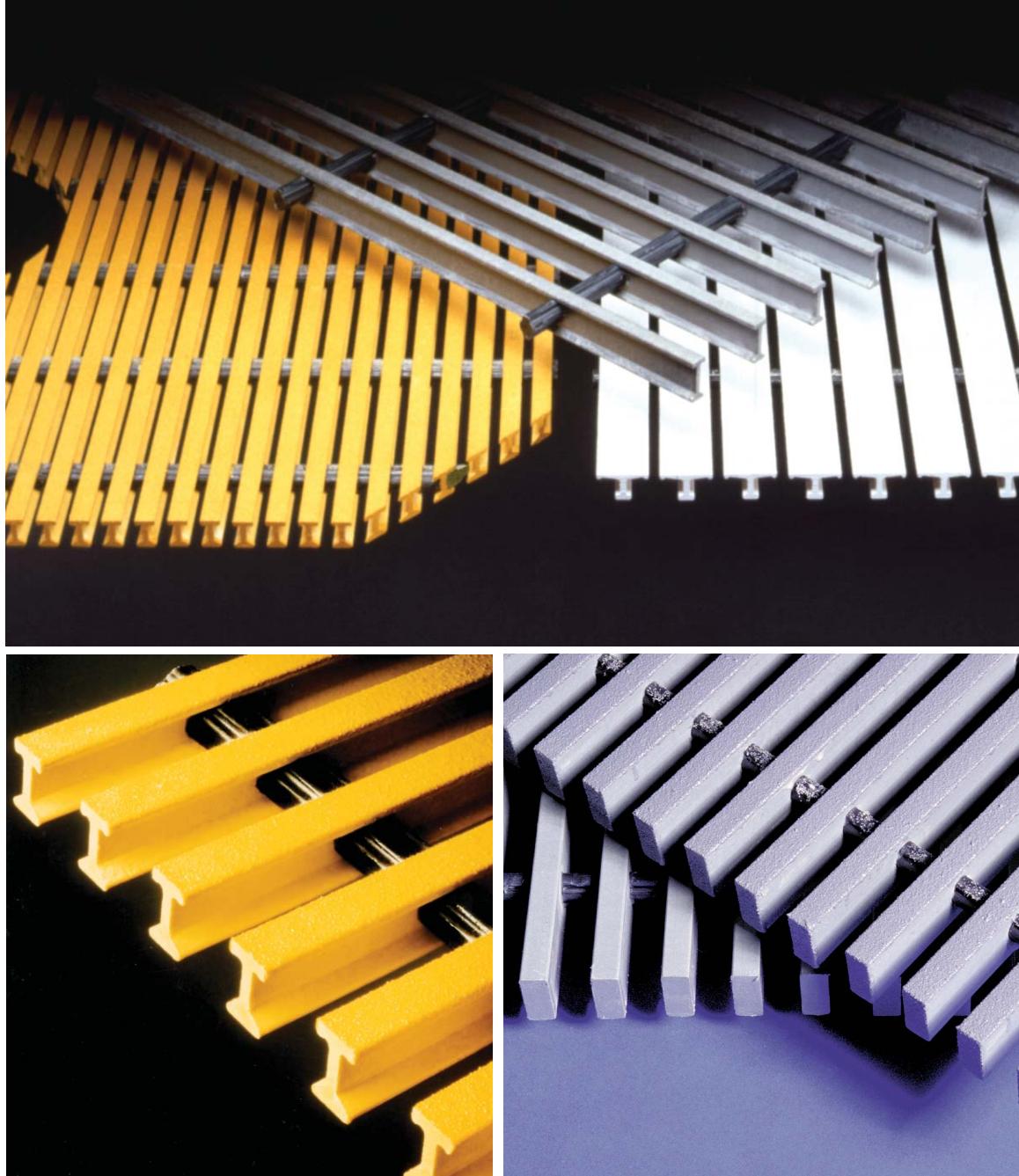


STRONGWELL

FIBERGLASS GRATING

DURA^{DEK}[®] and DURA^{GRID}[®] PULTRUDED GRATING



High Strength Pultruded Fiberglass Grating



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

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

What is DURADEK® and DURAGRID®?

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 replacement costs are unacceptable.

DURADEK® is a standard product stocked by distributors nationwide. It is available with individual bearing bars in either 1" or 1-1/2" "I" shapes or a 2" "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 spacings of 6" or optional 12" on center.

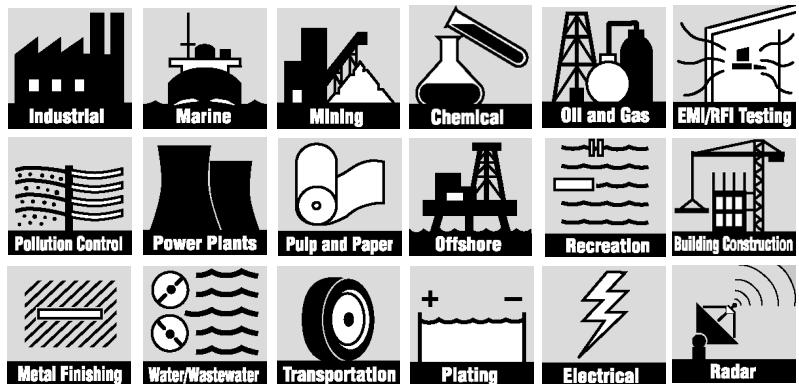
DURAGRID® custom grid or grating systems are designed to accommodate specific applications that cannot effectively be met by a standard fiberglass grating. DURAGRID® offers the customer options such as selection of open space, bar shape, cross-rod placement, custom fabrication, custom resin or color.

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
- Structurally 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

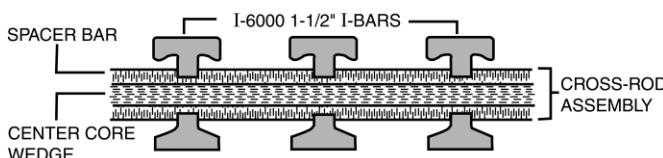
DURADEX® and DURAGRID® fiberglass gratings are a composite of fiberglass reinforcements (fibers and mat) and a thermosetting resin system, produced by the pultrusion process. The pultrusion manufacturing process produces many of the outstanding characteristics of the product.



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

Three-Piece Cross-Rod Assembly

The patented 3-piece cross-rod assembly used in DURADEX® and DURAGRID® grating forms a strong unified panel that can be cut and 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. Ask for the detailed *Grating Field Fabrication Guide* for further details.

Bar Profiles and Grating Series

A wide variety of bearing bar shapes along with various bearing bar and cross-rod spacings are available depending on the design requirements. Refer to the load/deflection tables for selection.

The traditional "I" bar shape provides maximum flexibility in design. It is available in 1", 1-1/4", and 1-1/2" 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", 1-1/2" and 2" depths. The Economy series offers a lighter weight bearing bar.

Strongwell's 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 Strongwell's engineering department to determine the series of heavy duty grating to use. It is available in 1", 1-1/4", 1-1/2", 1-3/4", 2", 2-1/4" and 2-1/2" 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 500 lbs. 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. Other colors can be quoted upon request. A small inventory is also maintained of 1" "I" and "T" bars in white non-fire retardant polyester resin.

Resin Selection

The standard polyester resin used in DURADEX® is fire retardant and meets the requirements for a Class 1 flame rating of 25 or 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 grit surface. A variety of grit material and textures can be ordered.

Applications

DURADEX® 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
- Agricultural
- Pulp and Paper Plants
- Railroad - AAR Approval
- Fire Equipment



DURAGRID® I-4000 1" and 1-1/2" panels in a special Desert Sand color provide catch pool and spillway covers at a water theme park in Florida.



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

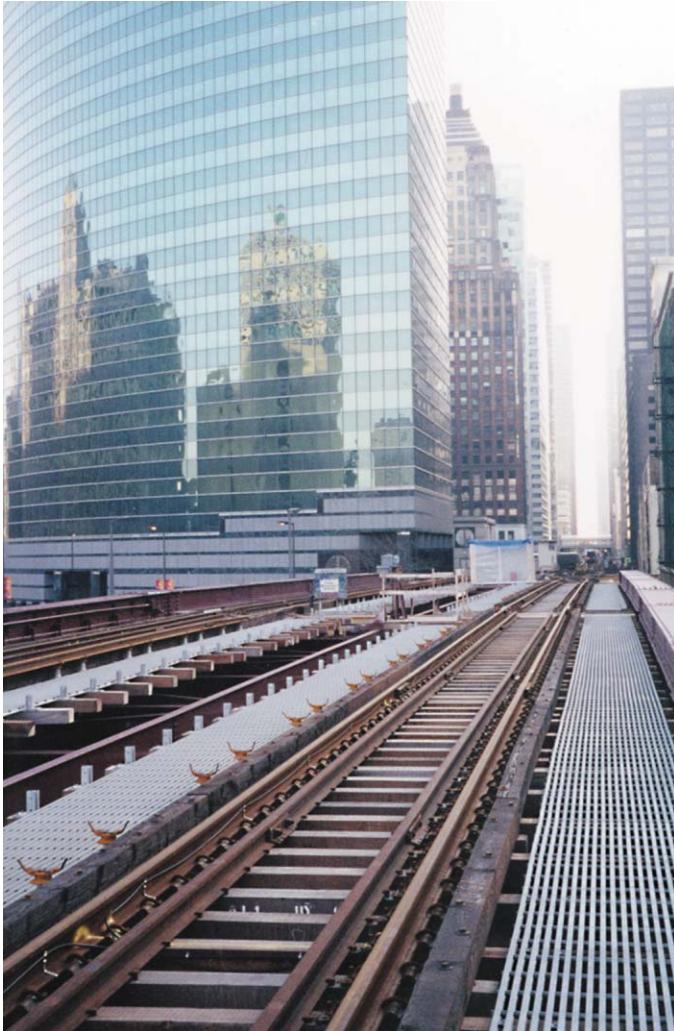


DURAGRID® I-7000 1-1/2" provided lightweight (70% open space) platforms for the Fedex 747 hanger at the Anchorage, Alaska Airport.



