

Fiberglass Guardrail, Handrail & Ladders



HIGH PERFORMANCE COMPOSITE SOLUTIONS



FRP Railing & Ladder Systems

The FRP guardrail, handrail, and ladder systems offered by Fibergrate Composite Structures combine corrosion resistance, long life and a low maintenance design, making them superior to conventional metallic systems. These advanced systems are designed and manufactured with lightweight components that are easy to fabricate and install. Savings on labor and equipment often make the total installed cost of FRP railing systems

comparable to that of steel. Combining lower installation costs with low maintenance and long life results in a significantly lower life cycle cost than that of its counterparts.



DYNARAIL® GUARDRAIL

The 1-3/4" x 1/8" pultruded square tube guardrail line includes everything needed to install OSHA- and IBC-compliant horizontal and inclined railing systems with either two or three rails. Fibergrate can also provide specialty picketed guardrail systems.



DYNAROUND™ GUARDRAIL

Fibergrate's newest guardrail solution is composed of 1.9" O.D. pultruded tubes. This UV-coated system was designed as a more durable alternative to standard aluminum and steel round railings. DynaRound can be used in applications where safety and ergonomics are a major concern. Round rails eliminate the flat surfaces of square tube systems which can become a resting place for tools and other equipment, creating potentially hazardous situations for dropping/falling objects. The rounded railing and corners also eliminate sharp edges, providing a more comfortable grip for end-users. In addition, the overall appearance of the system is more aesthetically pleasing than the square tube alternative because all fasteners are hidden which provides a smooth, clean look. Fibergrate can also provide customized round guardrail systems.

DYNARAIL® HANDRAIL

The Dynarail handrail (grab rail) system can be added to a Dynarail (square tube) or DynaRound (round tube) guardrail or wall to meet code requirements.

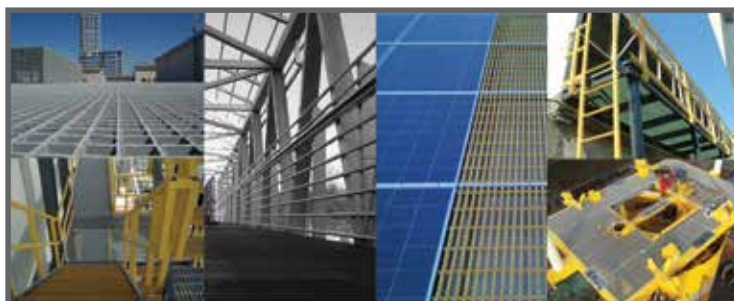
DYNARAIL® LADDERS

The Dynarail ladder line includes ladders, standard walk-thrus and safety cages.

Dynarail and DynaRound components, including the railing, kickplate, and ladder rungs, are manufactured using the proven Fibergrate pultrusion process. In this process, continuous fiber rovings and mat as well as a synthetic veil are mechanically drawn through a resin bath and shaped through a series of forming guides, then pulled through a heated die.



FIBERGRATE MARKETS



- Architectural/Commercial
- Bridge & Highway
- Chemical
- Food & Beverage
- Manufacturing
- Metals & Mining
- Oil & Gas
- Power/Utilities
- Recreation
- Telecommunications
- Transportation
- Water & Wastewater

Dynarail® & DynaRound™ Railings & Ladders

Why Use FRP?



Corrosion Resistant: Dynarail® and DynaRound™ fiberglass railings and ladders are known for their ability to provide corrosion resistance in the harshest environments and chemical exposures.



Low Maintenance: The corrosion resistant properties of Fibergrate's FRP products reduce or eliminate the need for sandblasting, scraping and painting. Products are also easily cleaned with a high pressure washer.



Electrically & Thermally Non Conductive: Fiberglass is electrically non conductive for safety and has low thermal conductivity which results in a more comfortable product when physical contact occurs.



Low Install Cost: Due to ease of fabrication and lightweight, FRP guardrail and handrail systems eliminate the need for heavy lifting equipment. Components are also labeled with tags that correspond to engineering drawings to ensure time-efficient and accurate installation.



Fire Retardant: Flame spread rating of 25 or less, as tested in accordance with ASTM E-84, and meets the self-extinguishing requirements of ASTM D-635.



Long Service Life: Fiberglass products provide outstanding durability and corrosion resistance in demanding applications, therefore providing improved product life over traditional materials.



UV Protection: UV inhibitors in the resin matrix, along with a synthetic surfacing veil, provide optimum protection from the effects of UV weathering. *(Note: An optional UV coating is required for Dynarail railing and ladder system installations with intense UV exposure. The DynaRound system is UV coated.)*



NSF® Standard 61-Certified:

Fibergrate is now able to offer NSF Standard 61-Certified Dynarail® FRP guardrail, handrail and ladder systems. These products complement the complete line of NSF Standard 61-Certified Fibergrate® molded gratings, Dynaform® fiberglass structural shapes, and Safe-T-Span® pultruded gratings assembled from NSF Standard 61-Certified components. Molded gratings are available in all Fibergrate® molded grating mesh patterns and thicknesses, except 4' x 12' Micro-Mesh® panels.



Heavy Metal Safe:

The EPA, OSHA and other regulatory agencies created to protect our lives and our natural resources have increased legislation to control heavy metals such as lead, chrome, cadmium and other metals in all products where exposure is a health threat. Fibergrate Composite Structures Inc. supports this strengthened legislation and has, for more than 20 years, voluntarily tested for heavy metals in our products and minimized or eliminated heavy metals from our products.

Resin Systems

● ISOFR

Isophthalic polyester resin formulation with a low flame spread rating of 25 or less designed for applications where there is moderate exposure to corrosive elements.

● VEFR

Vinyl ester resin system with a flame spread of 25 or less for dependable resistance to both acidic and alkaline environments.

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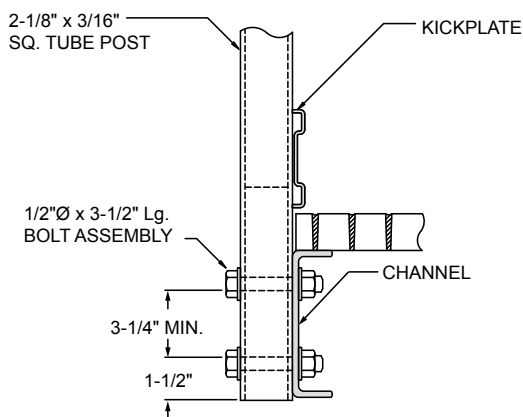
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Dynarail® Post Installation Methods

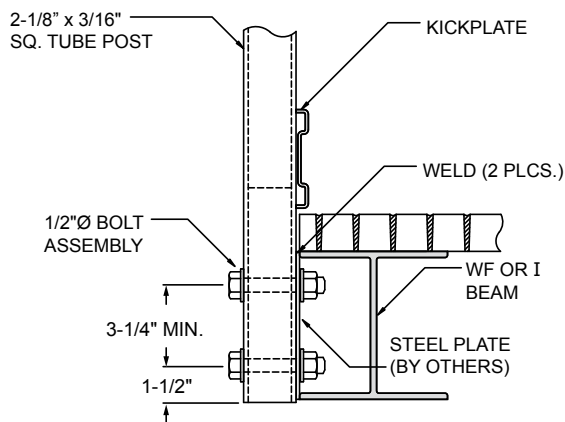
See page 7 for part numbers. For installation conditions not shown, contact Fibergrate.

All details are for posts spaced 6' max on centers to meet a F.O.S. of 2.0 under OSHA and IBC loads, unless noted otherwise.

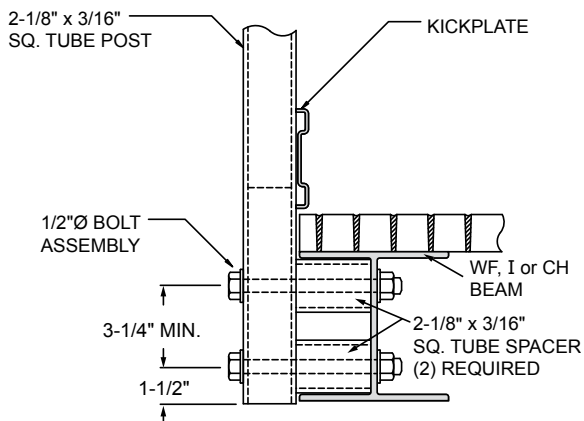
**DRAWING A -
POST TO FRP OR STEEL CHANNEL**



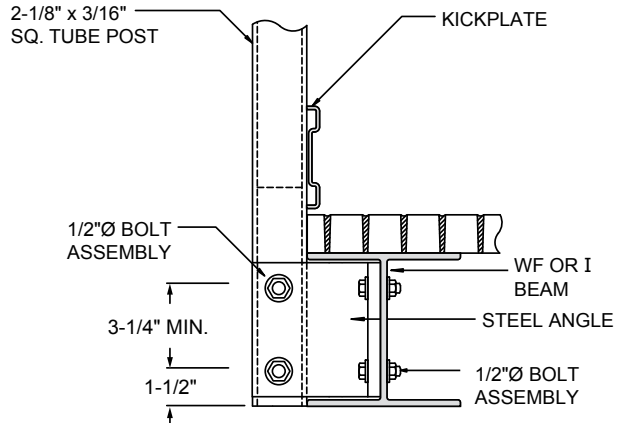
**DRAWING B -
POST TO STEEL PLATE ON STEEL BEAM**



