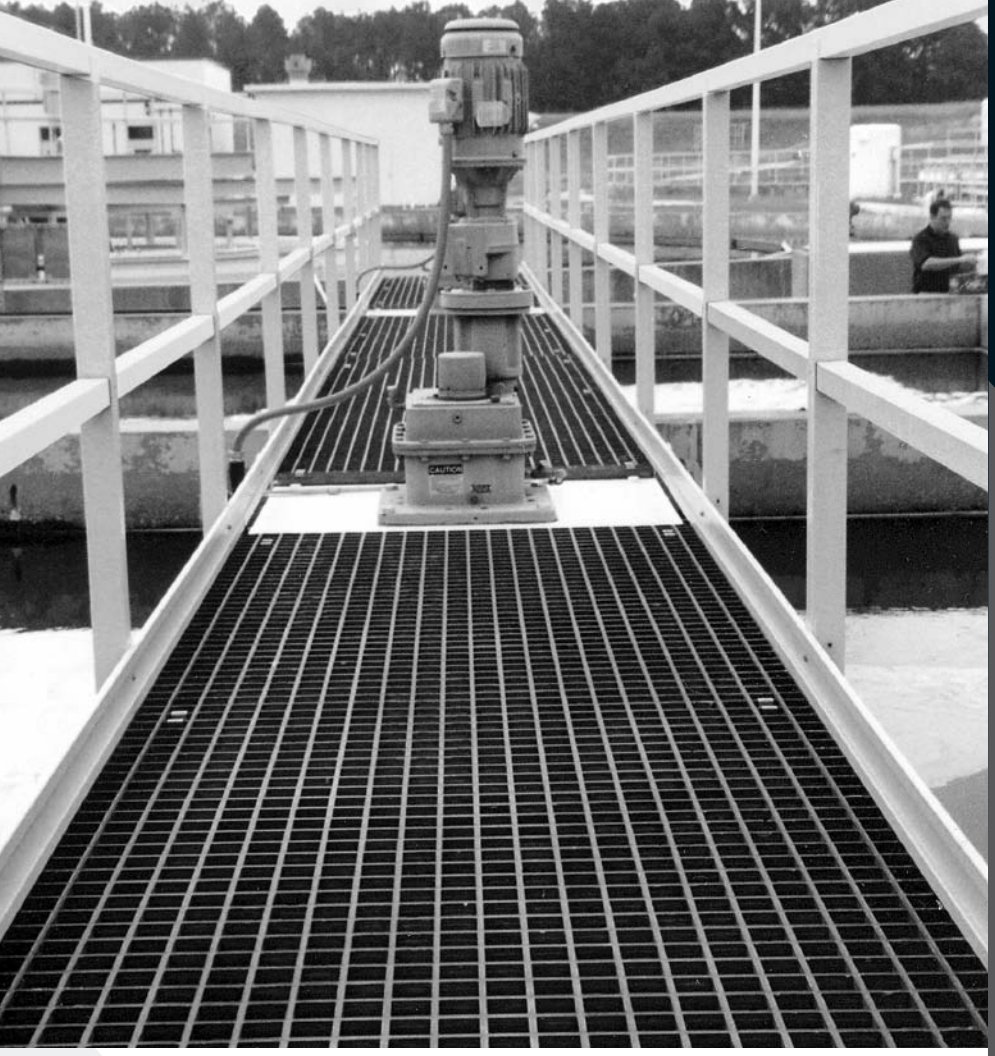


Installation Instructions

Dynarail® Modular Handrail System

- *Corrosion Resistant*
- *Nonconductive*
- *Fire Retardant*
- *High Strength-To-Weight Ratio*
- *Long, Low Maintenance Life*
- *Meets OSHA, IBC & Other Building Code Requirements*

Fibergrate
Composite Structures

High Performance Composite Solutions

QUALITY ISO 9001-2000 CERTIFIED

Simplified Handrail Instructions

The **Dynarail® Modular Handrail System Installation Instructions** have been designed to combine the best in fiberglass reinforced plastic (FRP) handrail with simplicity of installation. Fibergrate has made every attempt to provide clear and thorough instructions for installing this product. If you have any further questions, or need additional information, do not hesitate to contact Fibergrate at 800/527-4043.

By following these simple instructions, you should find installation of your handrail system quick and easy.

