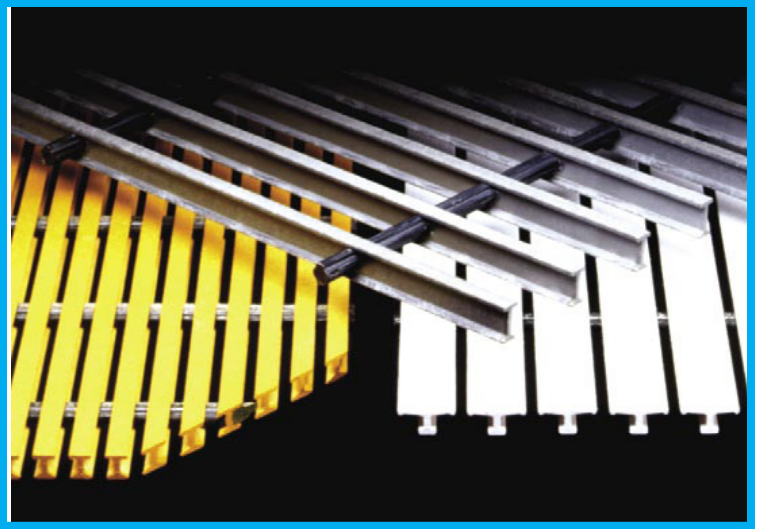


# Pultruded Grating

MFG CONSTRUCTION &  
WATER PRODUCTS



# HIGH STRENGTH PULTRUDED FIBER GLASS GRATING



Top: DURADEK® and DURAGRID® fiber glass grating provide safe, corrosion resistant walkways and work platforms in a broad range of markets and industries.



Manufactured with unique cross car construction, DURADEK® and DURAGRID® grating can be cut to any size like a solid sheet.

**DURADEK®** and **DURAGRID®** are high strength pultruded bar type gratings that can be designed and used like traditional metal grates but have the inherent benefits of fiberglass. These problem solving products are ideal replacements for steel or aluminum gratings in corrosive environments or anywhere frequent grating and walkway replacements costs are unacceptable.

**DURADEK®** is available with individual bearing bars in either 1" or 1 1/2 " I-shapes or a T-shape. DURADEK® is a flame retardant product utilizing a polyester or vinyl ester resin. The bearing bars are assembled into 12 panel sizes: 3-, 4- and 5- foot widths in each of 8-, 10-, 12- and 20- foot lengths. Standard panels come with cross-rod spacing's of 6" or optional 12" on center.

**DURAGRID®** custom grid or grating systems are designed to accommodate specific applications that cannot effectively be met by a standard fiberglass grating. DURAGRID® offers the customer options such as selection of open space, bar shape, cross-rod placement, custom fabrication, custom resin or color.

## Why use DURADEK® or DURAGRID® Grating?

DURADEK® and DURAGRID® are lightweight, which saves on freight and makes installation easier. The unique cross-bar construction of DURADEK® and DURAGRID® allows the grating panels to be easily cut and modified to fit almost any plant requirement. A full listing of features are shown below.

### Features:

- Corrosion resistant
- Structural strong
- High impact and fatigue strength
- Lightweight
- Easy to fabricate and install
- Low maintenance
- Low conductivity
- Resistant to chipping and cracking
- Aesthetically pleasing appearance
- Skid resistant
- Rigid
- Low thermal conductivity
- Non-Sparking

# Materials of Construction

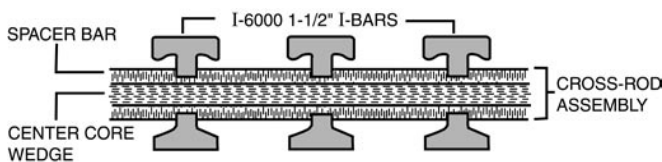
DURADEK® AND DURAGRID® fiberglass gratings are a composite of fiberglass reinforcements (fibers and mat) and thermosetting resin system, produced by the pultrusion process. The pultrusion manufacturing process produces many of the outstanding characteristics of the product.



The bearing bars use both longitudinal (glass roving) and multidirectional (glass mat) reinforcements as well as a synthetic surfacing veil to provide unequaled strength and corrosion resistance. The densely packed core of continuous glass roving's gives the bar strength and stiffness in the longitudinal direction while the continuous glass mat provides strength in the traverse direction and prevents chipping, cracking and lineal fracturing. The synthetic surfacing veil provides 100% pure resin surface for added corrosion resistance and UV protection.