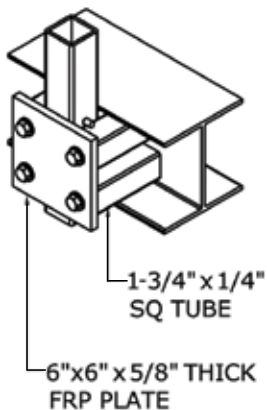
**DRAWING C -
POST TO FRP OR STEEL BEAM OR CHANNEL WITH
FRP SPACERS**



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



**DRAWING E -
REMOVABLE POST TO FRP OR STEEL BEAM**

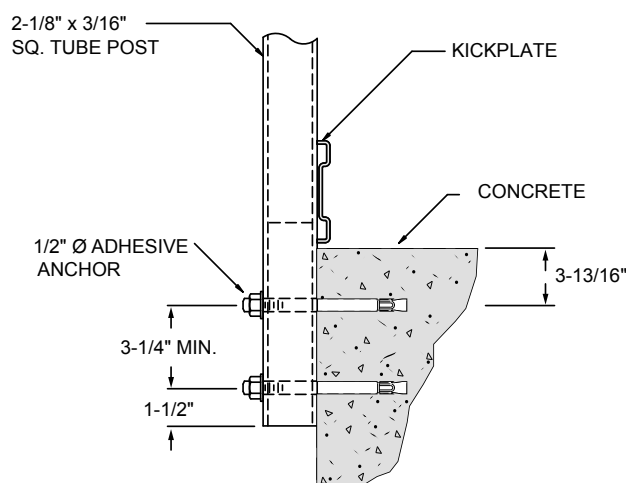


Dynarail® Post Installation Methods

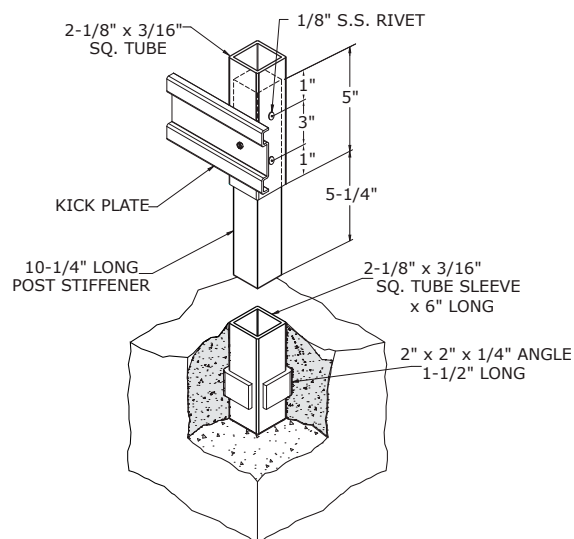
See page 7 for part numbers. For installation conditions not shown, contact Fibergrate.

All details are for posts spaced 6' max on centers to meet a F.O.S. of 2.0 under OSHA and IBC loads, unless noted otherwise.

**DRAWING F -
SIDE-MOUNTED POST**

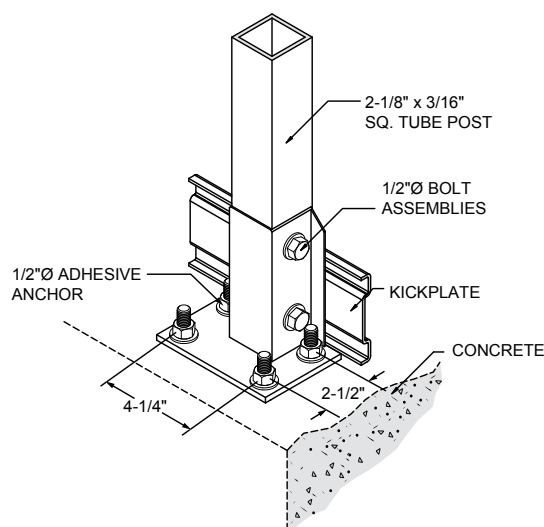


**DRAWING G -
EMBEDDED POST**



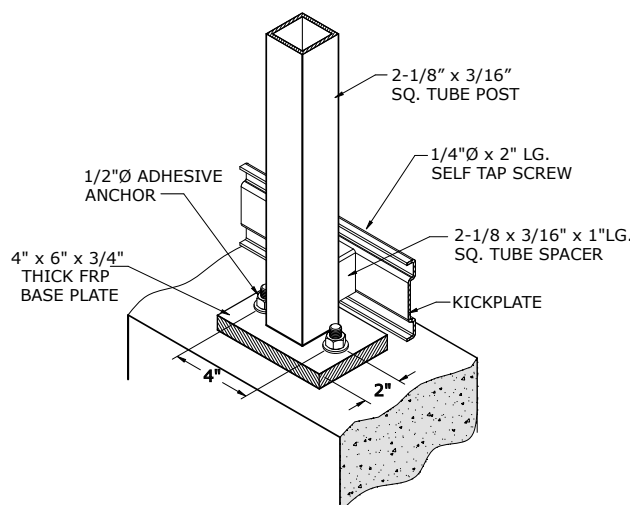
**DRAWING H -
TOP MOUNT STAINLESS STEEL STANCHION BASE**

5'-6" max on center post spacing for IBC to meet a F.O.S. of 2.0



**DRAWING I -
TOP MOUNT FRP STANCHION BASE**

4' max on center post spacing for IBC to meet a F.O.S. of 2.0

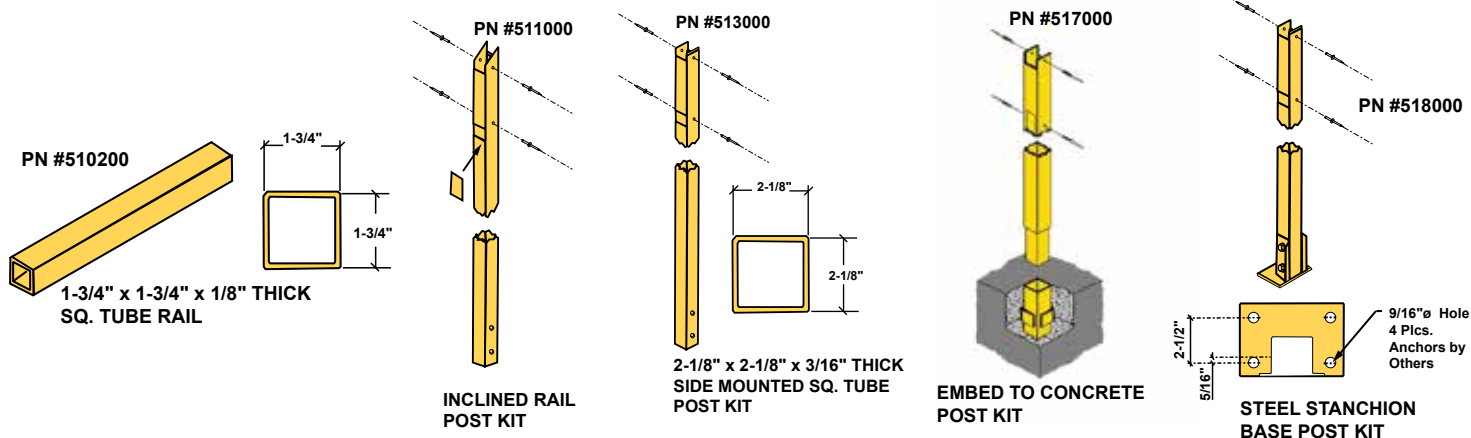
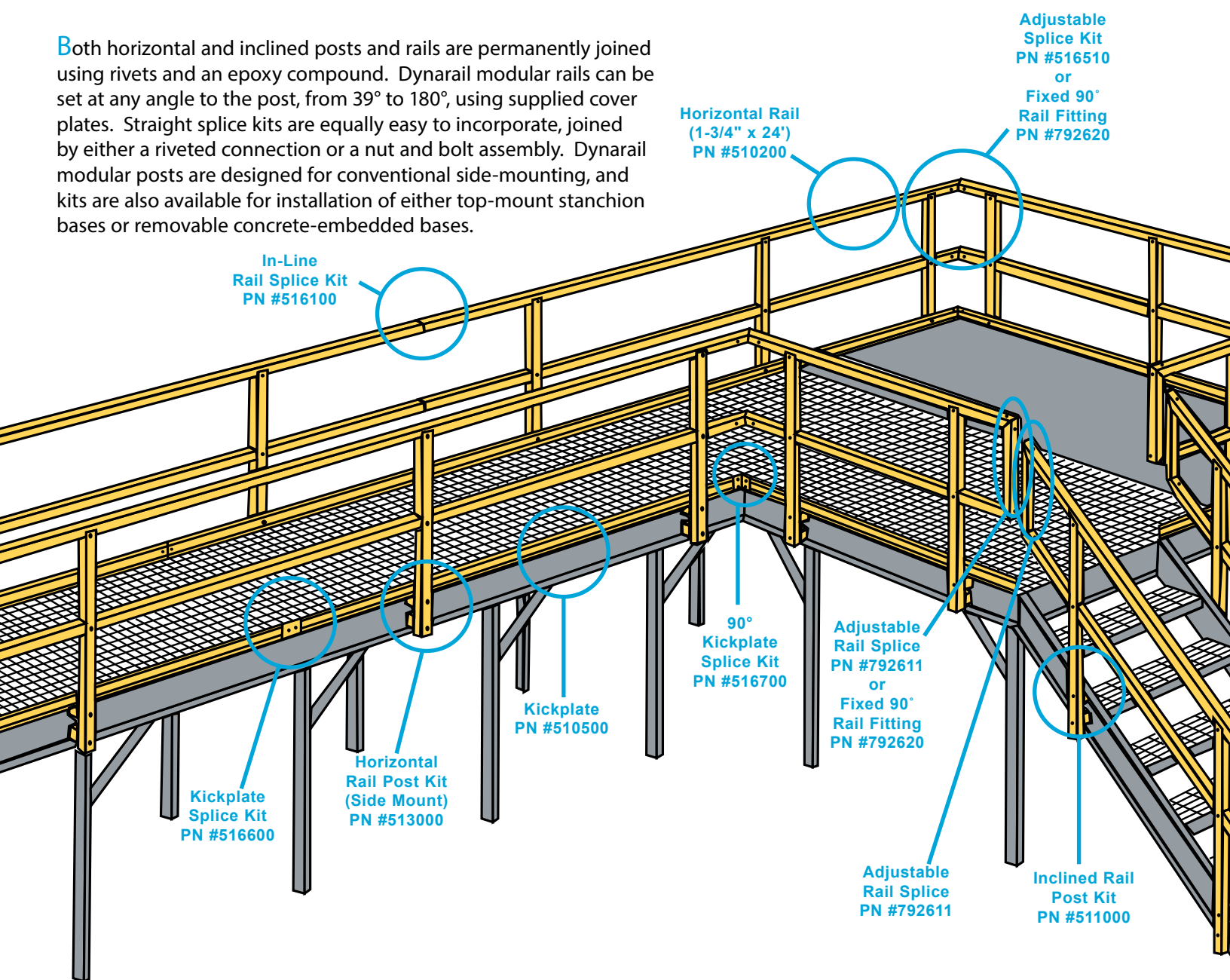


