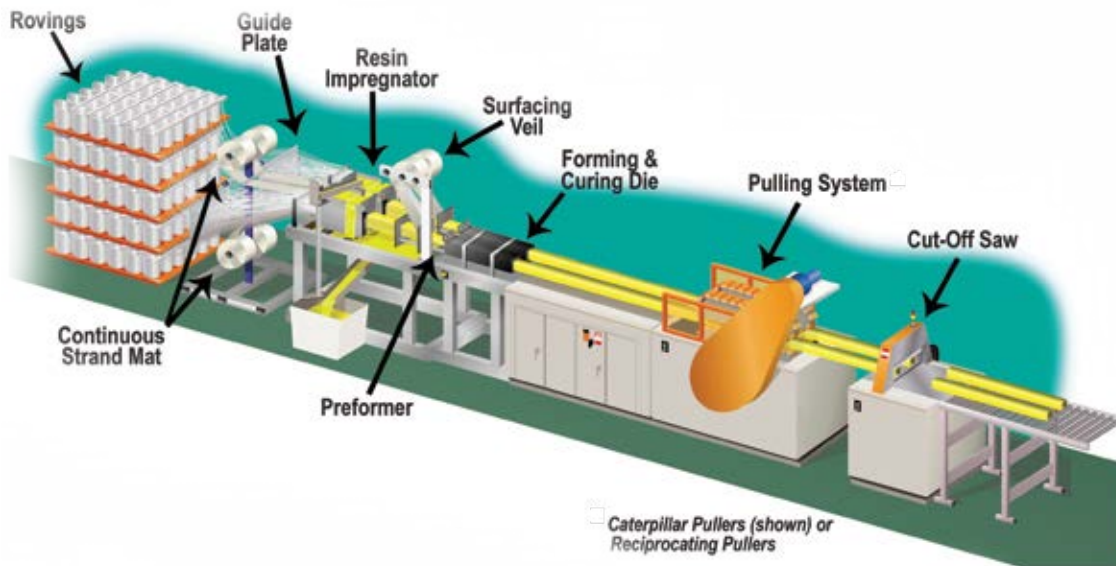


LOW MAINTENANCE. LONG LASTING. LIGHTWEIGHT. EASY TO INSTALL.

## PULTRUSION PROCESS

Our access structures are made from a pultruded high-strength, lightweight fiberglass reinforced polymer (FRP) structural profiles. Pultrusion is a continuous manufacturing process utilized to make composite profiles with constant cross-sections. Fiberglass reinforcements, in the form of roving and mats, are saturated with resin and channelled into a heated die. The profile exits the die in a solid state in the desired cross-section.

Pultruded profiles are used for structural applications in which lightweight, high-strength, and corrosion resistance attributes are required. Pultruded profiles have higher tensile strength than typical structural steel while weighing about 80% less. To learn more about pultrusion visit our website [CreativeCompositesGroup.com](http://CreativeCompositesGroup.com)



## FIBERGLASS BOARDWALKS & BEAM BRIDGES

If your access application requires a structure that is  
Green & Sustainable, Lightweight, Low Maintenance,  
and Pre-engineered to Industry Standards,  
then an E.T. Techtonics structure is the right choice.

### CONSIDER THE ADVANTAGES...

#### GREEN & SUSTAINABLE

FRP profiles have longer lives and exhibit a lower carbon footprint and embodied energy as compared to steel and aluminum. Pultruded members are inert and will not leach any chemicals into the environment.

#### PRE-ENGINEERED TO INDUSTRY STANDARDS

We engineer each structure to meet the required load conditions and perform the Finite Element Analysis (FEA) in-house. Our analysis is performed in accordance with industry standards including the Allowable Stress Design (ASD) method and the AASHTO standard. Our FRP materials meet the minimum characteristic design stresses as required by ASTM D7290.

#### LIGHTWEIGHT

We use lightweight FRP profiles that are easy to lift and transport to limited access locations. Trail organizations, professional contractors, or volunteers can carry our parts to remote sites, and then build and install the structures without heavy equipment.