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 fiberglass grating installations in history. This project used DURAGRID® T-5000 2" with a custom polyester resin.



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

DURAGRID® Phenolic grating was used on Shell's Mars offshore platform for fire integrity, weight savings and low maintenance. DURAGRID® Phenolic is U.S. Coast Guard approved.



Swimming pool trough covers of white polyester DURAGRID® T-1800 1" grating have narrow spacings that allow water to flow through while still being safe to walk on with bare feet.

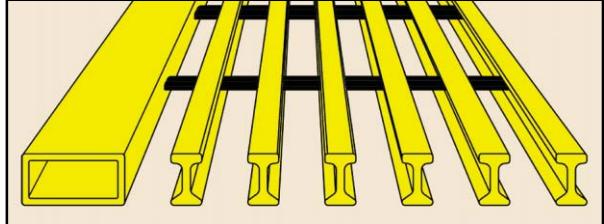


Low maintenance fiberglass grating provides trouble free operations for the covers and walkways in the Lakewood, Colorado Wastewater Treatment Plant Headworks. DURADEK® I-6000 1-1/2" was used.

Accessories

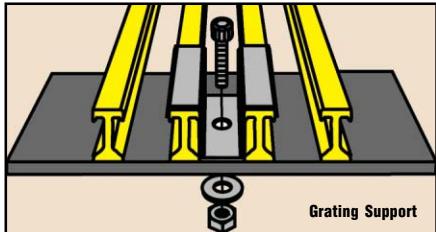
Nosings for Stair Treads and Landings

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.



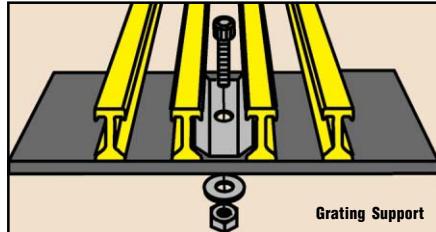
TREAD WIDTH & COLOR	STAIR TREAD SERIES	MAXIMUM SPAN FOR 300 LBS. AT MIDSPAN	
		1/8" OR LESS DEFLECTION	1/4" OR LESS DEFLECTION
11" Gray or Yellow	I-6000 1"	29"	37"
11" Gray or Yellow	I-6000 1-1/2"	40"	52"
12" Gray or Yellow	T-5000 2"	47"	59"

Panel Hold Downs



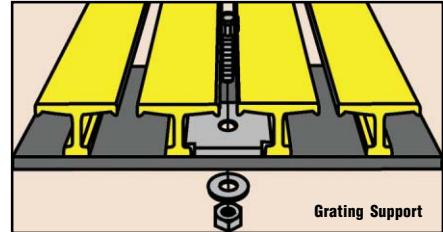
Weldable 316L stainless steel saddle clips are available for all grating series except T-1800 and T-3500.

*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.

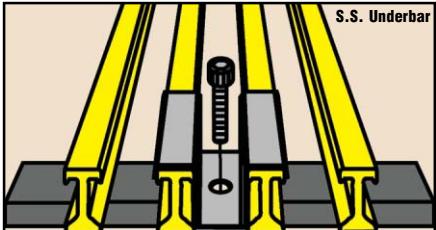
*Bolts are priced separately from the hold-down.



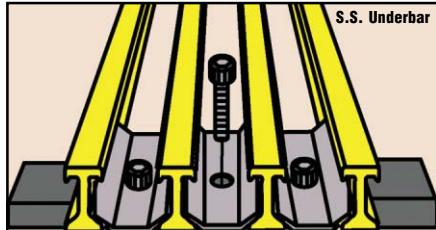
Weldable 316L stainless steel insert clips are available for series T-1800 and T-3500 only.

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

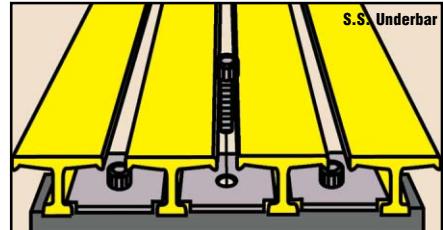
Panel Connectors Panel Connectors are generally only used at midspan to assist in transferring load from section to section.



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.

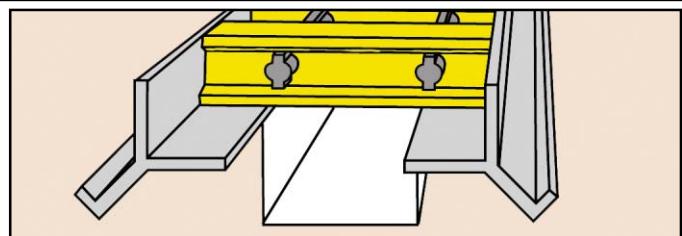


Insert clip hold-downs are available for T-1800 and T-3500 grating.
(All bolts are 1/4-20 x 1-1/4", cap head, 316L stainless steel.)

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.



Using The Load/Deflection Tables

Typical Bearing Bar Spacings

Strongwell manufactures virtually any non-standard and non-stocked custom grid and grating. However, the following load tables are for the most popular bearing bar configurations. The physical properties are shown for the section.

To determine loading or physical properties for other bar spacings, use the multiplier shown on the tables.

Series Designation

The series designation indicates the bar size and shape and the percent of open area. For example: T-1800 1" means 1" T-bar spaced to give an 18% open area.

Cross Rod Spacings

Cross rod spacings must be 2", 4", 6", 8", 10", etc. Our standard spacings are 6", 12" and 18" on center.

Load Table Values

All tables show typical values.

Load Data

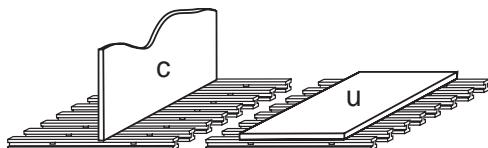
Deflection and safe load data were calculated by the Strongwell Test Lab. All tables show typical values.

c is Concentrated Load LBS/FT of width

Δc is Deflection under Concentrated Load

u is Uniform Load LBS/FT²

Δu is Deflection under Uniform Load



The modulus of elasticity will vary with span length due to the non-homogeneous make-up of composite material.

DURADEK® High Strength Fiberglass Grating

The following load tables are for standard DURADEK® fiberglass grating panels stocked by distributors: DURADEK® I-6000 1", I-6000 1-1/2", and T-5000 2". Standard panels come with cross-rod spacings of 6" or optional 12" on center.

DURADEK® I-6000 1" Bearing Bars Spaced 1-1/2" On Center

A = 2.496 IN²/FT OF WIDTH S = 0.656 IN³/FT OF WIDTH I = 0.328 IN⁴/FT OF WIDTH
60% OPEN AREA APPROX. WT. = 2.4 LBS/SQ FT

SPAN INCHES		LOAD												SAFE LOAD 2:1	SAFETY FACTOR	DEFLECTION	$E \times 10^6$ PSI	
		50	100	150	200	250	300	400	500	750	1000	2000	3000	4000	5000			
12	Δu	0.001	0.002	0.003	0.004	0.005	0.005	0.007	0.009	0.014	0.018	0.036	0.054	0.073	0.091	10401	0.189	3.78
	Δc	0.001	0.003	0.004	0.006	0.007	0.009	0.012	0.015	0.022	0.029	0.058	0.087	0.116	0.145	5200	0.151	
18	Δu	0.004	0.008	0.013	0.017	0.021	0.025	0.033	0.042	0.063	0.084	0.167	0.251	0.335	0.418	4954	0.415	4.15
	Δc	0.004	0.009	0.013	0.018	0.022	0.027	0.036	0.045	0.067	0.089	0.179	0.268	0.357	0.446	3716	0.332	
24	Δu	0.012	0.025	0.037	0.050	0.062	0.075	0.100	0.124	0.187	0.249	0.498				2900	0.722	4.41
	Δc	0.010	0.020	0.030	0.040	0.050	0.060	0.080	0.100	0.149	0.199	0.398	0.597			2900	0.577	
30	Δu	0.029	0.058	0.087	0.116	0.145	0.174	0.231	0.289	0.434	0.579					1856	1.074	4.63
	Δc	0.019	0.037	0.056	0.074	0.093	0.111	0.148	0.185	0.278	0.370					2320	0.859	
36	Δu	0.058	0.115	0.173	0.230	0.288	0.345	0.460	0.575							1289	1.483	4.83
	Δc	0.031	0.061	0.092	0.123	0.153	0.184	0.245	0.307	0.460	0.614					1933	1.186	
42	Δu	0.105	0.211	0.316	0.422	0.527	0.633									943	1.989	4.88
	Δc	0.048	0.096	0.145	0.193	0.241	0.289	0.386	0.482							1649	1.591	
48	Δu	0.176	0.353	0.529	0.705											719	2.534	4.98
	Δc	0.071	0.141	0.212	0.282	0.353	0.423	0.564								1437	2.027	
54	Δu	0.281	0.563													566	3.184	5.00
	Δc	0.100	0.200	0.300	0.400	0.500	0.600									1274	2.548	

NOTE: When a 100 pounds per square foot uniform load is placed upon a 43" simple span, it will produce a deflection of 1/4" at midspan.