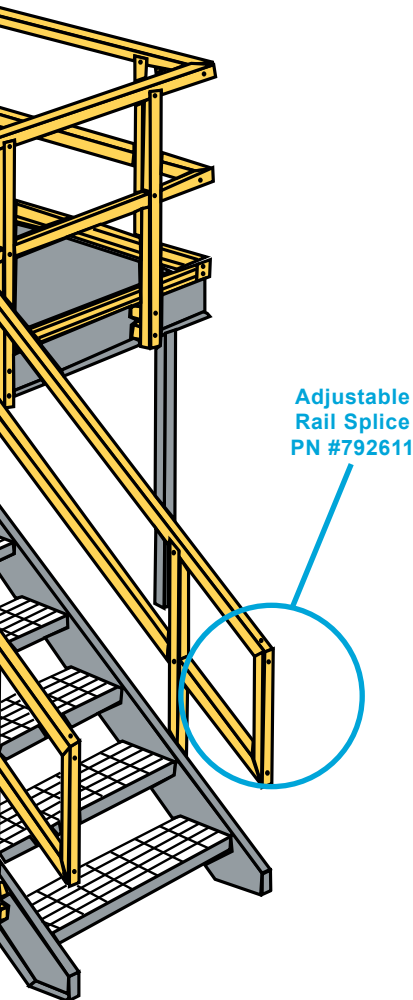
MAX PULLOUT FORCE ON EACH CONCRETE ANCHOR BOLT

	Drawing F	Drawing H	Drawing I
OSHA (200 lbf)	2129 lbf	1292 lbf	2100 lbf
IBC (50 lbf/ft)	3193 lbf	1777 lbf	2100 lbf

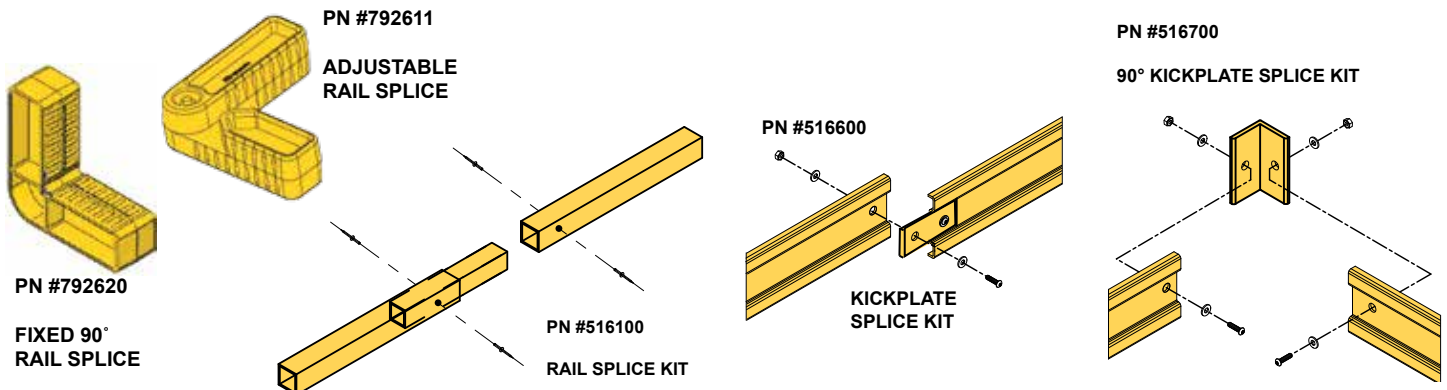
Dynarail® Modular Guardrail System

Both horizontal and inclined posts and rails are permanently joined using rivets and an epoxy compound. Dynarail modular rails can be set at any angle to the post, from 39° to 180°, using supplied cover plates. Straight splice kits are equally easy to incorporate, joined by either a riveted connection or a nut and bolt assembly. Dynarail modular posts are designed for conventional side-mounting, and kits are also available for installation of either top-mount stanchion bases or removable concrete-embedded bases.





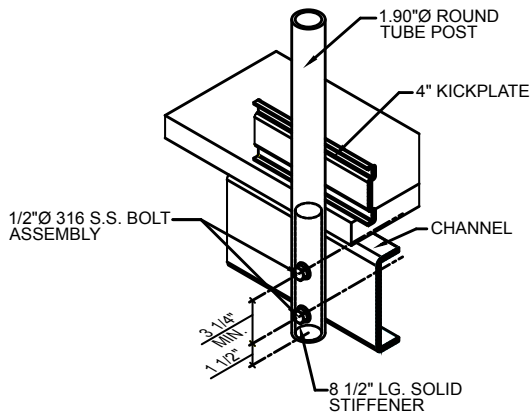
PART #	DESCRIPTION	
	NOTE: All part numbers listed are ISOFR and are NON-UV coated items.	
511000	Post Kit (Inclined Rail)	1 ea. Post 2-1/8" x 3/16" x 45" High Sq. Tube
		4 ea. Cover Plates 2-1/8" x 3-1/4"
		4 ea. Rivets 18-8 SS
513000	Post Kit (Horizontal Rail) Side Mount	1 ea. Post 2-1/8" x 3/16" x 50-1/4" High Sq. Tube (Undrilled)
		4 ea. Rivets 1/8" x 3/8" 18-8 SS
		1 ea. #10 x 1" Hex Washer Head Self Tap Screw
517000	Post Kit (Horizontal Rail) Removable Concrete Embedded	1 ea. Post 2-1/8" x 3/16" x 41-1/2" High
		1 ea. 1-3/4" Sq. Bar Extension 5" Long
		1 ea. Sleeve 2-1/8" x 3/16" x 6" Sq. Tube (Ships Loose)
		4 ea. Rivets 18-8 SS
		1 ea. #10 x 1" Hex Washer Head Self Tap Screw
518000	Post Kit (Horizontal Rail) Top Mount (SS Base)	1 ea. Post 2-1/8" x 3/16" x 41-1/4" High
		1 ea. Stanchion Base 316 SS
		2 ea. Bolts 1/2" x 3" and Nuts 316 SS
		4 ea. Rivets 18-8 SS
		1 ea. #10 x 1" Hex Washer Head Self Tap Screw
518200	Post Kit (Horizontal Rail) Top Mount (FRP Base)	1 ea. Post 2-1/8" x 3/16" x 40-3/4" High
		1 ea. Stanchion Base FRP
		1 ea 2-1/8" x 3/16" Sq. Tube Kickplate Spacer
		1 ea. 1/4" Hex Bolt Assembly
		4 ea. Rivets 18-8 SS
510500	Kickplate	9/16" Deep x 4" High x 1/8" Thick x 24' Long
516600	Kickplate Splice Kit	1 ea. Splice 1-3/4" x 4" x 3/16"
		2 ea. 1/4" x 1" x Socket Round Head Bolts, Nuts and Washers
516700	Kickplate Splice Kit 90°	1 ea. Splice 2-1/8" x 1-1/8" x 3/16"
		2 ea. 1/4" x 1" x Socket Round Head Bolts, Nuts and Washers
516510	Adjustable Splice Kit	2 ea. Adjustable Rail Splices
		8 ea. Rivets 18-8 SS
516400	90° Fixed Splice Kit	2 ea. Fixed 90° Rail Splices
		8 ea. Rivets 18-8 SS
516100	In-Line Splice Kit	1 ea. Splice 1-1/2" Sq. Tube
		4 ea. Rivets 18-8 SS
510200	Rail	1-3/4" x 1/8" x 24' Long Yellow Square Tube
792611	Adjustable Rail Splice	1 ea. Adjustable from 39° to 180°
792620	90° Rail Splice	1 ea. Fixed 90° Railing Connector
519105	In-Line Rail Splice	In-Line Splice Square 9-7/8"
519170	End Cap	End Cap for 1-3/4" Sq. Tube Guardrail
510100	Spacer Material	21' of 2-1/8" x 3/16" Yellow Square Tube
Bonding material should be ordered with each shipment of railing material. Order 1 kit (# 549100) for every 15 posts		
SI Conversions: inch = 25.4 mm 1 foot = .305 m 1 mm = .0394 inches 1 meter = 3.28 feet		