TOOLS REQUIRED

- □ **Drill**
- □ **Bits -**
  - ▫ **1/8”** (for rivets)
  - ▫ **3/16”** (for kickplate screws)
  - ▫ **9/16” & 11/16”** (for connection bolts)
- □ **Level**
- □ **Bonding (Epoxy) Kit(s)** (one for every 15 posts)
- □ **Rivet Gun**
- □ **Wrenches -**
  - ▫ **7/16”** (2 each)
  - ▫ **9/16”** (2 each)
- □ **Hack Saw**
- □ **25’ Tape Measure**
- □ **Sealing Kit**
- □ **Stir Sticks**
- □ **Sandpaper** (80 grit)

NOTE: Cuts and drilled holes must be sealed to maintain corrosion protection.

QUICK TIPS FOR INSTALLING HANDRAIL

1. Layout posts and post installation kits as required. Post installation drawings for various conditions are shown under **Section I - Post Installation Methods**. Install posts.

2. After installation of the posts, follow the instructions shown in **Section II - Rail Installation** for installation of toprails, midrails and kickplates. If installing rail extensions or returns, see **Section III - Splices & Connections**. Take care at the rail-to-post, rail splice and turns (see **Section III - Splices & Connections** for details) to correctly prepare the material surface and to correctly mix and apply the epoxy. Correct bond joints are important to enable the handrail to carry the required loads.

3. Attach endpost and rail endcaps at the required locations. (See **Section III - Splices & Connections** for details).

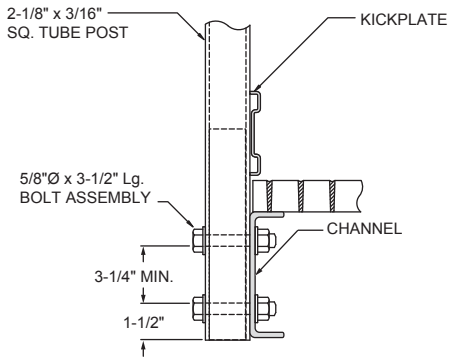
IMPORTANT

It is the installer’s responsibility to carefully follow fabrication and installation plans and instructions to ensure design performance characteristics of the Dynarail® handrail system. The installer could be liable for claims that result from improper installation.

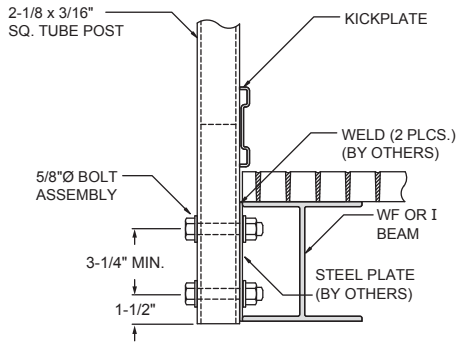
Section I - Post Installation Methods

FOR INSTALLATION CONDITIONS NOT SHOWN - CONTACT FIBERGRATE

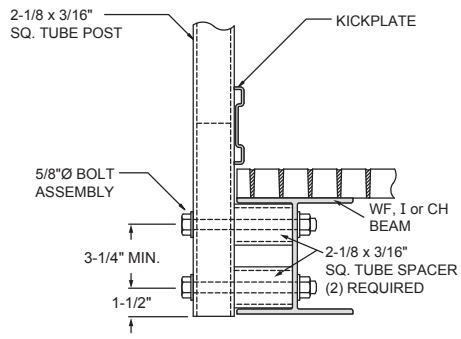
DRAWING A - POST TO FRP OR STEEL CHANNEL



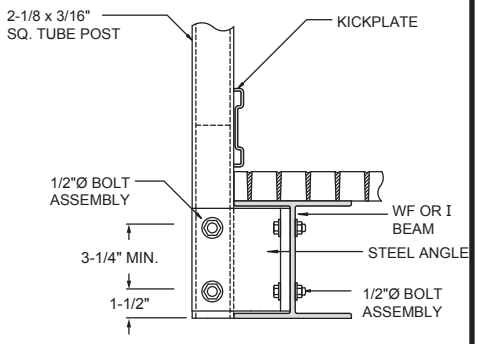
DRAWING B - POST TO STEEL PLATE ON STEEL BEAM