#### LOW MAINTENANCE

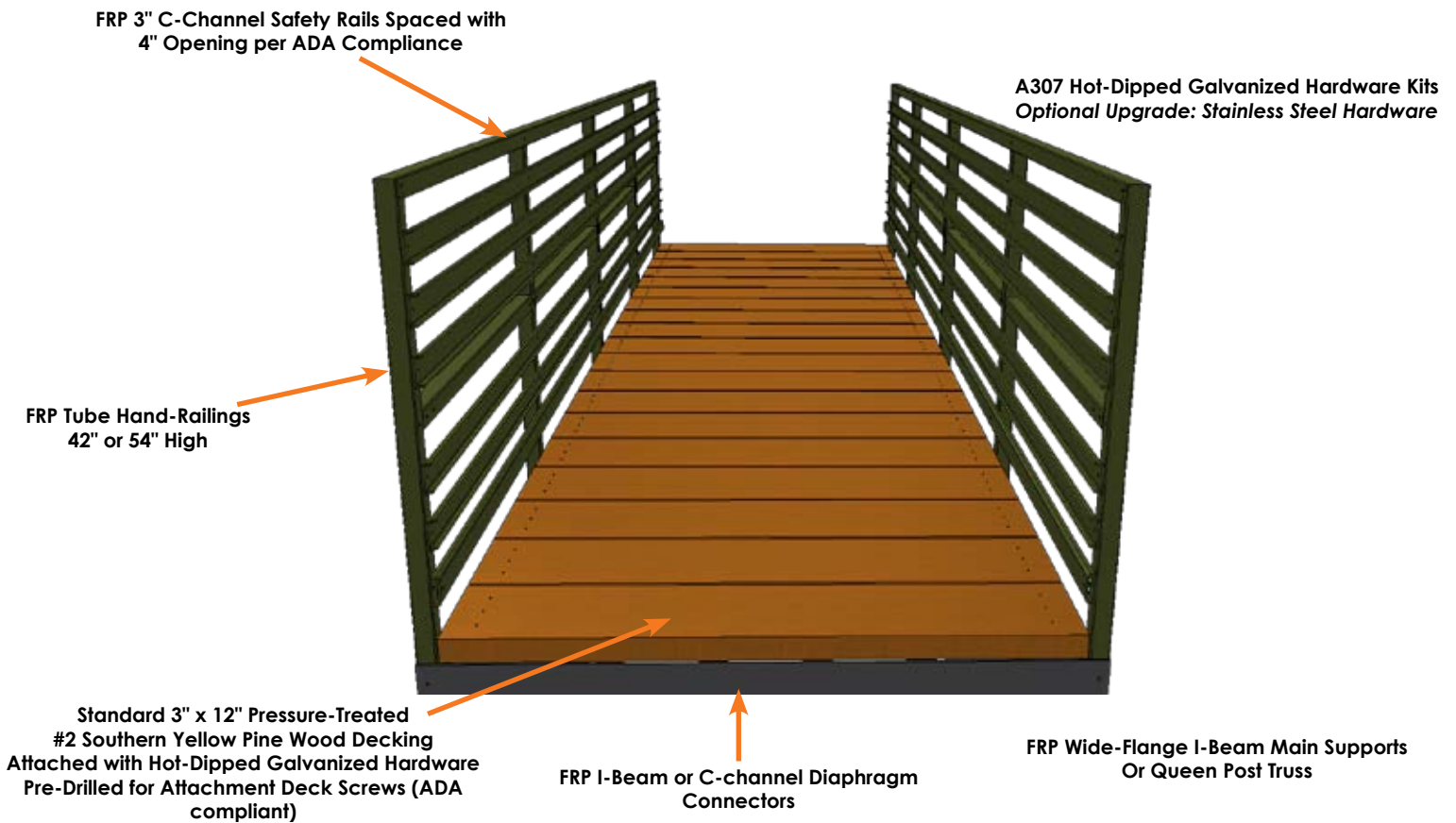
The inherent properties of FRP profiles minimize the need for maintenance associated with corrosion and rot, typically associated with wood, steel, and aluminum structures.