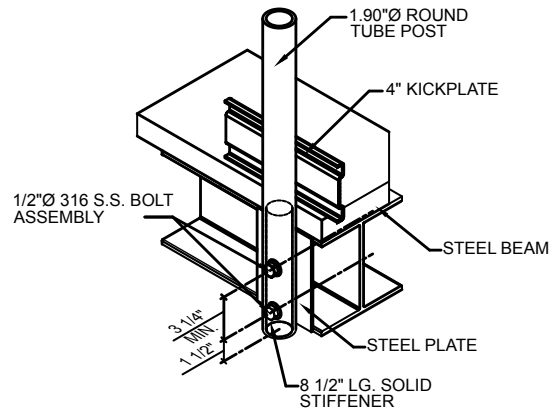
DynaRound™ Post Installation Methods

All details are for posts spaced 4' max on centers to meet a F.O.S. of 2.0 under OSHA and IBC loads, unless noted otherwise.

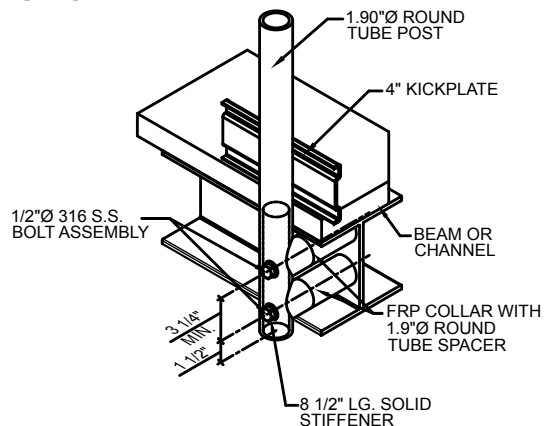
**DRAWING A -
POST TO FRP OR STEEL CHANNEL**



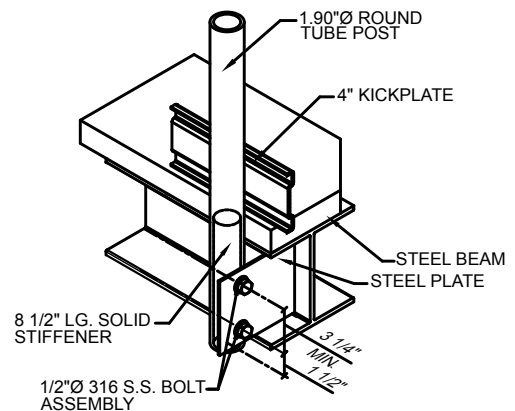
**DRAWING B -
POST TO STEEL PLATE ON STEEL BEAM**



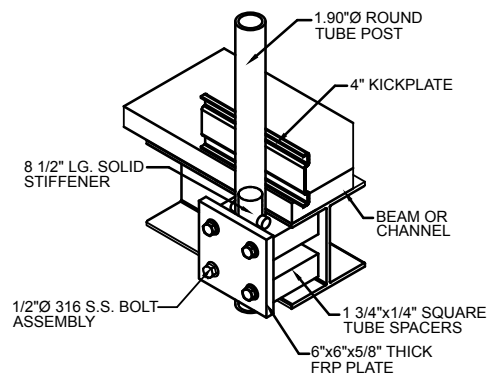
**DRAWING C -
POST TO FRP OR STEEL BEAM OR CHANNEL WITH
FRP SPACERS**



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



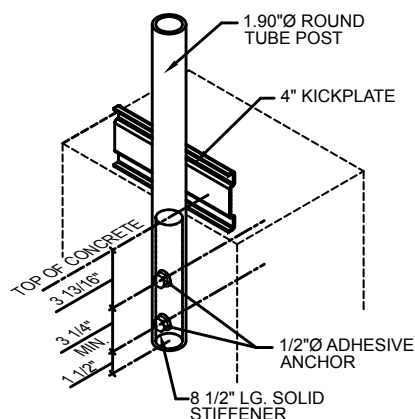
**DRAWING E -
REMOVABLE POST TO FRP OR STEEL BEAM**



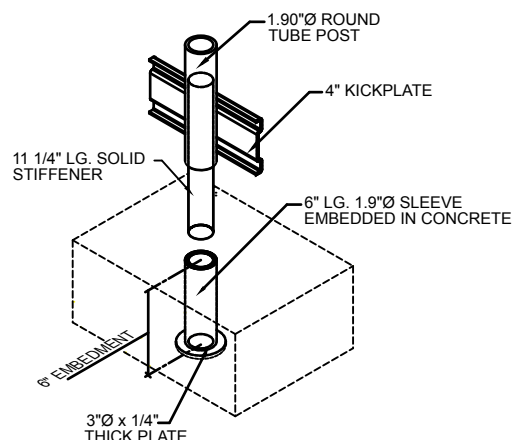
DynaRound™ Post Installation Methods

All details are for posts spaced 4' max on centers to meet a F.O.S. of 2.0 under OSHA and IBC loads, unless noted otherwise.

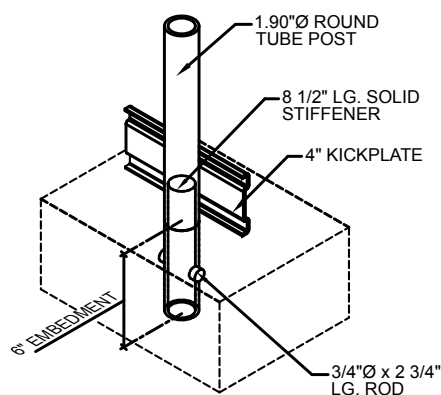
**DRAWING F -
SIDE MOUNT POST TO CONCRETE**



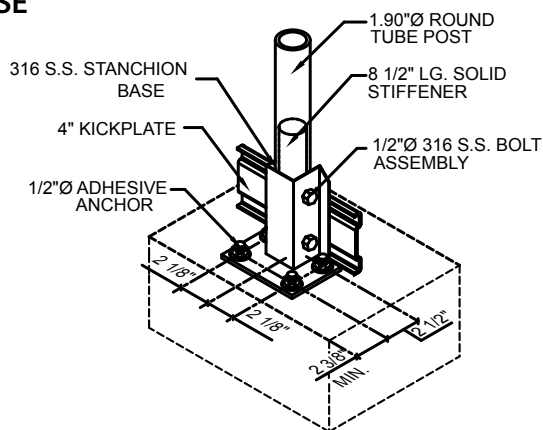
**DRAWING G -
REMOVABLE EMBEDDED POST IN CONCRETE**



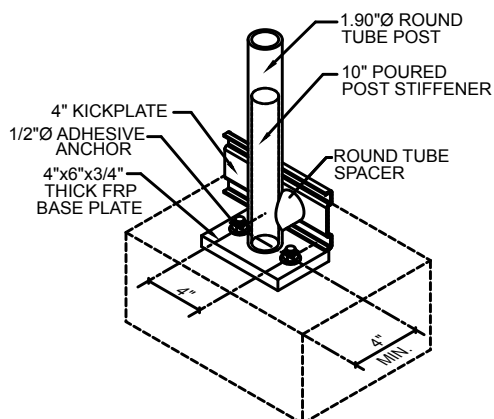
**DRAWING H -
FIXED EMBEDDED POST IN CONCRETE**