DURADEX® I-6000 1-1/2" Bearing Bars Spaced 1-1/2" On Center

A = 3.136 IN³/FT OF WIDTH S = 1.240 IN³/FT OF WIDTH I = 0.928 IN⁴/FT OF WIDTH
60% OPEN AREA APPROX. WT. = 2.92 LBS/SQ FT

SPAN INCHES		LOAD														SAFE LOAD 2:1	SAFETY FACTOR	DEFLECTION	E x 10 ⁶ PSI	
		50	100	150	200	250	300	400	500	750	1000	2000	3000	4000	5000	6000				
12	Δu	0.000	0.001	0.001	0.001	0.002	0.002	0.003	0.003	0.005	0.006	0.013	0.019	0.026	0.032	0.038	0.045	17601	0.113	3.79
	Δc	0.001	0.001	0.002	0.002	0.003	0.003	0.004	0.005	0.008	0.010	0.020	0.031	0.041	0.051	0.061	0.072	8800	0.090	
18	Δu	0.002	0.003	0.005	0.006	0.008	0.009	0.012	0.015	0.023	0.030	0.061	0.091	0.121	0.152	0.182	0.212	7823	0.237	4.05
	Δc	0.002	0.003	0.005	0.006	0.008	0.010	0.013	0.016	0.024	0.032	0.065	0.097	0.129	0.162	0.194	0.226	5867	0.190	
24	Δu	0.005	0.009	0.014	0.018	0.023	0.027	0.037	0.046	0.069	0.091	0.183	0.274	0.366	0.457	0.549	0.640	4400	0.403	4.24
	Δc	0.004	0.007	0.011	0.015	0.018	0.022	0.029	0.037	0.055	0.073	0.146	0.220	0.293	0.366	0.439	0.512	4400	0.322	
30	Δu	0.011	0.022	0.032	0.043	0.054	0.065	0.086	0.108	0.161	0.215	0.430	0.646					2773	0.597	4.40
	Δc	0.007	0.014	0.021	0.028	0.034	0.041	0.055	0.069	0.103	0.138	0.276	0.413	0.551				3467	0.478	
36	Δu	0.022	0.044	0.065	0.087	0.109	0.131	0.175	0.218	0.327	0.436							1896	0.827	4.50
	Δc	0.012	0.023	0.035	0.047	0.058	0.070	0.093	0.116	0.175	0.233	0.466						2845	0.662	
42	Δu	0.040	0.079	0.119	0.159	0.198	0.238	0.317	0.396	0.595								1361	1.079	4.59
	Δc	0.018	0.036	0.054	0.072	0.091	0.109	0.145	0.181	0.272	0.362							2381	0.863	
48	Δu	0.067	0.133	0.200	0.266	0.333	0.400	0.533	0.666									1017	1.354	4.66
	Δc	0.027	0.053	0.080	0.107	0.133	0.160	0.213	0.266	0.400	0.533							2033	1.083	
54	Δu	0.106	0.211	0.317	0.422	0.528	0.633											777	1.640	4.71
	Δc	0.038	0.075	0.113	0.150	0.188	0.225	0.300	0.375	0.563								1748	1.312	
60	Δu	0.160	0.320	0.480	0.639													608	1.944	4.74
	Δc	0.051	0.102	0.153	0.205	0.256	0.307	0.409	0.512									1520	1.555	
66	Δu	0.233	0.466															485	2.259	4.76
	Δc	0.068	0.136	0.203	0.271	0.339	0.407	0.542	0.678									1333	1.808	

NOTE: When a 100 pounds per square foot uniform load is placed upon a 56" simple span, it will produce a deflection of 1/4" at midspan.

DURADEX® T-5000 2" Bearing Bars Spaced 2" On Center

A = 3.252 IN³/FT OF WIDTH S_T = 1.906 IN³/FT OF WIDTH S_B = 1.495 IN³/FT OF WIDTH I = 1.676 IN⁴/FT OF WIDTH
50%OPEN AREA APPROX. WT. = 3.0 LBS/SQ FT

SPAN INCHES		LOAD														SAFE LOAD 2:1	SAFETY FACTOR	DEFLECTION	E x 10 ⁶ PSI	
		50	100	150	200	250	300	400	500	750	1000	2000	3000	4000	5000	6000				
12	Δu	0.000	0.000	0.001	0.001	0.001	0.001	0.002	0.003	0.004	0.007	0.011	0.014	0.018	0.021	0.025	0.028	11333	0.040	3.80
	Δc	0.000	0.001	0.001	0.001	0.002	0.002	0.003	0.004	0.006	0.011	0.017	0.023	0.028	0.034	0.040	0.045	5666	0.032	
18	Δu	0.001	0.002	0.003	0.003	0.004	0.005	0.007	0.009	0.013	0.017	0.035	0.052	0.070	0.087	0.104	0.122	7536	0.131	3.91
	Δc	0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.009	0.014	0.019	0.037	0.056	0.074	0.093	0.111	0.130	5666	0.105	
24	Δu	0.003	0.005	0.008	0.011	0.013	0.016	0.021	0.027	0.040	0.054	0.107	0.161	0.214	0.268	0.321	0.375	5666	0.304	4.01
	Δc	0.002	0.004	0.006	0.009	0.011	0.013	0.017	0.021	0.032	0.043	0.086	0.129	0.171	0.214	0.257	0.300	5666	0.243	
30	Δu	0.006	0.013	0.019	0.026	0.032	0.038	0.051	0.064	0.096	0.128	0.256	0.384	0.512	0.640			3626	0.464	4.10
	Δc	0.004	0.008	0.012	0.016	0.020	0.025	0.033	0.041	0.061	0.082	0.164	0.246	0.327	0.409	0.491	0.573	4534	0.371	
36	Δu	0.013	0.026	0.039	0.052	0.065	0.078	0.104	0.130	0.195	0.260	0.520						2519	0.655	4.18
	Δc	0.007	0.014	0.021	0.028	0.035	0.042	0.055	0.069	0.104	0.139	0.277	0.416	0.555	0.694			3778	0.524	
42	Δu	0.024	0.047	0.071	0.095	0.119	0.142	0.190	0.237	0.356	0.474							1850	0.877	4.25
	Δc	0.011	0.022	0.033	0.043	0.054	0.065	0.087	0.108	0.163	0.217	0.433	0.650					3238	0.702	
48	Δu	0.040	0.079	0.119	0.158	0.198	0.238	0.317	0.396	0.594								1417	1.122	4.34
	Δc	0.016	0.032	0.048	0.063	0.079	0.095	0.127	0.158	0.238	0.317	0.634						2834	0.898	
54	Δu	0.062	0.125	0.187	0.250	0.312	0.374	0.499	0.624									1120	1.398	4.41
	Δc	0.022	0.044	0.067	0.089	0.111	0.133	0.178	0.222	0.333	0.444							2519	1.118	
60	Δu	0.094	0.188	0.282	0.375	0.469	0.563	0.751										907	1.702	4.47
	Δc	0.030	0.060	0.090	0.120	0.150	0.180	0.240	0.300	0.450	0.601							2267	1.361	
66	Δu	0.136	0.272	0.408	0.544	0.679												749	2.036	4.52
	Δc	0.040	0.079	0.119	0.158	0.198	0.237	0.316	0.395	0.593								2060	1.629	
72	Δu	0.190	0.380	0.570														629	2.390	4.58
	Δc	0.051	0.101	0.152	0.203	0.253	0.304	0.405	0.507									1889	1.914	
78	Δu	0.260	0.520															536	2.788	4.61
	Δc	0.064	0.128	0.192	0.256	0.320	0.384	0.512	0.640									1744	2.231	
84	Δu	0.347	0.693															463	3.208	4.65
	Δc	0.079	0.158	0.238	0.317	0.396	0.475	0.634										1619	2.566	

NOTE: When a 100 pounds per square foot uniform load is placed upon a 64" simple span, it will produce a deflection of 1/4" at midspan.

DURAGRID® - Custom grating systems are made to specific requirements. The following load tables are the most popular.

DURAGRID® I-4000 1" I Bearing Bars Spaced 1" On Center

OTHER COMMON SERIES AND SPACING (X):

SERIES	(X)	(M)*
I-3000	0.850"	1.17
I-5000	1.200"	0.84
I-7000	2.000"	0.50
I-8000	3.000"	0.33

OR MULTIPLES OF ABOVE

1" I BEARING BARS: VALUES FOR 12 BARS PER FT OF WIDTH

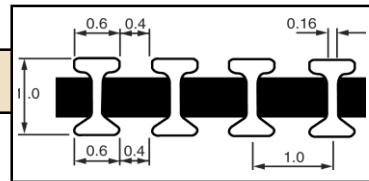
A = 3.744 IN³/FT OF WIDTH S = 0.984 IN³/FT OF WIDTH I = 0.492 IN³/FT OF WIDTH³

WEIGHT/FOOT = .253 LBS/FT OF BAR WEIGHT/FOOT = .186 LBS/FT OF CROSS ROD

APPROX. WEIGHT = 3.4 LBS/SQ. FT.