**“CRATER LAKE NATIONAL PARK INSTALLED FOUR NEW PEDESTRIAN BRIDGES ON THE 1.7-MILE LONG ANNIE CREEK CANYON TRAIL. THIS TRAIL IS NARROW AND SHARPLY DESCENDS INTO THE ANNIE CREEK CANYON. DUE TO THE RUGGED NATURE OF THE AREA, POWER EQUIPMENT AND VEHICLES WERE NOT ABLE TO REACH THE BRIDGE SITES, SO ALL MATERIAL HAD TO BE HAND CARRIED INTO THE WORK SITES; THIS IS WHY WE WERE INTERESTED IN A LIGHTWEIGHT BUT STRONG BRIDGE.”**

**~Jennifer Gifford  
Trails Program Supervisor**



# FIBERGLASS BOARDWALKS & BEAM BRIDGES: With Hand-Railings



## TYPICAL DIMENSIONS

Span Length: 5'-0" to 25'-0"  
Span Width: 2'-0" to 15'-0"

## TYPICAL DESIGN LOADS - PEDESTRIAN, BICYCLE, EQUESTRIAN, AND LIGHT VEHICLE

Uniform Pedestrian Live Loads:	60 psf to 100 psf
Light Vehicle Dead Loads:	10,000 lbs.

## STANDARD BRIDGE FEATURES

**Fiberglass Structure:** Parts made from FRP to create a structure using beams and/or channels with a decking system. Structures can have hand-railing with ADA compliant safety rails and different decking material options.

**Hardware:** A307 or A325 galvanized steel bolts for assembly and A304 grade stainless steel anchor clips.

**Color:** Creative Composites Group Series 1500 Slate Gray

**Decking:** 3" x 12", #2 pressure-treated Southern Yellow Pine for all traffic (required for equestrian). Optional fiberglass decking available (See Optional Accessories).

**Hand-Railing:** 42" for pedestrian / bicycle; 54" for equestrian with ADA compliant safety rails.

## OPTIONAL ACCESSORIES

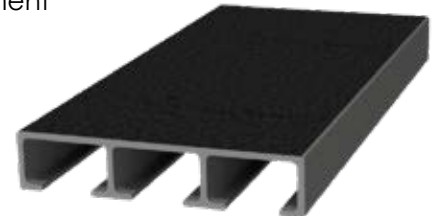
### FRP GR205 Fiberglass Superplank® Decking:\*

1-1/2" high x 24" wide with Anti-Skid Coating  
Pre-Drilled for Attachment  
ADA Compliant



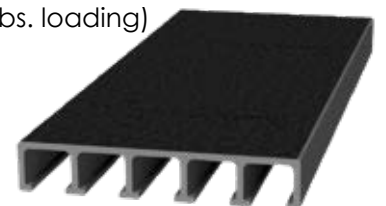
### FRP GR112 AMERIBOARD FG Plank:\*

2.5" high x 12" wide with Anti-Skid Coating  
Pre-Drilled for Attachment  
ADA Compliant



### FRP CP064 Fiberglass Heavy Duty Plank:\*

1-7/8" high x 10-1/4" wide with Anti-Skid Coating  
Pre-Drilled for Attachment  
ADA Compliant  
(for vehicle traffic, 10,000 lbs. loading)