**DRAWING I -
TOP MOUNTED STAINLESS STEEL STANCHION
BASE**

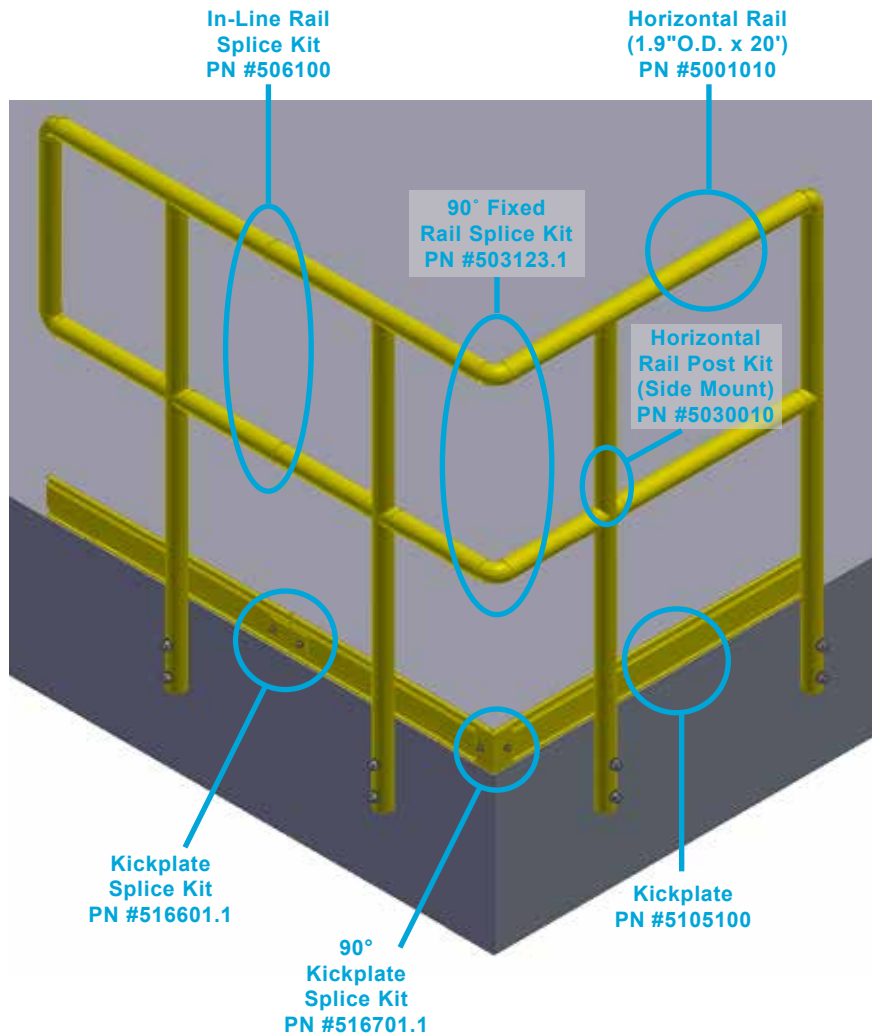


**DRAWING J -
TOP MOUNTED FRP STANCHION BASE**

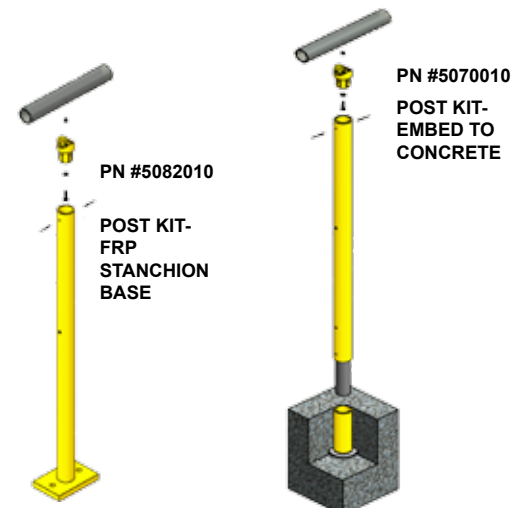
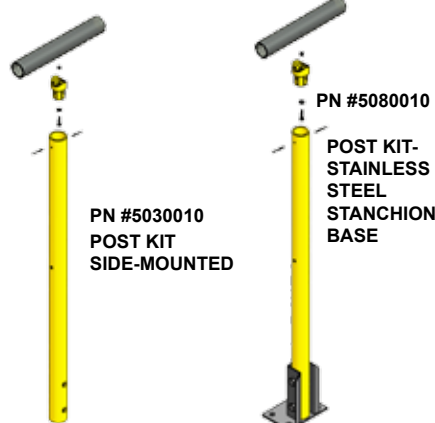
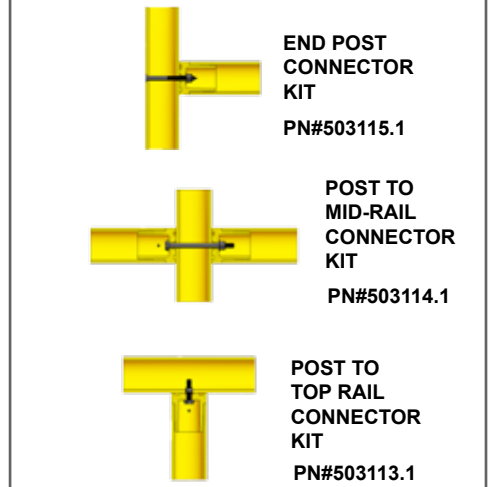


DynaRound™ Modular Guardrail System

The DynaRound modular railing system is offered as UV coated for maximum weather resistance. Straight and adjustable rail splice kits are easy to incorporate, installed with riveted + bonded connections. Rail to post connections use saddle connectors with hidden bolts for the cleanest installation possible. Specially designed saddles and connectors minimize the number of miter cuts required to make a gap free installation easy. *Inclined guardrail assemblies need to be shop fabricated.*

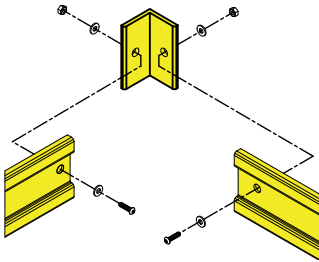


Cross Sections of Rail to Post Connections

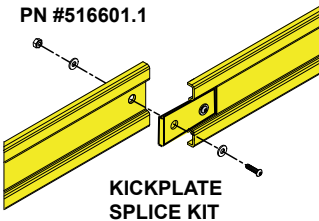


PN #516701.1

90° KICKPLATE SPLICE KIT



PN #516601.1



**KICKPLATE
SPLICE KIT**



**PN#792614
ADJUSTABLE
RAIL SPLICE**



**PN #7926130
FIXED 90°
RAIL SPLICE**

**SS HANDRAIL BRACKET
TO POST KIT**

**PN#503116.1
1-1/2" FINGER
CLEARANCE**

**PN#503117.1
2-1/4" FINGER
CLEARANCE**

SPACER

**PN#5083310
1-1/2" FINGER
CLEARANCE
PN#5083320
2-1/4" FINGER
CLEARANCE**



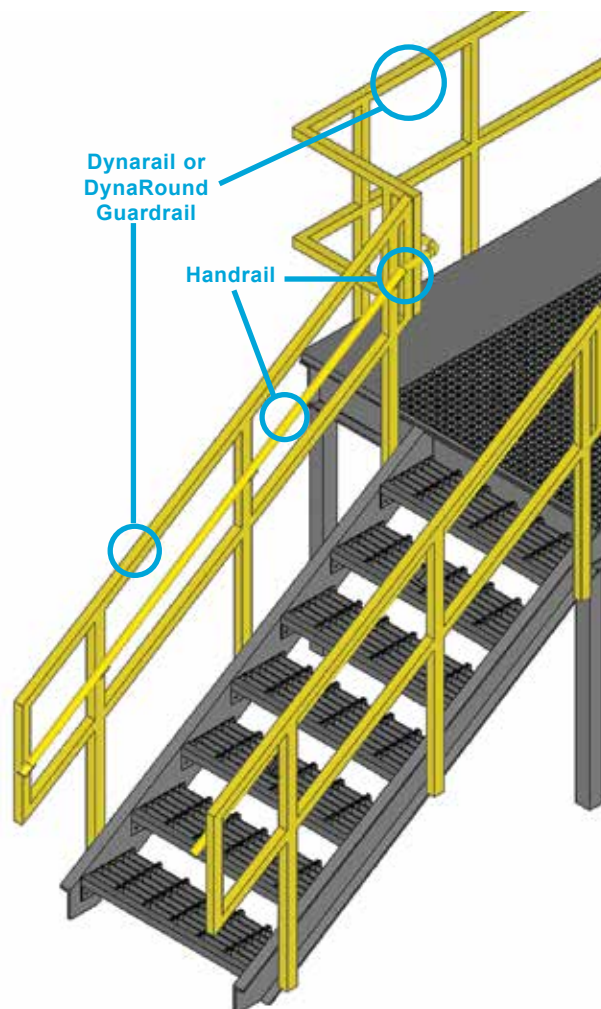
**PN#794509
(BRACKET ONLY)**

TWO SELF TAPPING SCREWS (PN#756670) ARE REQUIRED TO ATTACH SS BRACKET TO HANDRAIL TUBE. ONE SPACER (PN#5083310 OR PN#5083320) AND ONE 3/8" x 4-1/2" DIA HEX HEAD BOLT ARE REQUIRED TO CONNECT BRACKET TO GUARDRAIL POST.