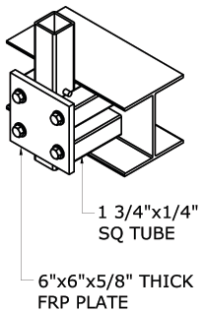
DRAWING C - POST TO FRP OR STEEL BEAM OR CHANNEL WITH FRP SPACERS



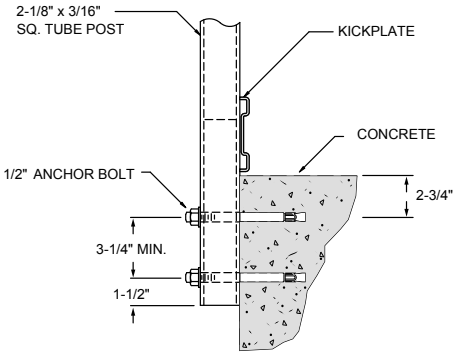
DRAWING D - POST TO STEEL ANGLE ON FRP OR STEEL BEAM



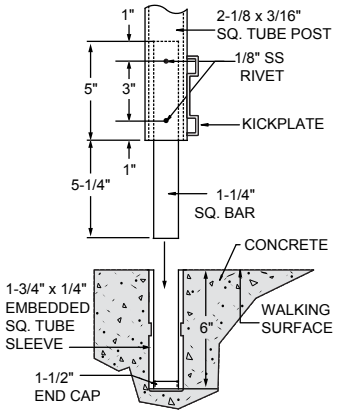
DRAWING E - REMOVABLE POST TO FRP OR STEEL BEAM



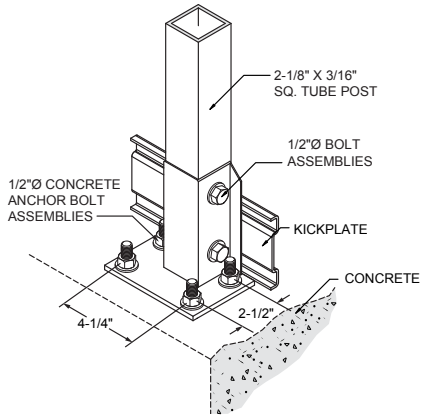
DRAWING F - SIDE-MOUNTED POST



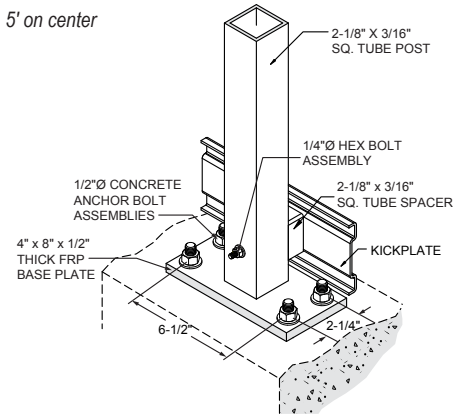
DRAWING G - EMBEDDED POST



DRAWING H - TOP MOUNT STAIN-LESS STEEL STANCHION BASE



DRAWING I - TOP MOUNT FRP STANCHION BASE



MAX PULLOUT FORCE ON EACH CONCRETE ANCHOR BOLT

	Drawing F	Drawing H	Drawing I
OSHA (200 lb)	2092 lbf	1292 lbf	1344 lbf
IBC (50 lb/ft)	3138 lbf	1938 lbf	1680 lbf