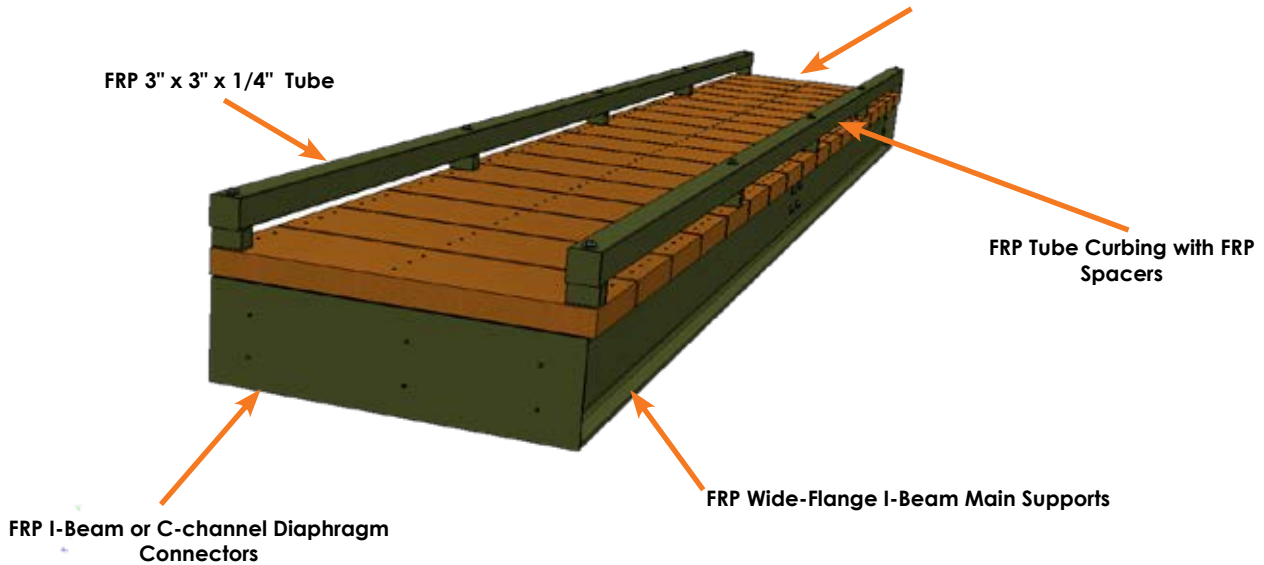


4 \* Optional CNC-Routed Slots for enhanced water drainage for decking.

# FIBERGLASS BOARDWALKS & BEAM BRIDGES: With Curbing

A307 Hot-Dipped Galvanized Hardware Kits  
 Optional Upgrade: Stainless Steel Hardware

Standard 3" x 12" Pressure-Treated #2 Southern Yellow Pine Wood Decking Attached with Hot-Dipped Galvanized Hardware Pre-Drilled for Attachment with Deck Screws (ADA compliant)



## TYPICAL DIMENSIONS

Span Length: 5'-0" to 25'-0"  
 Span Width: 2'-0" to 15'-0"  
 (larger or custom widths available)

## TYPICAL DESIGN LOADS - PEDESTRIAN, EQUESTRIAN, AND LIGHT VEHICLE

Uniform Pedestrian Live Loads:	60 psf to 100 psf
Light Vehicle Dead Loads:	10,000 lbs.

## STANDARD BRIDGE FEATURES

**Fiberglass Structure:** Parts made from FRP to create a structure using WF I-beams and/or c-channels with a decking system. Structures can have curbing (or no curbing) and different decking material options.

**Hardware:** A307 or A325 galvanized steel bolts for assembly and A304 grade stainless steel anchor clips.

**Color:** Creative Composites Group Series 1500 Slate Gray

**Decking:** 3" x 12", #2 pressure-treated Southern Yellow Pine for all traffic (required for equestrian). Optional fiberglass decking available (See Optional Accessories).

**Curbing:** FRP tube curbing with off-sets (or no curbing) on both sides of the bridge.

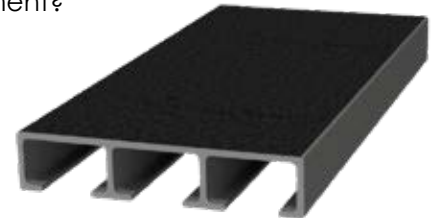
\* Optional CNC-Routed Slots for enhanced water drainage for decking.