## Three-Piece Cross-Rod Assembly

The 3-piece cross-rod assembly used in DURADECK® and DURAGRID® grating forms a strong, unified panel that can be cut fabricated like a solid sheet.



This unique system consists of two continuous, pultruded spacer bars and a center core wedge. The spacers are notched at each bearing bar so that the bars are both mechanically locked and chemically bonded to the web of each bearing bar. This separates and affixes bearing bars firmly in position and distributes concentrated loads to adjacent bars. The resulting panel can be easily fabricated with standard carpenters' tools with abrasive cutting edges.

## Bar Profiles and Grating Series

A wide variety of bearing bar shapes along with various bearing bar and cross-rod spacing are available on the design requirements.

The traditional "I" bar shape provides maximum flexibility in design. It is available in 1", 1 ¼", and 1 ½" depths. The "T" bar shape provides a more solid walking surface and prevents catching high heels and other objects between the bars. It is available in 1", 1 ½" and 2" depths. The Economy series offer a lighter weigh bearing bar.

DURAGRID® Heavy Duty (HD) solid bar grating has been designed to take heavy wheel traffic such as forklifts, tow motors and truck traffic. Because of the variety of wheel types and loading, please contact MFG to determine the series of heavy duty grating to use. It is available in 1", 1 ¼", 1 ½", 1 ¾", 2", 2 ¼", and 2 ½" depths.

## Panel Sizes and Shape

Panels can be made to exact sizes to eliminate waste and fabrication costs in the field. The maximum panel weight is 500lbs. and the maximum panel size is 60" x 240".

## UV Coatings

Bearing bars can be UV coated for added protection and color stability for outdoor applications.

## Color

The two standard colors are gray and yellow.

## Resin Selection

The standard polyester resin used in DURADECK® is a fire retardant and meets the requirements for a Class 1 flame rating of 25 for less per ASTM E-84 and meets the self extinguishing requirements of ASTM D-635. The resin also contains a UV inhibitor.

DURAGRID® offers a wide selection of resin options including polyester, vinyl ester, phenolic, modar, etc. Other choices include fire retardant, UV inhibitors, colors and specialized additives.

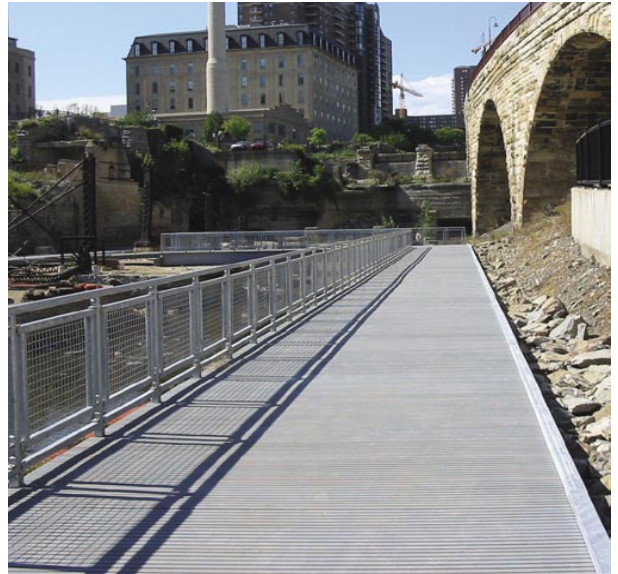
## Surface Texture

Grids can be ordered with or without an anti-skid surface. A variety of grit material and textures can be ordered.

# Applications

DURADEK® and DURAGRID® grating systems are designed to accommodate a wide variety of applications, such as:

- General Industry
- Marine/Offshore
- Mining/Processing
- Plating Operations
- Transportation
- Chemical Plants
- Electrical
- Power Plants
- Consumer/Recreation
- Cellular Communications
- Food and Beverage Operations
- Water/Wastewater Treatment
- Agriculture
- Pulp and Paper Plants
- Railroad-AAR Approval
- Fire Equipment



