

# *Water & Wastewater Market*

## *Fiberglass Reinforced Plastic (FRP) Products*

*30+ Years in WTP/WWTP*

*Significant Features & Benefits*

*Flooring & Stair Solutions*

*Ladder & Handrail Solutions*

*Platform Systems*

*Custom Designs & Fabrications*

*Extensive Industry Participation*

*Industry Proven Success*

**Fibergrate**  
Composite Structures

*High Performance Composite Solutions*

# Fibergrate in Water & Wastewater



Fibergrate Composite Structures Inc. is a global manufacturer of fiberglass reinforced plastic (FRP) products for industrial and recreational use. Fibergrate sets the standard for high performance composite products with such proven brands as Fibergrate® and Chemgrate® molded grating, Safe-T-Span® pultruded grating, Rigidex® Moltruded® grating, Dynarail® handrail and ladder systems, and Dynaform® structural shapes. Fibergrate also offers turnkey design, manufacturing, fabrication and installation services.

Within the water and wastewater market; corrosion resistance, safety and maintenance requirements are critical considerations. For nearly four decades, Fibergrate has met the challenge of the harsh environmental conditions found in the water and wastewater market with its wide selection

of FRP products. Key product features such as corrosion resistance, slip resistance, UV resistance, flame retardancy, nonconductivity, impact absorption and low maintenance requirements make these products ideal for use in all types of water/wastewater facilities.

Fibergrate's FRP products offer superior resistance to corrosive water, acids, alkalis and other chemical compounds. The result is minimal maintenance requirements, a long service life and a lower life cycle cost than ferrous metals and aluminum. Today, Fibergrate products can be found in all phases of potable water and wastewater treatment facilities including filtration, near water and chemical storage facilities and around collection and treatment areas.

## Applications

- *Filter Media Support Grids & Structures (Bio-filter, Trickling Filters, etc.)*
- *Tank & Equipment Access Platforms*
- *Elevated Platforms & Walkways*
- *Trench & Vault Covers (Up to H-20 Truck Traffic)*
- *Handrails at Basins, Clarifiers, etc.*
- *Ladders & Safety Cages - Inside & Outside of Tanks & Pits*
- *Air Intake Access & Safety*
- *Ships Ladders*



# Features and Benefits of Fibergrate

- **Corrosion Resistance** - more than 15 premium grade resin systems available to meet your needs. This unmatched protection is ensured by the manufacturing process in which fiberglass is thoroughly wetted providing continued structural integrity in tough environments
- **Slip Resistance** - a meniscus top or permanent grit on Fibergrate's flooring products provides a safe, slip-resistant walking surface
- **Low Maintenance** - corrosion resistant and requires no scraping, sandblasting or repainting
- **Fire Retardant** - most of Fibergrate's products are engineered to have a flame spread rating of 25 or less per ASTM E-84 and meet the self-extinguishing requirements of ASTM D-635.
- **UV Resistant** - Fibergrate's FRP gratings are formulated for maximum UV resistance and a special coating is available for increased UV resistance on handrail and ladder systems



- **High Strength-to-Weight Ratio** - one-third the weight of steel grating allowing easy installation with no heavy equipment and less manpower both at installation and effortless removal for access below floor level.
- **Electrically and Thermally Nonconductive** - all-FRP construction provides additional worker safety (*Conductive and electrostatic dissipative coatings are available when required - contact Fibergrate for more information*)
- **Impact Resistance** - can withstand major impacts with negligible damage. Gratings are available to satisfy even the most stringent impact requirements.
- **Easily Fabricated** - can be cut using circular or reciprocating saws with abrasive blades
- **NSF Available** - ladder components are stocked in NSF resin. Custom designs (screens, baffles, etc.) are available in NSF on special order



## FRP vs. Steel

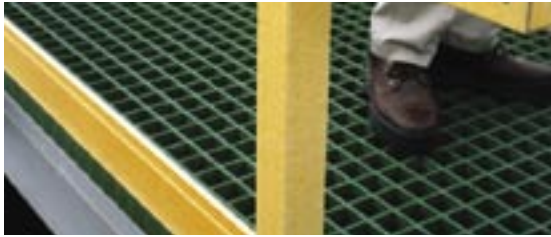
$$\text{VALUE} = \frac{\text{PRICE}}{\text{SERVICE LIFE}}$$