## OPTIONAL ACCESSORIES

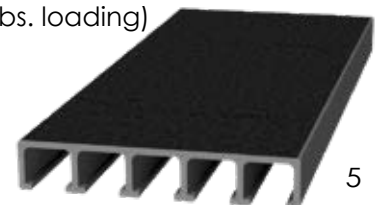
**FRP GR205 Fiberglass Superplank® Decking:\***  
 1-1/2" high x 24" wide with Anti-Skid Coating  
 Pre-Drilled for Attachment  
 ADA Compliant



**FRP GR112 AMERIBOARD FG Plank:\***  
 2.5" high x 12" wide with Anti-Skid Coating  
 Pre-Drilled for Attachment?  
 ADA Compliant



**FRP CP064 Fiberglass Heavy Duty Plank:\***  
 1-7/8" high x 10-1/4" wide with Anti-Skid Coating  
 Pre-Drilled for Attachment  
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 (for vehicle traffic, 10,000 lbs. loading)



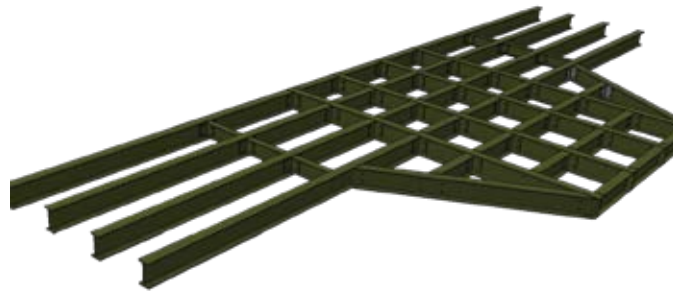
## CUSTOM-ENGINEERED FIBERGLASS BOARDWALKS & BEAM STRUCTURES

### CUSTOMIZED QUOTES

We provide cost quotes based on material amounts, fabrication labor, and shipment costs that are customized for each application. Customers can select the structure features and receive detailed quotes for their customized FRP structure. We provide optional costs for special features and upgrades.

### ENGINEERING DESIGN & ANALYSIS

We design an structures for your unique application based on the load conditions and type of traffic over the structure. We provide structural calculations based on the Allowable Stress Design (ASD) method or AASHTO method that can be sealed by a Professional Engineer in any state. We work with you to determine which foundation scheme is best for your application.



### MANUFACTURING & FABRICATION

We pultrude every part used in our boardwalk and beam bridge systems and manage the fabrication of the parts. We create 3D CAD models of every product and create the fabrication shop drawing packages. We manage all aspects of the project from the initial quote to final delivery.

### SHIPMENT & INSTALLATION

We manage the shipment of each order and provide every customer with detailed and customized installation instructions with supporting assembly CAD drawings. Every fabricated part is labeled and matches the assembly drawings for ease of assembly and installation.

**"IN 2015 THE CITY EXPANDED ITS TRAIL SYSTEM IN A MAJOR CITY PARK THAT REQUIRED THE CROSSING OF HIGHLY SENSITIVE WOODLAND WETLAND. THE CITY WAS LOOKING FOR AN AESTHETIC AND COST EFFECTIVE OPTION THAT COULD BE DELIVERED QUICKLY. AFTER RESEARCHING A NUMBER OF OPTIONS E.T. TECHTONICS PROVIDED THE PERFECT SOLUTION. THE FRP BRIDGE WAS EASY TO ASSEMBLE AND IS A PERFECT FIT FOR THE SITE. THE ENGINEERING STAFF WAS VERY KNOWLEDGEABLE AND CUSTOMER SERVICE WAS EXCEPTIONAL."**

**~M. Sullivan, P.E. Design Engineer**



## LIMITED ACCESS IS OUR SPECIALTY- NO SITE IS TOO REMOTE!

Our lightweight prefabricated boardwalks and beam bridges can be assembled and installed in a variety of methods depending on your site location. CCG can ship structures partially-assembled, fully-assembled, or in component parts for easy carry-in to remote sites.