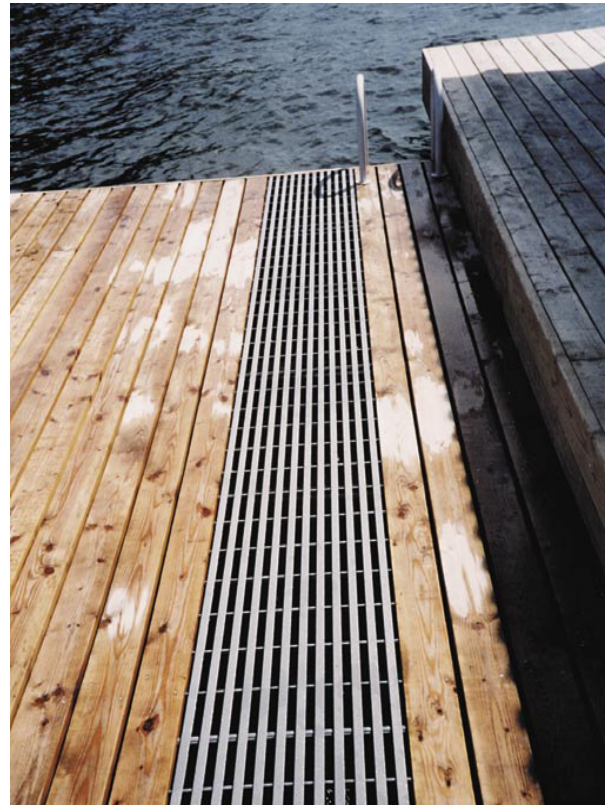
Mill Ruins in downtown Minneapolis, Minnesota utilized DURAGRID® T-18001 for new pedestrian walkways in the beautiful historic district.



Eight-thousand square feet of DURAGRID® I-4000 1" pultruded grating replaced steel side-walks on this bridge in West Virginia.



Manhole covers on Boston's historic Longfellow Bridge use DURAGRID® T-5800 grating bonded to SUFPLATE® gritted plate for a strong solid walking surface.

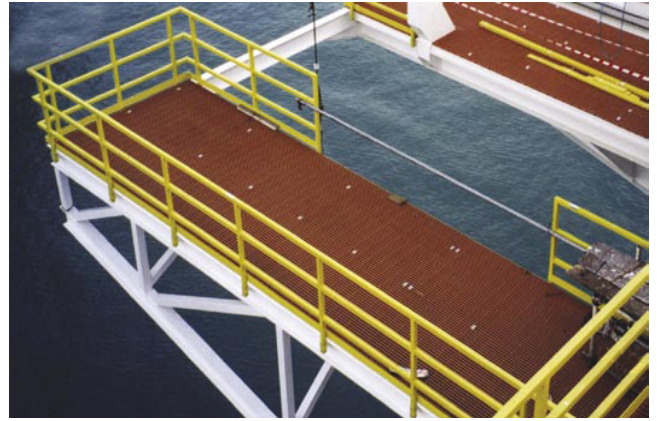


DURAGRID® Economy 5000 provides a strong economical grating for docks while providing the 50% light penetration required to allow for vegetation growth in shallow water.

# Applications



Chicago Transit maintenance walkways alongside elevated train tracks constitute one of the largest fiber glass grating installations in history. The project used DURAGRID® T 5000 2" with a custom polyester resin.



DURAGRID® Phenolic grating is used for fire integrity, weight savings and low maintenance and is U.S. Coast Guard approved. Compared to standard steel grating, DURAGRID® Phenolic I-6000 1-1/2 "can carry 1.75 times the load of equivalent steel grating. Unlike metal gratings, DURAGRID® Phenolic has memory-returning to its original shape if design loads are exceeded.



DURAGRID® T-1700 pultruded grating was used to replace wood planks on a large walkway at Dinner Key Marina in Miami, Florida. The grating allows for easy accessibility to utilities below the walkway and will not rot like the previous wooden walkway.



Low maintenance fiberglass grating trouble free operations for the covers and walkways in the Lakewood, Colorado Wastewater Treatment Plant Headworks. DURADECK® I-6000 1-1/2" was used.

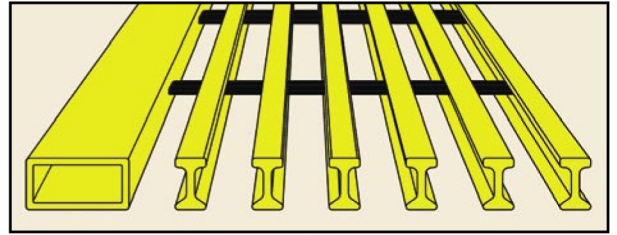


Cooper processing facilities such as the Ammonia Leach/Solvent Extraction Electrowinning plant for Minera Escondida Limitada in Chile found DURADECK® I-6000 1-1/2 to be the perfect solution.