Section II - Rail Installation

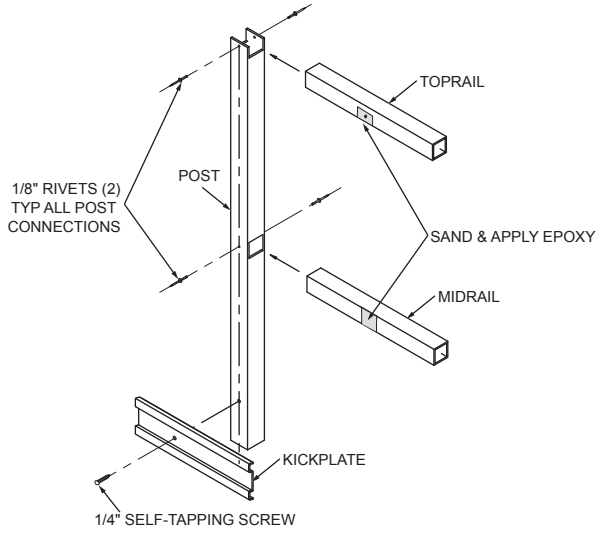
INSTALLING HORIZONTAL RAILS TO POSTS

1. Cut rails and kickplate to length.
2. Use level to make posts vertical and tighten attachment bolts.
3. Dry fit toprail into tops of posts and adjust to proper location. Mark all post/rail intersections on sides of toprail.
4. Slide toprail to the side enough to sand off glossy surfaces of marked post/rail intersections using an 80 grit sandpaper.
5. Apply properly mixed epoxy to sanded surfaces of toprail and reinstall toprail into post tops.
6. Drill a hole using a 1/8” bit through the center of the toprail/post intersections. Install 2 rivets (one on each side) at all posts to secure the toprail while epoxy cures.
7. Dry fit midrail into square holes of posts and slide into position. Mark all rail/post intersections on all sides of midrail.
8. Slide rail to side and sand off glossy surfaces of marked post/rail intersections using an 80 grit sandpaper.
9. Apply epoxy to the sanded surfaces of midrail and return the rail to its proper location.
10. Drill a hole using a 1/8” bit through the center of the midrail/post intersections. Install 2 rivets (one on each side) at all posts to secure the midrail while epoxy cures.
11. Align bottom of kickplate 1/4” above walking surface.
12. Drill 3/16” hole through center of kickplate at posts.
13. Install kickplate to posts using 1/4” self-tapping screws. Be careful not to overtorque and strip the screws.

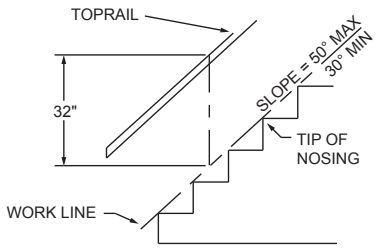
INSTALLING INCLINED RAILS TO POSTS

1. Cut rails to length.
2. Slide midrail through inclined posts.
3. Mount post(s) to stairway stringer with toprail 32” high as measured from the work line (**see Drawing K**).
4. Use level to make posts vertical and tighten attachment bolts.
5. Slide toprail down into tops of posts. Rails should make contact with cutout in posts as shown in **Drawing L**.
6. With rails in proper location, mark area in contact with posts.
7. Slide rails to one side and sand contact areas with 80 grit sandpaper to remove glossy surface on toprail and midrail.
8. Apply epoxy to midrail and toprail.
9. Replace toprail onto post tops and slide midrail through posts to proper location.
10. Tighten post attachment bolts.
11. Drill hole using 1/8” drillbit through posts at toprail and midrail.
12. Install 2 rivets (supplied) to each rail/post intersection, apply epoxy to tip of each rivet.
13. Mark area of posts covered by gap cover plates and sand.
14. Apply epoxy to sanded area of posts and inside of gap cover plates.
15. Drill one hole using 1/8” drill bit through the gap cover plate and post, then insert and tighten the rivet to secure the cover plate to the post until the epoxy cures.

DRAWING J - HORIZONTAL RAIL INSTALLATION

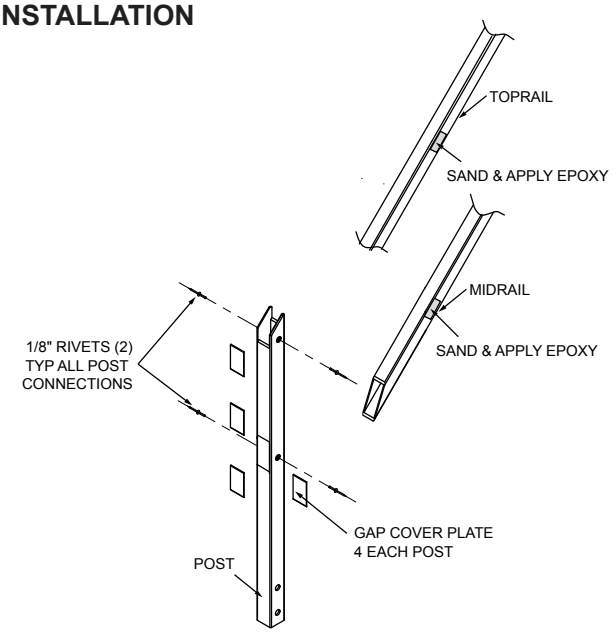


DRAWING K - STAIRWAY WORK LINE (OSHA)