PART #	DESCRIPTION	
NOTE: All part numbers listed are VEFR; those containing exposed material are UV coated items.		
5030010	Post Kit Side Mount	1 ea. Round Tube Horizontal Post
		Saddle Connector
		1/4" x 1-1/2" Bolt, 1/4" Washer
		1 ea. #10 x 1" Hex Washer Head Self Tap Screw
		1/4"-20 Rivnut 18-8 SS; 2 ea. Rivets 18-8 SS
5070010	Post Kit Removable Embed to Concrete	1 ea. Round Tube Removable Horizontal Intermediate Post
		Saddle Connector
		1/4" x 1-1/2" Bolt
		1 ea. #10 x 1" Hex Washer Head Self Tap Screw
		1/4"-20 Rivnut 18-8 SS; 2 ea. Rivets 18-8 SS
5082010	Post Kit Top Mount w/ FRP Stanchion Base	1 ea. Round Tube Horizontal Intermediate Post
		1 ea. Stanchion Base FRP
		Saddle Connector
		1/4" x 1-1/2" Bolt
		1 ea. #10 x 1" Hex Washer Head Self Tap Screw
		1/4"-20 Rivnut 18-8 SS; 2 ea. Rivets 18-8 SS
5080010	Post Kit (SS Base)	1 ea. Round Tube Horizontal Intermediate Post
		1 ea. Stanchion Base 316 SS
		2 ea. 1/2" x 3" Bolts; 1/4" x 1-1/2" Bolt
		Saddle Connector
		1 ea. #10 x 1" Hex Washer Head Self Tap Screw
		1/4"-20 Rivnut 18-8 SS; 2 ea. Rivets 18-8 SS
5105100*	Kickplate	9/16" Deep x 4" High x 1/8" Thick x 24' Long
516601.1*	Kickplate Splice Kit	1 ea. Splice 1-3/4" x 4" x 3/16"
		2 ea. 1/4" x 1" x Socket Round Head Bolts, Nuts and Washers
516701.1*	Kickplate Splice Kit 90°	1 ea. Splice 2-1/8" x 1-1/8" x 3/16"
		2 ea. 1/4" x 1" x Socket Round Head Bolts, Nuts and Washers
503115.1	End Post Connector Kit	Saddle Connector
		1 ea. 1/4" x 2-3/4" Flat Head Machine Screw, 1/4" Washer, 1/4" Lock-nut
		2 ea. 1/8" Rivets
503114.1	Post to Mid Rail Connector Kit	2 ea. Saddle Connectors
		1 ea. 1/4" x 3-1/2" Hex Head Bold, 2 ea. 1/4" Washer
		1 ea. 1/4" Lock-nut; 4 ea. 1/8" Rivets
503113.1	Post to Top Rail Connector Kit	Saddle Connector
		1 ea. 1/4" x 1" Hex Head Bolt, 1/4" Washer, 1/4" Rivnut
		2 ea. 1/8" Rivets
503116.1	Handrail Bracket to Post Kit (1-1/2" Finger Clearance)	1 ea. 1.9" O.D. Round Tube Spacer (1-1/2" Finger Clearance)
		2 ea. #14 x 1" Self Tap Screw
		SS Handrail Bracket
		1 ea. 3/8" x 4-1/2" Hex Head Bolt & 3/8" Lock-nut; 2 ea. 3/8" Washers
503117.1	Handrail Bracket to Post Kit (2-1/4" Finger Clearance)	1 ea. 1.9" O.D. Round Tube Spacer (2-1/4" Finger Clearance)
		2 ea. #14 x 1" Self Tap Screw
		SS Handrail Bracket
		1 ea. 3/8" x 4-1/2" Hex Head Bolt & 3/8" Lock-nut; 2 ea. 3/8" Washers
506510	Adjustable Splice Kit	2 ea. Adjustable from 39° to 180° Rail Splices
		8 ea. Rivets 18-8 SS
503123.1	90° Fixed Splice Kit	2 ea. Fixed 90° Rail Splices
		8 ea. Rivets 18-8 SS
506100	In-Line Splice Kit	2 ea. Splice 1.9" O.D. Round Tube
		8 ea. Rivets 18-8 SS
5001010	Rail	1.9." O.D. x 1.5" I.D. x 20' Long Yellow Round Tube
792614	Adjustable Rail Splice	1 ea. Adjustable from 39° to 180°
7926130	90° Rail Splice	1 ea. Fixed 90° Handrail Connector
509105	In-Line Rail Splice	In-Line Splice Round 10"
7926150	End Cap	Round Guardrail End Cap
794509	Handrail Bracket	316 SS Handrail Bracket for 1.9" O.D. Post
5083310	Spacer (1-1/2" F.C.)	1 ea. 1.9" O.D. HR Bracket Spacer (1-1/2" Finger Clearance)
5083320	Spacer (2-1/4" F.C.)	1 ea. 1.9" O.D. HR Bracket Spacer (2-1/4" Finger Clearance)
7926120	Saddle Connector	Saddle Connector for Round Guardrail
5082310	Open Saddle	Open Saddle for Round Guardrail
729610	Riv. Nut Install Tool	Rivet Nut Installation Tool
*Kickplate Assembly PN's are the UV coated VEFR counterparts to the PN's used for the square tube system.		
Bonding material should be ordered with each shipment of railing material.		
Order 1 kit (# 549100) for every 15 posts		
SI Conversions: inch = 25.4 mm 1 foot = .305 m 1 mm = .0394 inches 1 meter = 3.28 feet		

Modular Dynarail® Handrail Systems

For those projects that require a handrail (or grab rail) system to meet code requirements, Fibergrate's Dynarail Handrail system can be used with both Dynarail and DynaRound guardrail systems. Please see below for details and part numbers. If you require further assistance, call us or visit our website.



PART#	DESCRIPTION
162728	Rail used as Handrail 1-1/2" x 1/4" x 20' Long Yellow Round Tube
792650	Fixed 90° Handrail Connector
792640	Adjustable Handrail Connector 1 ea. Adjustable from 39° to 180°
522090	Handrail Splice - 1" ø FRP Round Rod
792660	Handrail End Cap
794510	SS Handrail Bracket (1-1/2" Finger Clearance)
794511	SS Handrail Bracket (2-1/4" Finger Clearance)
794515	SS Backer Plate
756670	1 ea. #10 x 1" Hex Head Self Tap Screw
Bonding material (1 Kit - PN#549100) should be ordered with each shipment of handrail material.	
SI Conversions: inch = 25.4 mm 1 foot = .305 m 1 mm = .0394 inches 1 meter = 3.28 feet	

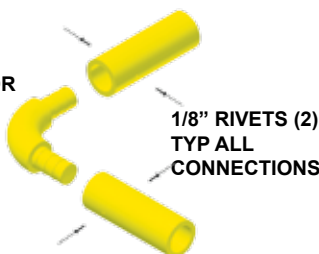
FIXED 90° HANDRAIL CONNECTOR
PN#792650



ADJUSTABLE HANDRAIL CONNECTOR
PN#792640

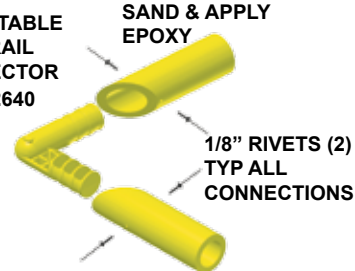


FIXED HANDRAIL CONNECTOR
PN#792650



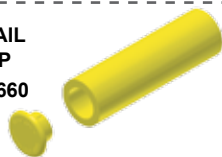
ROUND TUBE USED AS HANDRAIL

ADJUSTABLE HANDRAIL CONNECTOR
PN#792640

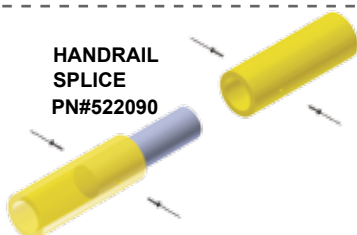


ROUND TUBE USED AS HANDRAIL

HANDRAIL END CAP
PN#792660

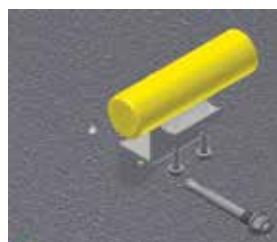


HANDRAIL SPLICE
PN#522090

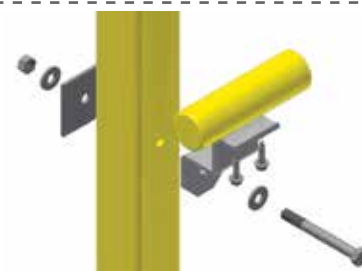


PN#794510 (FOR 1-1/2" FINGER CLEARANCE)
PN#794511 (FOR 2-1/4" FINGER CLEARANCE)
SELF TAPPING SCREWS (PN#756670) ARE REQUIRED TO ATTACH SS BRACKET TO ROUND HANDRAIL TUBE