When comparing the price of Fibergrate fiberglass reinforced plastic (FRP) products to metallic products, consider:

Cost Factor	Traditional Metallic Materials	THE FIBERGRATE® ADVANTAGE
<b>Safety Cost</b>	Slips and falls are the second leading cause of industrial accidents and one of the leading causes of deaths. Each lost workday can cost \$50,000 to \$100,000.	Fibergrate's slip-resistant surfaces dramatically reduce accidental slips making it the most cost-effective solution for minimizing worker accidents and lost workdays.
<b>Initial Installation Cost</b>	Up front, metallic components appear to be the most economical based on material cost alone. However, metallic materials require heavy lifting equipment, added labor for cutting, welding and painting and grating must be "edge-banded".	Although initial material investment may appear higher, don't be fooled! FRP products require no heavy lifting equipment, minimal labor, is easily fabricated with hand tools, does not need painting and grating requires no edge-banding
<b>Maintenance and Replacement Cost</b>	In highly corrosive WTP/WWTP installations, metallic products require intensive maintenance and often deteriorate in a few years or less requiring numerous replacements within the facility life.	Fibergrate FRP products will last much longer and require little maintenance. Fibergrate systems pay for themselves after one maintenance cycle. Many Fibergrate WTP/WWTP installations have been in service for more than thirty years.

# FRP Solutions for Water/Wastewater

## FRP Products



### Fibergrate® and Chemgrate® Molded Grating

- Maximum Corrosion Resistance
- Bidirectional Strength (Facilitates Field Cuts and Penetrations)
- Maximum Impact Resistance
- Exceptional Slip Resistance (with meniscus or grit top)
- More than 20 Mesh and Panel Size Configurations



### Safe-T-Span® Pultruded Grating

- Superior Corrosion Resistance Compared to Metal Gratings
- High Unidirectional Strength and Stiffness for Longer Spans
- Exceptional Slip Resistance (with grit top)
- Available in 3 Resin Systems
- Can be Manufactured to Specific Widths and Lengths for Optimal Design Efficiency for Large Projects

### Fiberplate® and Chemplate® Gritted Floor Plate



- Molded in Thicknesses from 1/8" - 3/4"
- Maximum Corrosion Resistance
- Installs On Traditional Surfaces for Slip Resistance
- Excellent for Odor Control

- Non-gritted Plates Available for Non-walking Applications

### Rigidex® Moltruded® Grating



- Unique Molded Unidirectional Grating
- Combines Maximum Corrosion Resistance With Longer Span Capabilities
- Available in 1-1/2" and 2" Depths

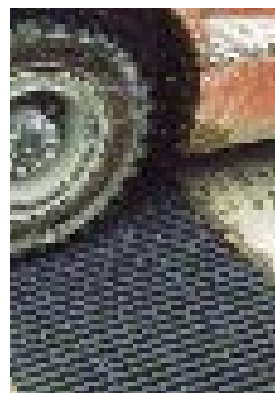
- Rigidex I (Walkway Applications) Competitively Priced Compared to Aluminum
- Rigidex II (Industrial Applications) Passes 15 mm ball test and is ADA Compliant

### High Load Capacity (HLC) Grating



#### Molded

- Maximum Corrosion Resistance
- Unique One-piece Construction Withstands Vehicular Turning Loads
- Available in 1-1/2" and 2" Depths
- Available Covered for Odor Control



#### Pultruded

- Excellent Corrosion Resistance to Metal Gratings
- High Unidirectional Strength
- Engineered to Withstand Forklift and Tractor Trailer Loads
- Available in 1-1/2", 2", 2-1/2" and 3" Depths

# FRP Solutions for Water/Wastewater

## Dynarail® Ladder & Handrail Systems



- Superior Corrosion Resistance to Metal Handrail and Ladders
- Thermally Nonconductive
- Shipped Ready-to-Install
- Can be Coated for Maximum UV Resistance

## Dynaform® Structural Shapes



- Superior Corrosion Resistance to Metal Shapes
- Long Lasting, Attractive Appearance
- Can be Coated for Maximum UV Resistance
- Thermally and Electrically Nonconductive