# Accessories

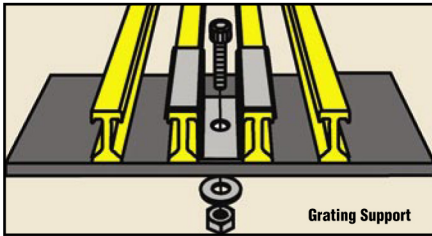
## Nosings for Stair Treads and Landings

Stair treads and landings are produced by attaching a 2" deep nosing to the leading edge. This gives added strength and rigidity to the area that takes the most impact and abuse. In addition, the nosing provides more surface area for skid resistance, wear and better visibility. Gray stair treads with yellow nosing are available at additional cost.



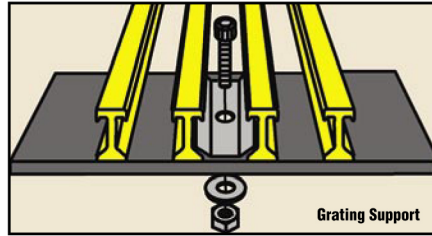
TREAD WIDTH & COLOR	STAIR TREAD SERIES	MAXIMUM SPAN FOR 300 LBS. AT MIDSPAN	
		1/8" OR LESS DEFLECTION	1/4" OR LESS DEFLECTION
11" Gray or Yellow	I-6000 1"	29"	37"
11" Gray or Yellow	I-6000 1-1/2"	40"	52"
12" Gray or Yellow	T-5000 2"	47"	59"

## Panel Hold Downs



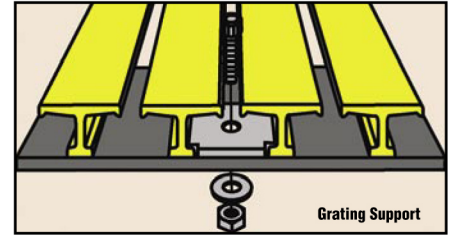
Weldable 316L stainless steel saddle clips are available for all grating series except T-1800 and T-3500.

*\*Bolts are priced separately from the saddle clips.*



Weldable 316L stainless steel insert clips are available for all grating series except T-1800 and T-3500.

*\*Bolts are priced separately from the hold-down.*

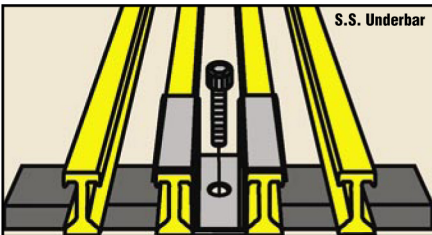


Weldable 316L stainless steel insert clips are available for series T-1800 and T-3500 only.

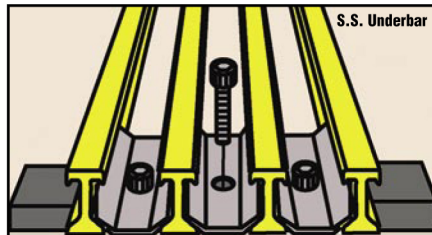
*\*Bolts are priced separately from the hold-down. (All bolts are 1/4-20 x 1-1/4", cap head, 316L stainless steel.)*

## Panel Connectors

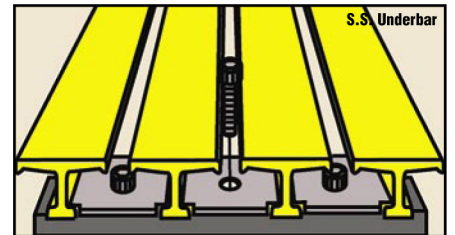
Panel Connectors are generally only used at midspan to assist in transferring load from section to section.



316L stainless steel saddle clips are available as panel connectors for "I" and "HD" bar grating and T-bar grating except T-1800 and T-3500.



Insert clip hold-downs are available for I-bar grating and T-bar grating except for T-1800 and T-3500.



Insert clip hold-downs are available for T-1800 and T-3500 grating.

*(All bolts are 1/4-20 x 1-1/4", cap head, 316L stainless steel.)*

## Curb Angle

Fiberglass Curb Angle provides a strong, firm base for bearing bars and is pultruded from the same material and in the same manner as other DURADEK® and DURAGRID® products. Corrosion resistant Fiberglass Curb Angles are available in four sizes in gray fire retardant vinyl ester.