For DynaRound - see pg. 11



FOR ATTACHMENT TO A CONCRETE WALL:
PN#794510 AND PN#794511 REQUIRE 3/8" DIA. CONCRETE ANCHOR



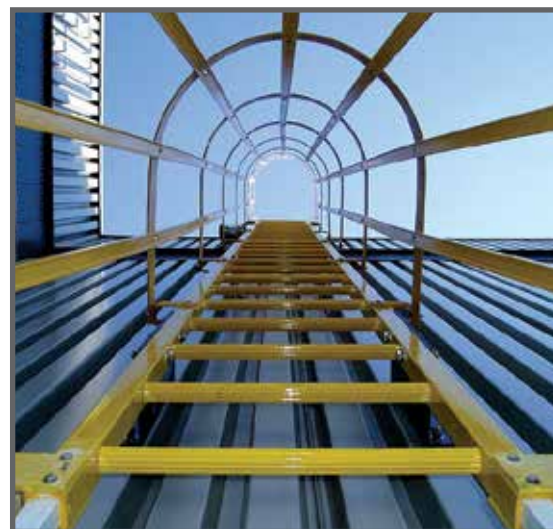
FOR ATTACHMENT TO AN FRP POST:
PN#794510 & PN#794511 REQUIRE 3/8" DIA. HEX HEAD BOLT & SS BACKER PLATE (PN#794515) ON OPPOSITE SIDE OF POST TO PREVENT POST FROM BEING CRUSHED BY BOLT

Dynarail FRP Safety Ladders

The innovative Dynarail® fiberglass reinforced plastic (FRP) safety ladder and cage system meets or exceeds OSHA requirements. Dynarail cage components are shipped in compact kit form - not large, bulky units prone to damage. The safety cage is ready for field assembly with predrilled hoops for fast and easy attachment to the ladder and vertical safety bars.

Ladders are stocked in standard heights of 8', 10', 12', 14', 16', 18', 20' and 24' and are available in taller heights using splice kits. Ladders may be ordered with or without safety cage kits.

Safety features are built-in from the ground up. Special clip angles have been developed to securely anchor the ladder. Intermediate stand-off brackets laterally stabilize the ladder to the supporting structure on 6' centers. Ladder rungs include heavily serrated flutes for slip resistant footholds.



Technical Data (Except where noted, all materials are yellow vinyl ester, fire retardant - VEFR)

LADDER:

Maximum length without splice	24'-0"	Outside Diameter of rung	1-1/4"
Maximum ladder length with cage <i>(30' to step off plus 3'-6" extension)</i>	33'-6"	Inside Diameter of rung	7/8"
Clear inside width (inside rail to rail)	18"	Rail - outside width	1-3/4"
Outside width (outside rail to rail)	21-1/2"	Rail - wall thickness	1/4"
Rung Spacing (center to center)	12"	Weight per foot (approximately)	2.7 lbs.

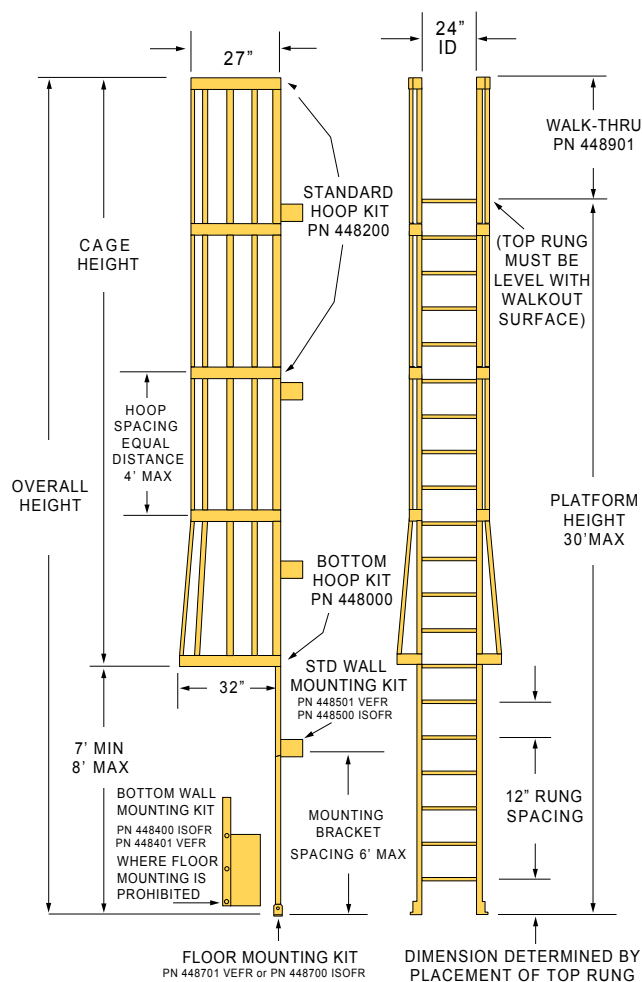
CAGE:

Product	Description
Standard Hoop Kit (PN 448200)	27" from center line of ladder rung to inside of hoop 3" wide x 1/4" thick hand layout Predrilled holes <i>(with necessary bolt assemblies)</i>
Bottom Hoop Kit (PN 448000)	31" from center line of ladder rung to inside of hoop 3" wide x 1/4" thick hand layout Predrilled holes <i>(with necessary bolt assemblies)</i>
Hoop Brackets (Included with hoop kits)	1/4" thick, "U" shaped hand layout Predrilled holes <i>(with necessary bolt assemblies)</i>
Vertical I-Bars (PN 446211 - 10 ft; PN 446210 - 20 ft)	I-Bar, 1-1/2" deep x 5/8" flange x 1/8" thick
Bottom Wall Mount Bracket Kit* (PN 448400 ISOFR Dk Gray, PN 448401 VEFR Beige) <i>Required when ladder cannot be floor mounted</i>	2-3/16" x 8" x 3/8" angle, 18" long Two per set <i>(with necessary bolt assemblies)</i>
Wall Mount Bracket Kit* (PN 448500 ISOFR Dk Gray, PN 448501 VEFR Beige)	2-3/16" x 8" x 3/8" angle, 6" long 7" from wall to center of rung Two per set <i>(with necessary bolt assemblies)</i>
Floor Mount Clip Kit* (PN 448700 ISOFR Dk Gray, PN 448701 VEFR Beige)	4" x 4" x 3/8" angle, 2-3/4" long Two per set <i>(with necessary bolt assemblies)</i>

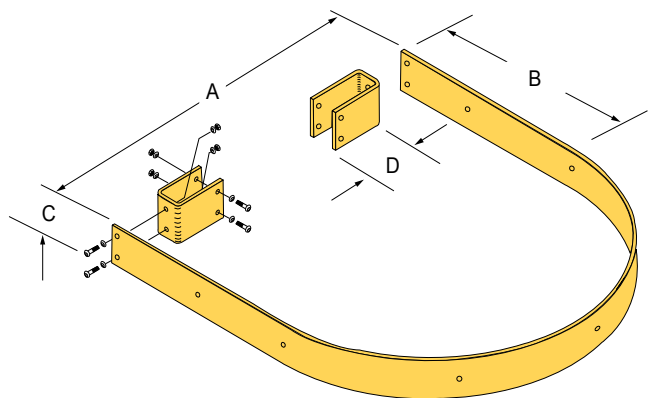
***NOTE:** Wall mount brackets and floor mount clips are predrilled with 9/16" diameter holes for 1/2" diameter anchor bolts only. **Anchor bolts not included.**

Dynarail® FRP Safety Ladders

Dynarail® Ladder System Data



Dynarail® Hoop Data



Hoop Kit	PART NUMBER	A	B	C	D
Bottom	448000	35"	16"	3"	8.5"
Standard	448200	27"	16"	3"	4.5"