SPAN INCHES		LOAD												SAFE LOAD 2:1	SAFETY FACTOR	DEFLECTION	E x 10 ⁶ PSI			
		50	100	150	200	250	300	400	500	750	1000	2000	2500	3000	4000	5000	6000			
12	Δu	0.001	0.001	0.002	0.002	0.003	0.004	0.005	0.006	0.009	0.012	0.024	0.030	0.036	0.048	0.060	0.073	15600	0.189	3.78
	Δc	0.001	0.002	0.003	0.004	0.005	0.006	0.008	0.010	0.015	0.019	0.039	0.048	0.058	0.077	0.097	0.116	7800	0.151	
18	Δu	0.003	0.006	0.008	0.011	0.014	0.017	0.022	0.028	0.042	0.056	0.112	0.139	0.167	0.223	0.279	0.335	7431	0.415	4.15
	Δc	0.003	0.006	0.009	0.012	0.015	0.018	0.024	0.030	0.045	0.060	0.119	0.149	0.179	0.238	0.298	0.357	5573	0.332	
24	Δu	0.008	0.017	0.025	0.033	0.041	0.050	0.066	0.083	0.124	0.166	0.332	0.415	0.498	0.664			4350	0.722	4.41
	Δc	0.007	0.013	0.020	0.027	0.033	0.040	0.053	0.066	0.100	0.133	0.265	0.332	0.398	0.531	0.664		4350	0.577	
30	Δu	0.019	0.039	0.058	0.077	0.096	0.116	0.154	0.193	0.289	0.386							2784	1.074	4.63
	Δc	0.012	0.025	0.037	0.049	0.062	0.074	0.099	0.123	0.185	0.247	0.494	0.617					3480	0.859	
36	Δu	0.038	0.077	0.115	0.153	0.192	0.230	0.307	0.383	0.575								1933	1.482	4.83
	Δc	0.020	0.041	0.061	0.082	0.102	0.123	0.164	0.205	0.307	0.409							2900	1.186	
42	Δu	0.070	0.141	0.211	0.281	0.352	0.422	0.563	0.703									1414	1.988	4.88
	Δc	0.032	0.064	0.096	0.129	0.161	0.193	0.257	0.321	0.482	0.643							2474	1.590	
48	Δu	0.118	0.235	0.353	0.470	0.588	0.705	0.376	0.470									1078	2.534	4.98
	Δc	0.047	0.094	0.141	0.188	0.235	0.282											2155	2.026	

*(M) - Multiplier for load table loads



DURAGRID® I-4000 1-1/4" I Bearing Bars Spaced 1" On Center

OTHER COMMON SERIES AND SPACING (X):

SERIES	(X)	(M)*
I-3000	0.850"	1.17
I-5000	1.200"	0.84
I-6000	1.500"	0.67
I-7000	2.000"	0.50

OR MULTIPLES OF ABOVE

1-1/4" I BEARING BARS: VALUES FOR 12 BARS PER FT OF WIDTH

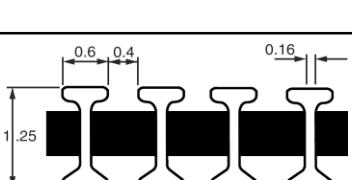
A = 4.224 IN³/FT OF WIDTH S = 1.306 IN³/FT OF WIDTH I = 0.816 IN³/FT OF WIDTH

WEIGHT/FOOT = .290 LBS/FT OF BAR WEIGHT/FOOT = .186 LBS/FT OF CROSS ROD

APPROX. WEIGHT = 3.85 LBS/SQ. FT.

SPAN INCHES		LOAD												SAFE LOAD 2:1	SAFETY FACTOR	DEFLECTION	E x 10 ⁶ PSI			
		50	100	150	200	250	300	400	500	750	1000	2000	3000	4000	5000	6000				
12	Δu	0.000	0.001	0.001	0.002	0.002	0.003	0.004	0.006	0.008	0.016	0.023	0.031	0.039	0.047	0.054	21000	0.163	3.55	
	Δc	0.001	0.001	0.002	0.002	0.003	0.004	0.005	0.006	0.009	0.012	0.025	0.037	0.050	0.062	0.075	0.087	10500	0.130	
18	Δu	0.002	0.004	0.005	0.007	0.009	0.011	0.015	0.018	0.027	0.037	0.073	0.110	0.146	0.183	0.219	0.256	9582	0.350	3.82
	Δc	0.002	0.004	0.006	0.008	0.010	0.012	0.016	0.019	0.029	0.039	0.078	0.117	0.156	0.195	0.234	0.273	7187	0.280	
24	Δu	0.005	0.011	0.016	0.022	0.027	0.033	0.044	0.054	0.082	0.109	0.218	0.327	0.436	0.545	0.654		5475	0.596	4.05
	Δc	0.004	0.009	0.013	0.017	0.022	0.026	0.035	0.044	0.065	0.087	0.174	0.261	0.349	0.436	0.523	0.610	5475	0.477	
30	Δu	0.013	0.026	0.038	0.051	0.064	0.077	0.102	0.128	0.192	0.256	0.512						3472	0.888	4.21
	Δc	0.008	0.016	0.025	0.033	0.041	0.049	0.065	0.082	0.123	0.164	0.327	0.491	0.655				4340	0.711	
36	Δu	0.026	0.051	0.077	0.103	0.128	0.154	0.205	0.257	0.385	0.513							2388	1.226	4.35
	Δc	0.014	0.027	0.041	0.055	0.068	0.082	0.110	0.137	0.205	0.274	0.548						3583	0.981	
42	Δu	0.046	0.093	0.139	0.186	0.232	0.279	0.372	0.465	0.697								1727	1.606	4.45
	Δc	0.021	0.043	0.064	0.085	0.106	0.128	0.170	0.213	0.319	0.425							3023	1.285	
48	Δu	0.078	0.155	0.233	0.310	0.388	0.465	0.621										1302	2.020	4.55
	Δc	0.031	0.062	0.093	0.124	0.155	0.186	0.248	0.310	0.465	0.621							2603	1.615	
54	Δu	0.123	0.245	0.368	0.491	0.613	0.736											1007	2.470	4.61
	Δc	0.044	0.087	0.131	0.174	0.218	0.262	0.349	0.436	0.654								2267	1.977	
60	Δu	0.185	0.370	0.555	0.740													796	2.944	4.66
	Δc	0.059	0.118	0.178	0.237	0.296	0.355	0.473	0.592									1990	2.355	

*(M) - Multiplier for load table loads



DURAGRID® I-4000 1-1/2" I Bearing Bars Spaced 1" On Center

OTHER COMMON SERIES AND SPACING (X):

SERIES	(X)	(M)*
I-3000	0.850"	1.17
I-5000	1.200"	0.84
I-7000	2.000"	0.50
I-8000	3.000"	0.33

1-1/2" I BEARING BARS: VALUES FOR 12 BARS PER FT OF WIDTH

A = 4.704 IN³/FT OF WIDTH S = 1.860 IN³/FT OF WIDTH I = 1.392 IN⁴/FT OF WIDTH
WEIGHT/FOOT = .319 LBS/FT OF BAR WEIGHT/FOOT = .186 LBS/FT OF CROSS ROD
APPROX. WEIGHT = 4.2 LBS/SQ. FT.

OR MULTIPLES OF ABOVE

SPAN INCHES	50	100	150	200	250	300	400	500	LOAD												SAFE LOAD 2:1	SAFETY FACTOR	DEFLECTION	E x 10 ⁶ PSI
									750	1000	2000	3000	4000	5000	6000	7000	8000	9000						
12	Δu	0.000	0.000	0.001	0.001	0.001	0.002	0.002	0.003	0.004	0.009	0.013	0.017	0.021	0.026	0.030	0.034	0.038	26400	0.113	3.79			
	Δc	0.000	0.001	0.001	0.001	0.002	0.002	0.003	0.003	0.005	0.007	0.014	0.020	0.027	0.034	0.041	0.048	0.055	13200	0.090				
18	Δu	0.001	0.002	0.003	0.004	0.005	0.006	0.008	0.010	0.015	0.020	0.040	0.061	0.081	0.101	0.121	0.141	0.162	0.182	11734	0.237	4.05		
	Δc	0.001	0.002	0.003	0.004	0.005	0.006	0.009	0.011	0.016	0.022	0.043	0.065	0.086	0.108	0.129	0.151	0.172	0.194	8800	0.190			
24	Δu	0.003	0.006	0.009	0.012	0.015	0.018	0.024	0.030	0.046	0.061	0.122	0.183	0.244	0.305	0.366	0.427	0.488	0.549	6600	0.403	4.24		
	Δc	0.002	0.005	0.007	0.010	0.012	0.015	0.020	0.024	0.037	0.049	0.098	0.146	0.195	0.244	0.293	0.342	0.390	0.439	6600	0.322			
30	Δu	0.007	0.014	0.022	0.029	0.036	0.043	0.057	0.072	0.108	0.143	0.287	0.430	0.574	0.717					4160	0.597	4.40		
	Δc	0.005	0.009	0.014	0.018	0.023	0.028	0.037	0.046	0.069	0.092	0.184	0.276	0.367	0.459	0.551	0.643			5200	0.478			
36	Δu	0.015	0.029	0.044	0.058	0.073	0.087	0.116	0.145	0.218	0.291	0.582								2844	0.827	4.50		
	Δc	0.008	0.016	0.023	0.031	0.039	0.047	0.062	0.078	0.116	0.155	0.310	0.466	0.621						4267	0.662			
42	Δu	0.026	0.053	0.079	0.106	0.132	0.159	0.211	0.264	0.396	0.528									2041	1.079	4.59		
	Δc	0.012	0.024	0.036	0.048	0.060	0.072	0.097	0.121	0.181	0.242	0.483	0.725							3571	0.863			
48	Δu	0.044	0.089	0.133	0.178	0.222	0.266	0.355	0.444	0.666										1525	1.354	4.66		
	Δc	0.018	0.036	0.053	0.071	0.089	0.107	0.142	0.178	0.266	0.355									3050	1.083			
54	Δu	0.070	0.141	0.211	0.281	0.352	0.422	0.563	0.704											1165	1.639	4.71		
	Δc	0.025	0.050	0.075	0.100	0.125	0.150	0.200	0.250	0.375	0.500									2622	1.312			
60	Δu	0.107	0.213	0.320	0.426	0.533	0.639													912	1.944	4.74		
	Δc	0.034	0.068	0.102	0.136	0.171	0.205	0.273	0.341	0.512	0.682									2280	1.555			
66	Δu	0.155	0.311	0.466	0.621															727	2.259	4.76		
	Δc	0.045	0.090	0.136	0.181	0.226	0.271	0.362	0.452	0.678										2000	1.808			