## Stair Solutions



### Stair Treads

- Available in Molded or Pultruded Configuration
- Available in Open Mesh or Solid Top



### Stair Tread Covers

- Provides Slip Resistance to Existing Stair Treads
- Installs Over Existing Treads
- Available With Phosphorescent Nosing (Emits Light When Light Source Is Removed)



### Stairway Systems

- All-FRP Construction
- One-third the Weight of Steel
- Engineered to Meet Your Specific Requirements

## Platform Solutions



### Modular Platform Systems - RapiDeck™

- Standard Sizes
- Adjustable Support Pedestal Construction
- Quick and Easy to Install
- No Welding Needed
- Can Support up to 400 lb/ft<sup>2</sup>
- Effortlessly Make Field Cuts and Penetrations
- Available with Dynarail® Handrail System



### Custom Platform Systems

- All-FRP Structure
- Designed, Engineered and Fabricated In-House to Meet Your Specific Needs
- Shipped Ready-to-Assemble
- Effortlessly Make Field Cuts and Penetrations (with Molded Grating)
- Designed with Dynarail® Handrail Systems and Dynaform® Structural Shapes

# Memberships and Applications

## Industry Memberships



American Water Works Association



National Rural Water Association



Water Environment Federation



Cooling Technology Institute

## Applications



### Walkways & Covers

FRP gratings, in a WTP/WWTP environment, offer the most logical solution for walkways and covers. FRP gratings offer superior corrosion resistance to metals and at one-third the weight of steel, allow easy access by one worker to trenches below or valves in vaults, all without costly lifting equipment. Covered gratings are ideal for odor control, especially in pit or trenches where corrosive gases and vapors can accumulate.



### Clarifiers and Basins

Clarifiers and basins often require a great deal of handrail for personnel safety. Metallic handrail systems are more than three times the weight of fiberglass systems and require costly lifting equipment and much longer installation periods. FRP handrails will, and have, serviced decades in a WTP/WWTP environment. Additionally, FRP walkways, access ladders and baffles are quite common.



### Filters - Trickling, Roughing and Biofilters

The constant torrent of water through filters demands the corrosion-resistant, low-maintenance benefits of FRP materials. Whether you are considering a walking surface on filter media to minimize worker damage and provide safe footing



or designing a structure and support grid below the media, FRP will offer the most efficient and economic solution. All FRP structural systems can be designed to meet your specific requirements.



# Applications



## Tank, Valve & Equipment Access Systems

Worker access for monitoring or other maintenance tasks can be provided by a number of systems ranging from simple ladders or steps with landings to complex stair towers. Grating can be easily removed for access to valves, pumps and pipes as well as for maintenance purposes. The slip-resistance surfaces of the grating, stair treads and ladders increases worker safety during usage.



## Platform Applications

Numerous opportunities exist for FRP platforms in WTP/WWTP facilities. Mixer platforms, tank platforms, complex FRP structural systems for long bridges, catwalks over equipment, pipe bridges and crossover platforms are but a few of the many FRP platforms that have been developed over the last 30+ years.



## Influent/Effluent Channels

Grating walkway systems, access ladders and cages, safety handrails, trash screens and baffle walls of all-FRP construction have proven

themselves in numerous WWTP applications for many years. Corrosion resistance is key, however for trash screens, the light weight of FRP eases the drudgery of removal for cleaning.

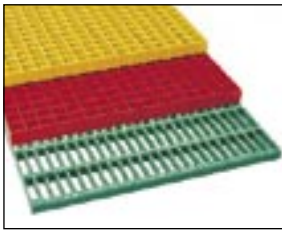


## Custom Structures and Systems

Fibergrate's engineering team can develop very specialized structures for your unique applications. Previous successes have included floating pipe bridges, stormwater runoff swirl concentrators, suspended catwalks, custom filters and much more.



# 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.

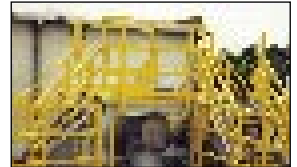


## Safe-T-Span® Pultruded Industrial and Pedestrian Gratings

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.



## 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.