Component Selection Guide

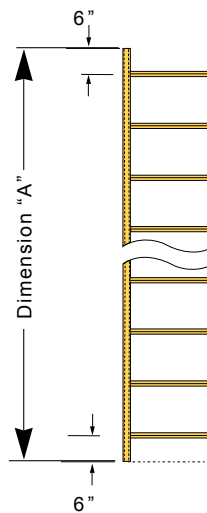
Cage Assembly Components

Cage Height	Hoops Required		Vertical I-Bars Required	
	Standard Hoop Kit PN 448200	Bottom Hoop Kit PN 448000	10' Vertical I-Bar PN 446211	20' Vertical I-Bar PN 446210
3' 0"	1	1	3	0
3' 6" to 4' 0"	1	1	1	1
4' 7-1/2"	1	1	4	0
4' 7-1/2" to 5' 3"	2	1	4	0
5' 6"	2	1	4	0
6' 0" to 6' 6"	2	1	0	2
7' 0"	2	1	2	2
7' 6"	2	1	0	3
8' 0" to 8' 10-1/4"	2	1	7	0
8' 10-1/4" to 10' 0"	3	1	7	0
10' 6" to 13' 1"	3	1	0	5
13' 1"	4	1	0	5
13' 6" to 14'	4	1	3	4
14' 6" to 17' 3-3/4"	4	1	0	7
17' 3-3/4" to 20' 0"	5	1	0	7
20' 0"	5	1	0	7
20' 6" to 21' 7/12"	5	1	1	8
21' 7/12" to 22' 6"	6	1	1	8
23' 0" to 24' 0"	6	1	4	7
24' 6" to 25' 10-1/2"	6	1	1	10
25' 10-1/2" to 26' 6"	7	1	1	10

Ladder Mounting Accessories

Ladder Height	Floor Mount Kits Required PN 448700 ISOFR PN 448701 VEFR	Bottom Wall Mount Kits PN 448400 ISOFR PN 448401 VEFR	Wall Mount Kits Required PN 448500 ISOFR PN 448501 VEFR
0" to 6"	1	1	1
6' 6" to 12' 0"	1	1	2
12' 6" to 18' 0"	1	1	3
18' 6" to 24' 0"	1	1	4
24' 6" to 30' 0"	1	1	5
30' 6" to 36' 0"	1	1	6

Ladder and Accessories



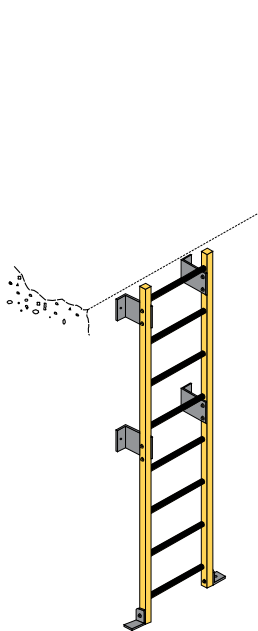
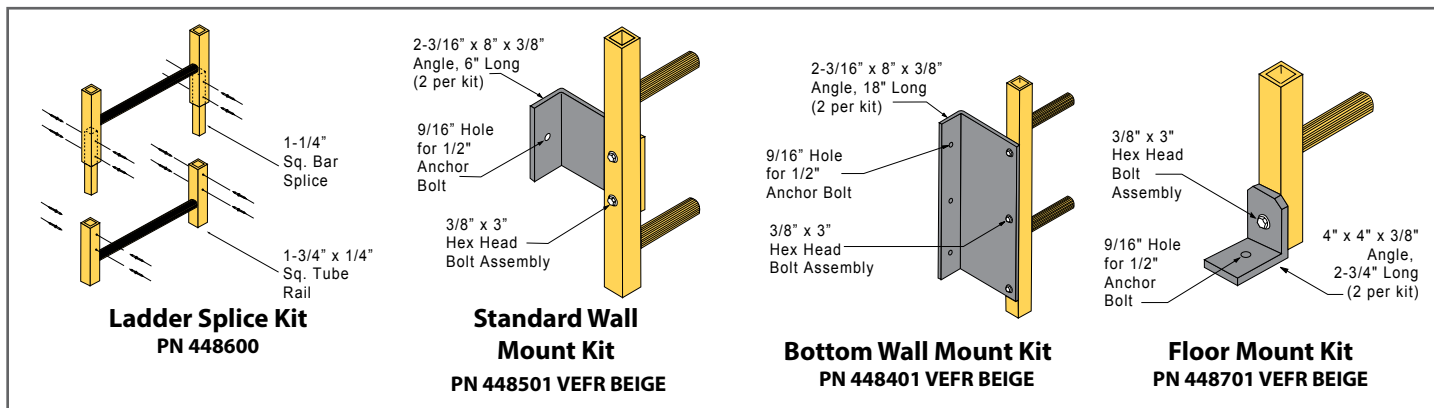
Ladders ("A" dimension = stock length)	
Length*	Part Number
8'	444508
10'	444510
12'	444512
14'	444514
16'	444516
18'	444518
20'	444520
24'	444524
Accessories	
Description	Part Number
Ladder Rail Splice Kit	448600
24" Wide Walk-thru Kit	448901

*Field Cut to size

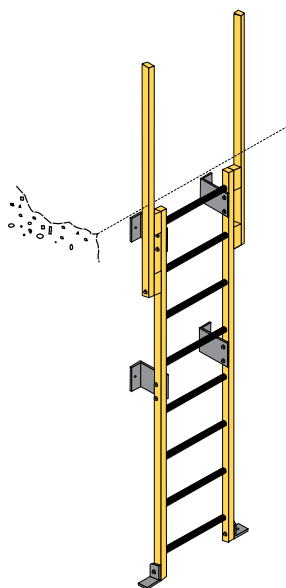
Note: Top rung step-off must be even with upper walking surface

Dynarail® FRP Safety Ladders

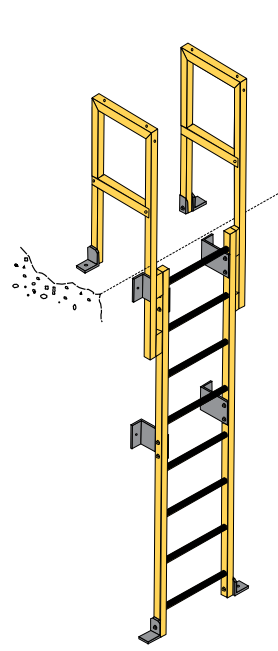
Assembly & Mounting Details



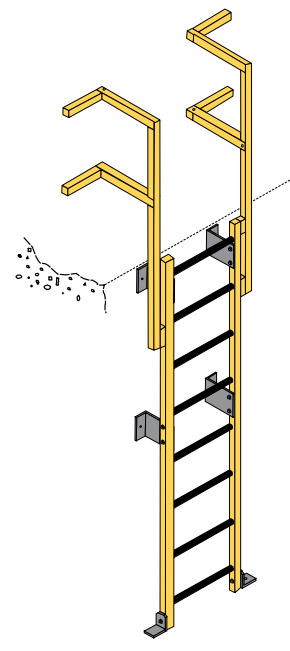
Ladder



Ladder with 24" Walk-thru



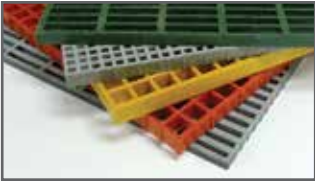
Ladder with Walk-thru and Rail Connections to Floor



Ladder with Walk-thru and Rail Connections to Rail



Fibergrate Products & Services



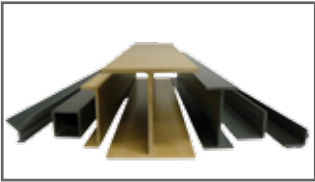
Fibergrate® Molded Grating

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 multiple resins and more than twenty grating configurations available in many panel sizes and surfaces.



Safe-T-Span® Pultruded Industrial & Pedestrian Gratings

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



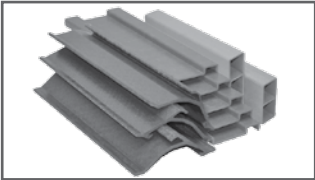
Dynaform® Structural Shapes

Fibergrate offers a wide range of standard Dynaform® pultruded structural profiles for industrial and commercial use, including I-beams, wide flange beams, round and square tubes, bars, rods, channels, leg angles and plate.



Dynarail® & DynaRound™ Guardrail, Handrail & Ladder

Easily assembled from durable components or engineered and prefabricated to your specifications, Dynarail® square tube and DynaRound™ round tube railing systems and Dynarail safety ladder systems meet or exceed OSHA and strict building code requirements for safety and design.



Custom Composite Solutions

Combining Fibergrate's design, manufacturing and fabrication services allows Fibergrate to offer custom composite solutions to meet our client's specific requirements. Either through unique pultruded profiles or custom open molding, Fibergrate can help bring your vision to reality.



Design & Fabrication Services

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



Worldwide Sales & Distribution Network

Whether a customer requires a platform in a mine in South Africa to grating on an oil rig in the North Sea, or walkways in a Wisconsin cheese plant to railings at a water treatment facility in Brazil; Fibergrate has sales and service locations throughout the world to meet the needs and exceed the expectations of any customer.

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