*(M) - Multiplier for load table loads

DURAGRID® T-1800 1" T Bearing Bars Spaced 2" On Center

OTHER COMMON SERIES AND SPACING (X):

SERIES	(X)	(M)*
T-0000	1.625"	1.23
T-1000	1.800"	1.11
T-3500	2.400"	0.83

1" T BEARING BARS: VALUES FOR 6 BARS PER FT OF WIDTH

A = 2.850 IN³/FT OF WIDTH S_t = 0.903 IN³/FT OF WIDTH
I = 0.306 IN⁴/FT OF WIDTH S_b = 0.464 IN³/FT OF WIDTH
WEIGHT/FOOT = .373 LBS/FT OF BAR WEIGHT/FOOT = .186 LBS/FT OF CROSS ROD
APPROX. WEIGHT = 2.61 LBS/SQ. FT

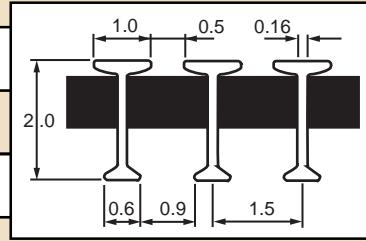
SPAN INCHES	50	100	150	200	250	300	400	500	750	1000	2000	2500	3000	4000	LOAD			SAFE LOAD 2:1	SAFETY FACTOR	DEFLECTION	E x 10 ⁶ PSI
															500	750	1000				
12	Δu	0.001	0.002	0.003	0.004	0.006	0.007	0.009	0.011	0.017	0.022	0.045	0.056	0.067	0.090				10680	0.240	3.27
	Δc	0.002	0.004	0.005	0.007	0.009	0.011	0.014	0.018	0.027	0.036	0.072	0.090	0.108	0.144				5340	0.192	
18	Δu	0.005	0.010	0.016	0.021	0.026	0.031	0.041	0.052	0.078	0.104	0.207	0.259	0.311	0.415				4746	0.492	3.59
	Δc	0.006	0.011	0.017	0.022	0.028	0.033	0.044	0.055	0.083	0.111	0.221	0.277	0.332	0.442				3560	0.394	
24	Δu	0.015	0.031	0.046	0.062	0.077	0.093	0.124	0.155	0.232	0.310	0.619							2670	0.827	3.80
	Δc	0.012	0.025	0.037	0.050	0.062	0.074	0.099	0.124	0.186	0.248	0.495	0.619						2670	0.661	
30	Δu	0.036	0.072	0.108	0.144	0.180	0.215	0.287	0.359	0.539	0.718								1693	1.216	4.00
	Δc	0.023	0.046	0.069	0.092	0.115	0.138	0.184	0.230	0.345	0.460								2116	0.972	
36	Δu	0.072	0.145	0.217	0.289	0.361	0.434	0.578	0.723										1157	1.673	4.12
	Δc	0.039	0.077	0.116	0.154	0.193	0.231	0.308	0.385	0.578									1736	1.338	
42	Δu	0.129	0.257	0.386	0.514	0.643													833	2.143	4.29
	Δc	0.059	0.118	0.176	0.235	0.294	0.353	0.470	0.588										1458	1.714	
48	Δu	0.215	0.431	0.646															625	2.692	4.37
	Δc	0.086	0.172	0.258	0.345	0.431	0.517	0.689											1250	2.154	

*(M) - Multiplier for load table loads

DURAGRID® T-3300 2" T Bearing Bars Spaced 1-1/2" On Center

OTHER COMMON SERIES AND SPACING (X): SERIES (X) (M)*												2" T BEARING BARS: VALUES FOR 8 BARS PER FT OF WIDTH A = 4.338 IN ² /FT OF WIDTH S _a = 2.541 IN ³ /FT OF WIDTH I = 2.234 IN ⁴ /FT OF WIDTH S _b = 1.994 IN ³ /FT OF WIDTH WEIGHT/FOOT = .446 LBS/FT OF BAR WEIGHT/FOOT = .186 LBS/FT OF CROSS ROD APPROX. WEIGHT = 3.94 LBS/SQ. FT.											
SPAN INCHES		LOAD										SAFE LOAD 2:1		SAFETY FACTOR		E x 10 ⁶ DEFLECTION PSI							
		50	100	150	200	250	300	400	500	750	1000	2000	2500	3000	4000	5000	6000	7000	8000				
12	Δu	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.002	0.003	0.005	0.007	0.008	0.011	0.013	0.016	0.019	0.021	15110	0.040			
	Δc	0.000	0.000	0.001	0.001	0.001	0.002	0.002	0.003	0.004	0.008	0.011	0.013	0.017	0.021	0.025	0.030	0.034	7555	0.032			
18	Δu	0.001	0.001	0.002	0.003	0.003	0.004	0.005	0.007	0.010	0.013	0.026	0.033	0.039	0.052	0.065	0.078	0.091	0.104	10048	0.131		
	Δc	0.001	0.001	0.002	0.003	0.003	0.004	0.006	0.007	0.010	0.014	0.028	0.035	0.042	0.056	0.070	0.083	0.097	0.111	7555	0.105		
24	Δu	0.002	0.004	0.006	0.008	0.010	0.012	0.016	0.020	0.030	0.040	0.080	0.100	0.121	0.161	0.201	0.241	0.281	0.321	7555	0.304		
	Δc	0.002	0.003	0.005	0.006	0.008	0.010	0.013	0.016	0.024	0.032	0.064	0.080	0.096	0.129	0.161	0.193	0.225	0.257	7555	0.243		
30	Δu	0.005	0.010	0.014	0.019	0.024	0.029	0.038	0.048	0.072	0.096	0.192	0.240	0.288	0.384	0.480	0.576	0.672	4835	0.464			
	Δc	0.003	0.006	0.009	0.012	0.015	0.018	0.025	0.031	0.046	0.061	0.123	0.154	0.184	0.246	0.307	0.368	0.430	0.491	6045	0.371		
36	Δu	0.010	0.020	0.029	0.039	0.049	0.059	0.078	0.098	0.146	0.195	0.390	0.488	0.586					3358	0.655			
	Δc	0.005	0.010	0.016	0.021	0.026	0.031	0.042	0.052	0.078	0.104	0.208	0.260	0.312	0.416	0.520	0.625		5037	0.524			
42	Δu	0.018	0.036	0.053	0.071	0.089	0.107	0.142	0.178	0.267	0.356								2467	0.877			
	Δc	0.008	0.016	0.024	0.033	0.041	0.049	0.065	0.081	0.122	0.163	0.325	0.406	0.488	0.650				4317	0.702			
48	Δu	0.030	0.059	0.089	0.119	0.149	0.178	0.238	0.297	0.446	0.594								1889	1.122			
	Δc	0.012	0.024	0.036	0.048	0.059	0.071	0.095	0.119	0.178	0.238	0.475	0.594						3778	0.898			
54	Δu	0.047	0.094	0.140	0.187	0.234	0.281	0.375	0.468										1493	1.398			
	Δc	0.017	0.033	0.050	0.067	0.083	0.100	0.133	0.166	0.250	0.333	0.666							3358	1.118			
60	Δu	0.070	0.141	0.211	0.282	0.352	0.422	0.563											1209	1.703			
	Δc	0.023	0.045	0.068	0.090	0.113	0.135	0.180	0.225	0.338	0.451								3022	1.362			
66	Δu	0.102	0.204	0.306	0.408	0.510	0.612												999	2.037			
	Δc	0.030	0.059	0.089	0.119	0.148	0.178	0.237	0.297	0.445	0.593								2747	1.629			
72	Δu	0.142	0.285	0.427	0.570														839	2.391			
	Δc	0.038	0.076	0.114	0.152	0.190	0.228	0.304	0.380	0.570									2519	1.914			
78	Δu	0.195	0.390	0.585															715	2.788			
	Δc	0.048	0.096	0.144	0.192	0.240	0.288	0.384	0.480										2325	2.232			
84	Δu	0.260	0.520																617	3.209			
	Δc	0.059	0.119	0.178	0.238	0.297	0.357	0.475	0.594										2159	2.566			