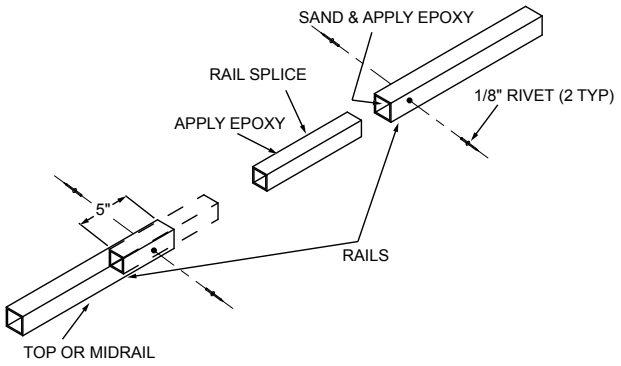
Check Codes for Specific Requirements

DRAWING L - INCLINED RAIL INSTALLATION

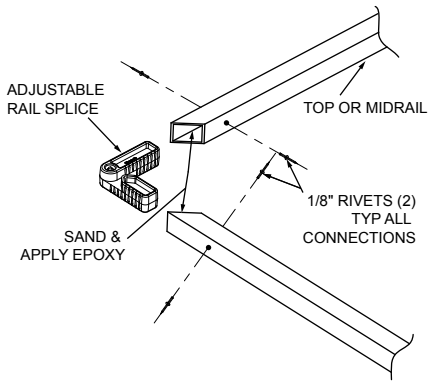


Section III - Splices & Connections

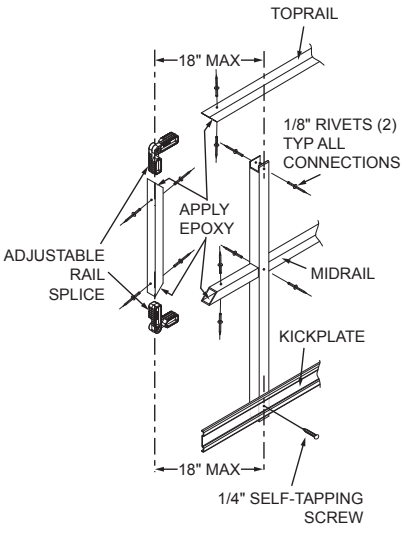
DRAWING M - RAIL SPLICE



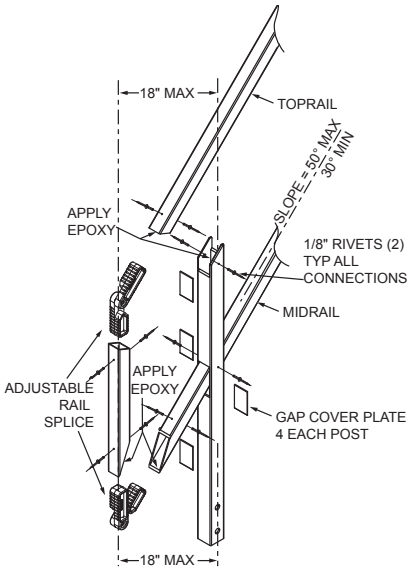
DRAWING N - ADJUSTABLE RETURN



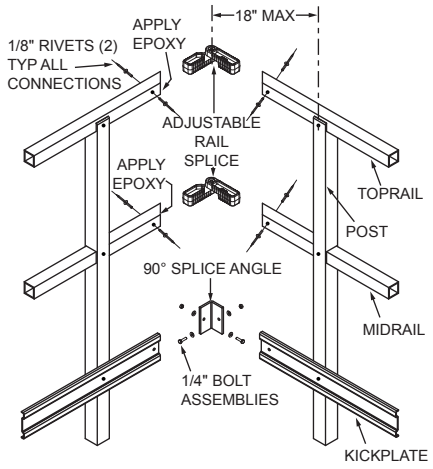
DRAWING O - HORIZONTAL RETURN



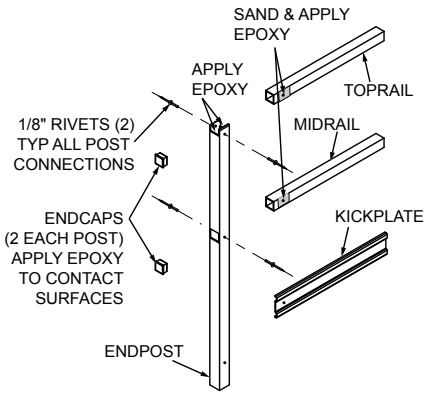
DRAWING P - INCLINED RETURN



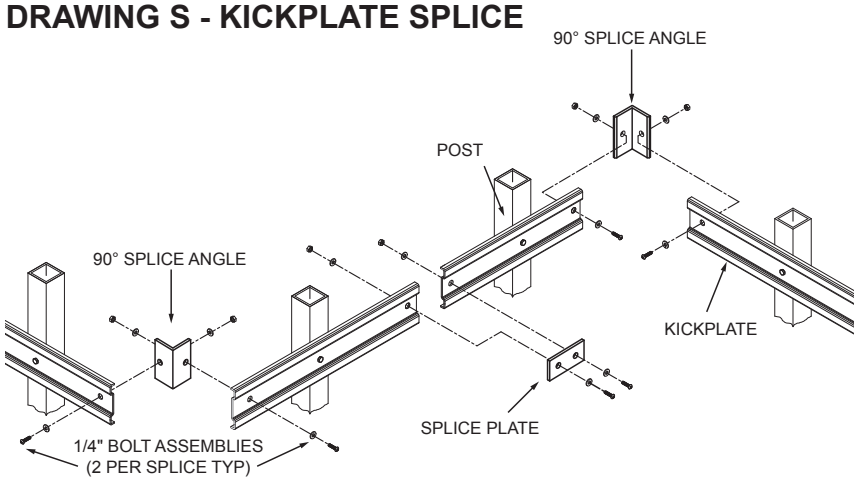
DRAWING Q - 90° TURN



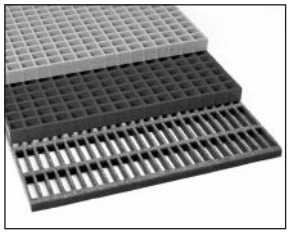
DRAWING R - ENDPOST



DRAWING S - KICKPLATE SPLICE



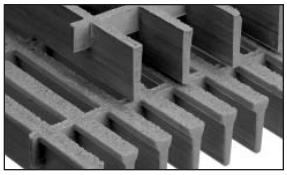
Fibergrate Products & Services



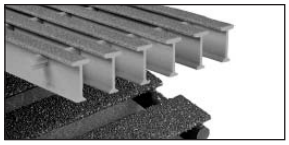
Fibergrate® Molded Grating

Fibergrate molded gratings are designed to provide the ultimate in reliable performance, even in the most demanding conditions. Fibergrate offers the widest selection in the market with more than ten resins including Chemgrate CP-84 and more than twenty grating configurations available in many panel sizes and surfaces.

RIGIDEX® Moltruded® Grating



RIGIDEX Moltruded gratings are the first fiberglass gratings to combine the corrosion resistance of molded grating with the longer span capacity of pultruded grating, all at the low cost of metal gratings.



Safe-T-Span® Pultruded Industrial and Pedestrian Gratings

Combining corrosion resistance, long-life and low-maintenance designs, Safe-T-Span provides unidirectional strength for industrial and pedestrian pultruded grating applications.