### CONSIDER THE SHIPPING OPTIONS...

#### FULLY-ASSEMBLED

CCG will deliver the structure to the nearest location accessible by truck. The installer can use a crane or helicopter to unload and place the structure onto the prepared foundation. The lightweight attribute of the structure allows for smaller lifting equipment. CCG will provide the client with a Lifting Plan CAD drawing that shows the strap locations and weights for picking and lifting a fully-assembled structure. CCG recommends a professional contractor and rigging crew perform this type of installation. Depending on the size of the structure, this shipment may require special pricing due to oversize loads and wide-load permit costs.

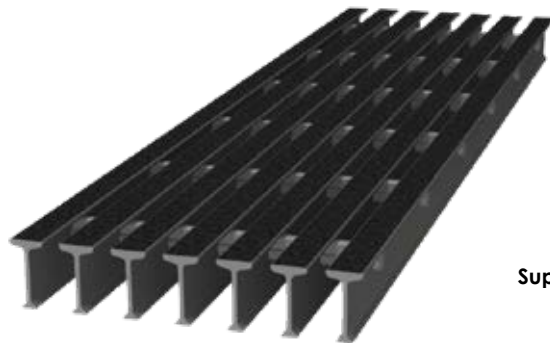
#### PARTIALLY-ASSEMBLED

CCG will pre-assemble certain parts of the structure like hand-railings or the main I-beams with the diaphragm connectors to minimize assembly at the job site and save on labor costs. Installers can use carts or trailers to move partially-assembled parts to remote sites for final assembly.

#### PREFABRICATED COMPONENTS

This is our most common form of shipment and installation. Workers can unload the FRP boardwalk and beam bridge components from the delivery truck using a fork truck or by hand, and then stage the parts at the trail head or a nearby designated staging area. CCG packages all FRP parts to allow for storage until the structures are ready to install. Volunteers, park crews, or contractors typically carry the parts to the bridge installation site. No site is too remote. We often have parts carried several miles or more on park trails. Once everything is at the job site, workers can easily assemble the structure using standard hand tools. Workers can build and install a 25' section of boardwalk or I-beam bridge in just a few hours with a crew of two or three workers. Typical boardwalk and I-beam sections are connected end-to-end on piers or other foundations to create a structure as long as you need.

Need an access structure with an open top? Our SuperGrate® Pultruded or Molded grating surface is the solution. Some of our clients prefer open decking to allow sunlight to penetrate below the elevated walkway.



SuperGrate Pultruded Grating Example

# Choose Creative Composites Group (CCG) for Infrastructure Composites Knowledge and Expertise

## Your Single Source for Engineered Pedestrian Boardwalks and Beam Bridges Using Fiber Reinforced Polymer (FRP)

Advance your products and projects beyond the limitations of traditional concrete, steel and wood by leveraging CCG. We are a leader in technical innovation that is backed by the industry's most comprehensive FRP manufacturing group for infrastructure.

CCG can help you engineer and manufacture pedestrian boardwalk and beam bridge projects to meet the needs of future generations.

We offer comprehensive engineering, design, consultation and fabrication for pedestrian access structures. Our manufacturing capabilities include the broadest range of engineered FRP solutions to enhance pedestrian infrastructure. That's possible only with our proven engineering processes, end-to-end collaboration, service and support resources. Since FRP composites last longer than conventional materials they often have a lower lifetime cost when you consider longer service life and low to no maintenance costs.

## Discover Your Custom Engineered FRP Provider for Pedestrian Boardwalks and Beam Bridges

Creative Composites Group is committed to becoming a trusted business partner who is keenly interested in your project's success. CCG works alongside your team, from owners to design engineers and contractors, to help you develop and customized FRP installations that meet the most demanding structural requirements and environmental conditions.

*Contact us for your next engineered FRP infrastructure project.  
We'd be thrilled to discuss it with you.*

**[CreativeCompositesGroup.com](https://CreativeCompositesGroup.com)**



### **Creative Composites Group**

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