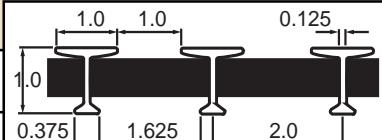
*(M) - Multiplier for load table loads



DURAGRID® ECONOMY 5000 1" T Bearing Bars Spaced 2" On Center

OTHER COMMON SERIES AND SPACING (X): SERIES (X) (M)*												1" T BEARING BAR: VALUES FOR 6 BARS PER FT OF WIDTH A = 1.596 IN ² /FT OF WIDTH S _a = 0.530 IN ³ /FT OF WIDTH I = 0.197 IN ⁴ /FT OF WIDTH S _b = 0.314 IN ³ /FT OF WIDTH WEIGHT/FOOT = .207 LBS/FT OF BAR WEIGHT/FOOT = .186 LBS/FT OF CROSS ROD APPROX. WEIGHT = 1.62 LBS/SQ. FT.											
SPAN INCHES		LOAD										SAFE LOAD 2:1		SAFETY FACTOR		E x 10 ⁶ DEFLECTION PSI							
		50	100	150	200	250	300	400	500	750	1000	2000											
12	Δu	0.002	0.004	0.006	0.008	0.010	0.011	0.015	0.019	0.029	0.038	0.076							4766	0.182			
	Δc	0.003	0.006	0.009	0.012	0.015	0.018	0.024	0.031	0.046	0.061	0.122							2383	0.146			
18	Δu	0.009	0.019	0.028	0.037	0.047	0.056	0.075	0.094	0.140	0.187	0.374							2144	0.401			
	Δc	0.010	0.020	0.030	0.040	0.050	0.060	0.080	0.100	0.150	0.200	0.399							1609	0.321			
24	Δu	0.029	0.057	0.086	0.114	0.143	0.171	0.228	0.286	0.428	0.571								1221	0.697			
	Δc	0.023	0.046	0.069	0.091	0.114	0.137	0.183	0.228	0.343	0.457								1221	0.558			
30	Δu	0.068	0.135	0.203	0.270	0.338	0.406	0.541	0.676										791	1.069			
	Δc	0.043	0.087	0.130	0.173	0.216	0.260	0.346	0.433	0.649									989	0.856			
36	Δu	0.136	0.272	0.408	0.544	0.680													556	1.513			
	Δc	0.073	0.145	0.218	0.290	0.363	0.435	0.580	0.726										834	1.210			
42	Δu	0.244	0.488	0.732															413	2.017			
	Δc	0.112	0.223	0.335	0.446	0.558	0.670												723	1.614			

*(M) - Multiplier for load table loads



DURAGRID® ECONOMY 5000 1-1/2" T Bearing Bars Spaced 2" On Center

OTHER COMMON SERIES AND SPACING (X):
 SERIES (X) (M)*
ECONOMY 3300 1.500" **1.33**
 OR MULTIPLES OF ABOVE

1-1/2" T BEARING BAR: VALUES FOR 6 BARS PER FT OF WIDTH

$$A = 1.968 \text{ IN}^2/\text{FT OF WIDTH} \quad S_t = 0.950 \text{ IN}^3/\text{FT OF WIDTH}$$

$$I = 0.557 \text{ IN}^4/\text{FT OF WIDTH} \quad S_b = 0.609 \text{ IN}^3/\text{FT OF WIDTH}$$

WEIGHT/FOOT = .250 LBS/FT OF BAR WEIGHT/FOOT = .186 LBS./FT OF CROSS ROD
 APPROX. WEIGHT = 1.9 LBS/SQ. FT.

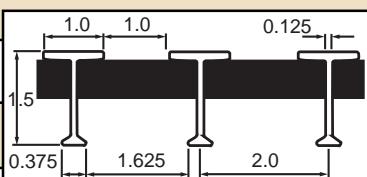
SAFE LOAD
2:1
SAFETY FACTOR
DEFLECTION

$$E \times 10^6$$

$$\text{PSI}$$

SPAN INCHES	Δu	LOAD														SAFE LOAD 2:1 SAFETY FACTOR	DEFLECTION	$E \times 10^6$ PSI	
		50	100	150	200	250	300	400	500	750	1000	2000	2500	3000	4000				
12	Δu	0.001	0.001	0.002	0.003	0.003	0.004	0.006	0.007	0.010	0.014	0.028	0.034	0.041	0.055	0.069	10322	0.142	2.93
	Δc	0.001	0.002	0.003	0.004	0.006	0.007	0.009	0.011	0.017	0.022	0.044	0.055	0.066	0.088	0.110	5161	0.114	
18	Δu	0.003	0.007	0.010	0.014	0.017	0.020	0.027	0.034	0.051	0.068	0.136	0.170	0.204	0.273	0.341	4643	0.316	3.00
	Δc	0.004	0.007	0.011	0.015	0.018	0.022	0.029	0.036	0.055	0.073	0.145	0.182	0.218	0.291	0.364	3482	0.253	
24	Δu	0.011	0.021	0.032	0.042	0.053	0.063	0.084	0.105	0.158	0.211	0.421	0.526	0.632			2643	0.556	3.07
	Δc	0.008	0.017	0.025	0.034	0.042	0.051	0.067	0.084	0.126	0.168	0.337	0.421	0.505	0.674		2643	0.445	
30	Δu	0.025	0.050	0.076	0.101	0.126	0.151	0.202	0.252	0.378	0.504						1712	0.863	3.13
	Δc	0.016	0.032	0.048	0.065	0.081	0.097	0.129	0.161	0.242	0.323	0.645					2139	0.690	
36	Δu	0.051	0.102	0.153	0.204	0.256	0.307	0.409	0.511	0.767							1202	1.229	3.20
	Δc	0.027	0.055	0.082	0.109	0.136	0.164	0.218	0.273	0.409	0.545						1804	0.984	
42	Δu	0.093	0.185	0.278	0.371	0.463	0.556	0.742									894	1.657	3.27
	Δc	0.042	0.085	0.127	0.169	0.212	0.254	0.339	0.424	0.636							1564	1.325	
48	Δu	0.155	0.310	0.464	0.619												692	2.143	3.34
	Δc	0.062	0.124	0.186	0.248	0.310	0.372	0.495	0.619								1384	1.714	

*(M) - Multiplier for load table loads



DURAGRID® Heavy Duty Grating

The following load tables are for the solid bar heavy duty grating designed to take heavy wheel traffic such as forklifts, tow motors and truck traffic. Because of the variety of wheel types and loading, it is recommended that you contact Strongwell to determine the series of heavy duty grating needed for your application.

All load table values meet the flexural properties with a factor of safety of 2.5 and meet the shear properties with a factor of safety of 3.0.

Ultimate Coupon Properties for Heavy Duty Grating Load Tables

Properties	Test Method	Value
Flexural Strength	ASTM D-790	100 ksi
Flexural Modulus	ASTM D-790	5,200 ksi
Short Beam Shear	ASTM D-2344	7.5 ksi

DURAGRID® HD-6000 1" Bearing Bar

$$A = 4.8 \text{ in}^2 \quad I = 0.40 \text{ in}^4 \quad S = 0.80 \text{ in}^3$$

SPAN INCHES	Δu	LOAD												SAFE LOAD 2:1 SAFETY FACTOR	DEFLECTION	$E \times 10^6$ PSI
		100	200	300	500	1000	2000	3000	4000	5000	6000	7000	8000			
12	Δu	0.001	0.002	0.003	0.005	0.011	0.021	0.032	0.042	0.053	0.063	0.074	0.085	9000	0.095	5.32
	Δc	0.002	0.003	0.005	0.008	0.017	0.034	0.051	0.068	0.085	0.102	0.118	0.135	7924	0.134	
18	Δu	0.005	0.010	0.015	0.025	0.051	0.101	0.152	0.203	0.253	0.304	0.355	0.405	6000	0.304	5.62
	Δc	0.005	0.011	0.016	0.027	0.054	0.108	0.162	0.216	0.270	0.324	0.378	0.432	5283	0.286	
24	Δu	0.016	0.031	0.047	0.078	0.156	0.313	0.469	0.625					3962	0.619	5.76
	Δc	0.013	0.025	0.038	0.063	0.125	0.250	0.375	0.500	0.625				3962	0.495	
30	Δu	0.037	0.075	0.112	0.187	0.374								2535	0.949	5.87
	Δc	0.024	0.048	0.072	0.120	0.240	0.479							3170	0.759	
36	Δu	0.077	0.154	0.231	0.385									1760	1.355	5.92
	Δc	0.041	0.082	0.123	0.205	0.410								2641	1.084	
42	Δu	0.142	0.283	0.425										1294	1.833	5.96
	Δc	0.065	0.129	0.194	0.324	0.647								2264	1.466	
48	Δu	0.241	0.482											990	2.384	5.98
	Δc	0.096	0.193	0.289	0.482									1981	1.908	
54	Δu	0.383												782	2.996	6.02
	Δc	0.136	0.272	0.409	0.681									1761	2.399	

Series	Bar Width	Open Space	% Open Area	Approx Wt.	I-in ³ /ft. of Width	S-in ³ /ft. of Width
HD 6000	.60	.90	60	4.9	0.40	0.80
HD 5000	.60	.60	50	5.9	0.50	1.00
HD 4000	.60	.40	40	7.0	0.60	1.20

Multippliers for Series Other Than HD-6000

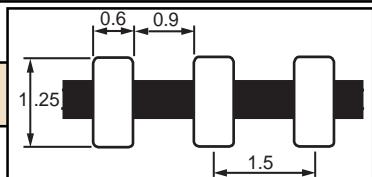
HD 5000 - Multiply Load Table Deflection by 0.80