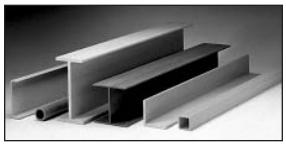
Dynarail® Handrail

Easily assembled from durable prefabricated components or engineered to your specifications, Dynarail handrail meets or exceeds OSHA and strict building code requirements for safety and design.

Dynarail® Safety Ladder System

Easily assembled on site, Dynarail safety ladder systems meet or exceed OSHA requirements. Though less costly than prefabricated ladder systems, these safety ladders provide a custom fit to the supporting structure.

Dynaform® Structural Shapes



Fibergrate offers a wide range of pultruded structural components for industrial use, including bars, rods, tubes, beams, channels, leg angles and plates.

Stair Solutions

Fibergrate offers a wide range of slip-resistant products to meet your stair safety needs. These durable products which include treads, tread covers and covered stair treads are a long-term, cost-efficient solution for your facility.

Grating Pedestals

Uniquely designed adjustable single and quad head pedestals for square mesh molded grating are manufactured to provide safe and economical support for elevated flooring.

Engineering and Fabrication Services

Combining engineering expertise with an understanding of fiberglass applications, Fibergrate provides turnkey design and fabrication of fiberglass structures, including platforms, catwalks, stairways and test racks.

Fibergrate Composite Structures Inc.
5151 Beltline Road, Suite 700, Dallas, TX 75254
Phone: 800-527-4043 • Fax: 972-250-1530
www.fibergrate.com • Email: info@fibergrate.com