HD 4000 - Multiply Load Table Deflection by 0.67

DURAGRID® HD-6000 1-1/4" Bearing Bar

$A = 6.0 \text{ in}^2$ $I = 0.781 \text{ in}^4$ $S = 1.24 \text{ in}^3$

SPAN INCHES		LOAD												SAFE LOAD 2:1 SAFETY FACTOR	DEFLECTION	$E \times 10^6$ PSI
		100	200	300	500	1000	2000	3000	4000	5000	6000	7000	8000			
12	Δu	0.001	0.001	0.002	0.003	0.006	0.012	0.018	0.024	0.030	0.035	0.041	0.047	15000	0.089	4.88
	Δc	0.001	0.002	0.003	0.005	0.009	0.019	0.028	0.038	0.047	0.057	0.066	0.076			
18	Δu	0.003	0.005	0.008	0.013	0.026	0.053	0.079	0.105	0.131	0.158	0.184	0.210	10000	0.263	5.55
	Δc	0.003	0.006	0.008	0.014	0.028	0.056	0.084	0.112	0.140	0.168	0.196	0.224			
24	Δu	0.008	0.016	0.024	0.040	0.081	0.161	0.242	0.322	0.403	0.484	0.564	0.645	7032	0.567	5.72
	Δc	0.006	0.013	0.019	0.032	0.064	0.129	0.193	0.258	0.322	0.387	0.451	0.516			
30	Δu	0.020	0.039	0.059	0.098	0.195	0.390	0.585						4500	0.878	5.77
	Δc	0.012	0.025	0.037	0.062	0.125	0.250	0.374	0.499	0.624						
36	Δu	0.040	0.080	0.121	0.201	0.402								3125	1.257	5.80
	Δc	0.021	0.043	0.064	0.107	0.215	0.429	0.644								
42	Δu	0.074	0.148	0.222	0.371									2296	1.703	5.83
	Δc	0.034	0.068	0.102	0.169	0.339	0.678									
48	Δu	0.125	0.251	0.376	0.627									1758	2.205	5.88
	Δc	0.050	0.100	0.151	0.251	0.502										
54	Δu	0.200	0.399	0.599										1389	2.772	5.92
	Δc	0.071	0.142	0.213	0.355											
60	Δu	0.302	0.604											1125	3.399	5.96
	Δc	0.097	0.193	0.290	0.483											



Series	Bar Width	Open Space	% Open Area	Approx Wt.	I-in ⁴ /ft. of Width	S-in ³ /ft. of Width
HD 6000	.60	.90	60	5.9	.781	1.25
HD 5000	.60	.60	50	7.2	.977	1.56
HD 4000	.60	.40	40	8.5	1.172	1.88

Multipliers for Series Other Than HD-6000

HD 5000 - Multiply Load Table Deflection by 0.80

HD 4000 - Multiply Load Table Deflection by 0.67

SPAN INCHES		LOAD												SAFE LOAD 2:1 SAFETY FACTOR	DEFLECTION	$E \times 10^6$ PSI
		100	200	300	500	1000	2000	3000	4000	5000	6000	7000	8000			
12	Δu	0.000	0.001	0.001	0.002	0.004	0.008	0.011	0.015	0.019	0.023	0.027	0.030	21000	0.080	4.38
	Δc	0.001	0.001	0.002	0.003	0.006	0.012	0.018	0.024	0.030	0.037	0.043	0.049			
18	Δu	0.002	0.003	0.005	0.008	0.016	0.031	0.047	0.063	0.079	0.094	0.110	0.126	14000	0.220	5.37
	Δc	0.002	0.003	0.005	0.008	0.017	0.034	0.050	0.067	0.084	0.101	0.117	0.134			
24	Δu	0.005	0.009	0.014	0.024	0.047	0.094	0.142	0.189	0.236	0.283	0.330	0.378	10500	0.496	5.65
	Δc	0.004	0.008	0.011	0.019	0.038	0.076	0.113	0.151	0.189	0.227	0.264	0.302			
30	Δu	0.011	0.023	0.034	0.057	0.113	0.226	0.340	0.453	0.566	0.679			6742	0.763	5.75
	Δc	0.007	0.014	0.022	0.036	0.072	0.145	0.217	0.290	0.362	0.435	0.507	0.580			
36	Δu	0.023	0.046	0.070	0.116	0.232	0.465	0.697						4682	1.088	5.81
	Δc	0.012	0.025	0.037	0.062	0.124	0.248	0.372	0.496	0.620						
42	Δu	0.043	0.086	0.128	0.214	0.428								3440	1.471	5.85
	Δc	0.020	0.039	0.059	0.098	0.195	0.391	0.586								
48	Δu	0.073	0.145	0.218	0.363									2634	1.911	5.88
	Δc	0.029	0.058	0.087	0.145	0.290	0.580									
54	Δu	0.115	0.231	0.346	0.577									2080	2.401	5.92
	Δc	0.041	0.082	0.123	0.205	0.410										
60	Δu	0.175	0.350	0.525										1685	2.950	5.95
	Δc	0.056	0.112	0.168	0.280	0.560										
66	Δu	0.255	0.510											1393	3.553	5.98
	Δc	0.074	0.148	0.223	0.371											
72	Δu	0.359	0.719											1170	4.205	6.01
	Δc	0.096	0.192	0.288	0.479											

Multipliers for Series Other Than HD-6000

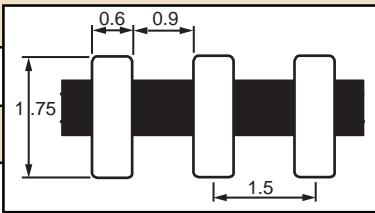
HD 5000 - Multiply Load Table Deflection by 0.80

HD 4000 - Multiply Load Table Deflection by 0.67

DURAGRID® HD-6000 1-3/4" Bearing Bar

A = 8.4 in² I = 2.14 in⁴ S = 2.45 in³

SPAN INCHES		LOAD										SAFE LOAD 2:1	SAFETY FACTOR	DEFLECTION E x 10 ⁶ PSI		
		100	200	300	500	1000	2000	3000	4000	5000	6000					
12	Δu	0.000	0.000	0.001	0.001	0.002	0.004	0.007	0.009	0.011	0.013	0.015	0.018	42000	0.092	4.80
	Δc	0.000	0.001	0.001	0.002	0.004	0.007	0.011	0.014	0.018	0.021	0.025	0.028	32668	0.114	
18	Δu	0.001	0.002	0.003	0.005	0.011	0.021	0.032	0.043	0.053	0.064	0.075	0.085	28000	0.299	4.99
	Δc	0.001	0.002	0.003	0.006	0.011	0.023	0.034	0.046	0.057	0.068	0.080	0.091	21800	0.248	
24	Δu	0.003	0.006	0.010	0.016	0.032	0.064	0.096	0.128	0.160	0.192	0.224	0.256	16334	0.523	5.25
	Δc	0.003	0.005	0.008	0.013	0.026	0.051	0.077	0.103	0.128	0.154	0.179	0.205	16334	0.419	
30	Δu	0.008	0.015	0.023	0.038	0.076	0.152	0.228	0.304	0.380	0.455	0.531	0.607	10454	0.794	5.41
	Δc	0.005	0.010	0.015	0.024	0.049	0.097	0.146	0.194	0.243	0.292	0.340	0.389	13067	0.635	
36	Δu	0.015	0.030	0.045	0.075	0.151	0.302	0.453	0.604	0.755	0.906	1.057	1.208	7260	1.096	5.64
	Δc	0.008	0.016	0.024	0.040	0.081	0.161	0.242	0.322	0.403	0.483	0.564	0.644	10889	0.877	
42	Δu	0.028	0.055	0.083	0.138	0.275	0.551							5334	1.469	5.73
	Δc	0.013	0.025	0.038	0.063	0.126	0.252	0.378	0.503	0.629				9334	1.175	
48	Δu	0.046	0.093	0.139	0.232	0.465								4084	1.899	5.79
	Δc	0.019	0.037	0.056	0.093	0.186	0.372	0.558						8167	1.519	
54	Δu	0.074	0.147	0.221	0.368	0.737								3226	2.378	5.85
	Δc	0.026	0.052	0.079	0.131	0.262	0.524							7260	1.902	
60	Δu	0.111	0.222	0.333	0.555									2613	2.900	5.92
	Δc	0.036	0.071	0.107	0.178	0.355								6534	2.321	
66	Δu	0.161	0.322	0.483										2160	3.481	5.97
	Δc	0.047	0.094	0.141	0.234	0.469								5940	2.785	
72	Δu	0.226	0.452	0.678										1815	4.101	6.03
	Δc	0.060	0.121	0.181	0.301	0.603								5445	3.281	
78	Δu	0.310	0.619											1546	4.788	6.06
	Δc	0.076	0.152	0.229	0.381									5026	3.832	



Series	Bar Width	Open Space	% Open Area	Approx Wt.	I-in ² /ft. of Width	S-in ³ /ft. of Width
HD 6000	.60	.90	60	8.0	2.14	2.45
HD 5000	.60	.60	50	9.8	2.68	3.06
HD 4000	.60	.40	40	11.6	3.22	3.68

Multipliers for Series Other Than HD-6000

HD 5000 - Multiply Load Table Deflection by 0.80
HD 4000 - Multiply Load Table Deflection by 0.67

SPAN INCHES		LOAD										SAFE LOAD 2:1	SAFETY FACTOR	DEFLECTION E x 10 ⁶ PSI		
		100	200	300	500	1000	2000	3000	4000	5000	6000					
12	Δu	0.000	0.000	0.001	0.001	0.002	0.003	0.005	0.007	0.009	0.010	0.012	0.014	48000	0.082	4.13
	Δc	0.000	0.001	0.001	0.001	0.003	0.005	0.008	0.011	0.014	0.016	0.019	0.022	42667	0.116	
18	Δu	0.001	0.002	0.002	0.004	0.008	0.015	0.023	0.030	0.038	0.046	0.053	0.061	32000	0.244	4.67
	Δc	0.001	0.002	0.002	0.004	0.008	0.016	0.024	0.033	0.041	0.049	0.057	0.065	28445	0.231	
24	Δu	0.002	0.004	0.007	0.011	0.022	0.044	0.066	0.088	0.109	0.131	0.153	0.175	21334	0.467	5.14
	Δc	0.002	0.004	0.005	0.009	0.018	0.035	0.053	0.070	0.088	0.105	0.123	0.140	21334	0.374	
30	Δu	0.005	0.010	0.015	0.025	0.050	0.100	0.151	0.201	0.251	0.301	0.351	0.402	13654	0.686	5.47
	Δc	0.003	0.006	0.010	0.016	0.032	0.064	0.096	0.129	0.161	0.193	0.225	0.257	17067	0.548	
36	Δu	0.010	0.020	0.030	0.050	0.101	0.202	0.302	0.403	0.504	0.605	0.706		9482	0.956	5.65
	Δc	0.005	0.011	0.016	0.027	0.054	0.108	0.161	0.215	0.269	0.323	0.376	0.430	14223	0.765	
42	Δu	0.019	0.037	0.056	0.093	0.186	0.372	0.557	0.743					6966	1.294	5.68
	Δc	0.008	0.017	0.025	0.042	0.085	0.170	0.255	0.340	0.425	0.510	0.594	0.679	12190	1.035	
48	Δu	0.032	0.063	0.095	0.158	0.315	0.630							5333	1.681	5.71
	Δc	0.013	0.025	0.038	0.063	0.126	0.252	0.378	0.504	0.630				10667	1.345	
54	Δu	0.050	0.101	0.151	0.252	0.504								4214	2.124	5.72
	Δc	0.018	0.036	0.054	0.090	0.179	0.358	0.538						9482	1.699	
60	Δu	0.077	0.153	0.230	0.383									3413	2.618	5.73
	Δc	0.025	0.049	0.074	0.123	0.245	0.491							8534	2.094	
66	Δu	0.112	0.224	0.336	0.559									2821	3.157	5.75
	Δc	0.033	0.065	0.098	0.163	0.326	0.651							7758	2.525	
72	Δu	0.158	0.316	0.474	0.790									2370	3.743	5.77
	Δc	0.042	0.084	0.126	0.211	0.421								7111	2.995	
78	Δu	0.217	0.434	0.650										2020	4.379	5.79
	Δc	0.053	0.107	0.160	0.267	0.534								6565	3.503	
84	Δu	0.290	0.580											1742	5.053	5.82
	Δc	0.066	0.133	0.199	0.332	0.663								6095	4.041	

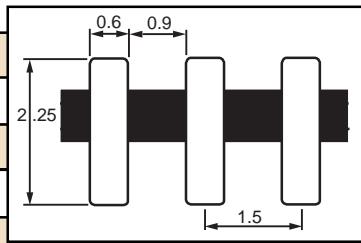
Multipliers for Series Other Than HD-6000

HD 5000 - Multiply Load Table Deflection by 0.80
HD 4000 - Multiply Load Table Deflection by 0.67

DURAGRID® HD-6000 2-1/4" Bearing Bar

$A = 10.8 \text{ in}^2$ $I = 4.56 \text{ in}^4$ $S = 4.05 \text{ in}^3$

SPAN INCHES	LOAD											SAFE LOAD 2:1	SAFETY FACTOR	DEFLECTION	$E \times 10^6$ PSI	
	100	200	300	500	1000	2000	3000	4000	5000	6000	7000					
12	Δu Δc	0.000 0.000	0.000 0.001	0.001 0.001	0.001 0.002	0.003 0.004	0.004 0.006	0.005 0.009	0.007 0.011	0.008 0.013	0.009 0.015	0.011 0.017	54000 54000	0.072 0.115	3.70	
18	Δu Δc	0.001 0.001	0.002 0.002	0.003 0.003	0.006 0.012	0.012 0.019	0.017 0.025	0.023 0.031	0.029 0.037	0.035 0.043	0.041 0.050	0.046 0.050	36000 36000	0.209 0.223	4.30	
24	Δu Δc	0.002 0.001	0.003 0.003	0.005 0.006	0.016 0.013	0.032 0.026	0.048 0.038	0.064 0.051	0.080 0.064	0.096 0.077	0.112 0.089	0.128 0.102	27000 27000	0.431 0.345	4.94	
30	Δu Δc	0.004 0.002	0.007 0.005	0.011 0.007	0.018 0.011	0.036 0.023	0.072 0.046	0.107 0.069	0.143 0.092	0.179 0.114	0.215 0.137	0.250 0.160	0.286 0.183	17280 21600	0.618 0.494	5.39
36	Δu Δc	0.007 0.004	0.014 0.008	0.021 0.011	0.036 0.019	0.071 0.038	0.143 0.076	0.214 0.114	0.285 0.152	0.357 0.190	0.428 0.228	0.500 0.266	0.571 0.305	12000 18000	0.856 0.685	5.60
42	Δu Δc	0.013 0.006	0.026 0.012	0.039 0.018	0.066 0.030	0.131 0.060	0.262 0.120	0.393 0.180	0.524 0.240	0.655 0.300	0.419 0.359	0.479 0.359		8816 15428	1.155 0.924	5.65
48	Δu Δc	0.022 0.009	0.044 0.018	0.066 0.026	0.110 0.044	0.220 0.088	0.440 0.176	0.660 0.264	0.352 0.440	0.440 0.528	0.528 0.616		6750 13500	1.485 1.188	5.74	
54	Δu Δc	0.035 0.012	0.070 0.025	0.105 0.037	0.176 0.062	0.351 0.125	0.250 0.250	0.375 0.375	0.500 0.500	0.624 0.624			5333 12000	1.873 1.499	5.76	
60	Δu Δc	0.053 0.017	0.107 0.034	0.160 0.051	0.267 0.085	0.534 0.171	0.341 0.341	0.512 0.512	0.683 0.683				4320 10800	2.305 1.844	5.78	
66	Δu Δc	0.078 0.023	0.155 0.045	0.233 0.068	0.389 0.113	0.226 0.226	0.452 0.452	0.678 0.678					3570 9818	2.774 2.220	5.81	
72	Δu Δc	0.110 0.029	0.219 0.058	0.329 0.088	0.548 0.146	0.292 0.292	0.585 0.585						3000 9000	3.291 2.632	5.83	
78	Δu Δc	0.151 0.037	0.301 0.074	0.452 0.111	0.185 0.185	0.371 0.371							2556 8307	3.848 3.079	5.85	
84	Δu Δc	0.201 0.046	0.403 0.092	0.604 0.138	0.230 0.230	0.461 0.461							2204 7714	4.441 3.553	5.88	
90	Δu Δc	0.265 0.056	0.529 0.113	0.169 0.169	0.282 0.282	0.565 0.565							1920 7200	5.081 4.064	5.90	
96	Δu Δc	0.341 0.068	0.683 0.137	0.205 0.205	0.341 0.341	0.683 0.683							1688 6756	5.763 4.613	5.92	



Series	Bar Width	Open Space	% Open Area	Approx Wt.	I-in ⁴ /ft. of Width	S-in ³ /ft. of Width
HD 6000	.60	.90	60	10.1	4.56	4.05
HD 5000	.60	.60	50	12.4	5.70	5.06
HD 4000	.60	.40	40	14.7	6.83	6.07

Multipliers for Series Other Than HD-6000

HD 5000 - Multiply Load Table Deflection by 0.80
HD 4000 - Multiply Load Table Deflection by 0.67

SPAN INCHES	LOAD											SAFE LOAD 2:1	SAFETY FACTOR	DEFLECTION	$E \times 10^6$ PSI	
	100	200	300	500	1000	2000	3000	4000	5000	6000	7000					
12	Δu Δc	0.000 0.000	0.000 0.001	0.001 0.001	0.001 0.002	0.002 0.004	0.003 0.006	0.005 0.007	0.006 0.009	0.007 0.011	0.008 0.013	0.009 0.015	60000 60000	0.069 0.110	3.13	
18	Δu Δc	0.000 0.000	0.001 0.001	0.001 0.002	0.005 0.005	0.009 0.010	0.014 0.015	0.019 0.020	0.023 0.025	0.028 0.030	0.033 0.035	0.037 0.040	40000 44445	0.187 0.222	3.90	
24	Δu Δc	0.001 0.001	0.003 0.002	0.004 0.003	0.006 0.005	0.013 0.010	0.025 0.020	0.038 0.030	0.051 0.041	0.063 0.051	0.076 0.061	0.089 0.071	30000 33334	0.381 0.338	4.54	
30	Δu Δc	0.003 0.002	0.006 0.004	0.008 0.005	0.014 0.009	0.028 0.018	0.056 0.036	0.084 0.053	0.111 0.071	0.139 0.089	0.167 0.107	0.195 0.125	21334 26667	0.594 0.475	5.05	
36	Δu Δc	0.005 0.003	0.011 0.006	0.016 0.009	0.027 0.014	0.054 0.029	0.108 0.058	0.162 0.086	0.216 0.115	0.270 0.144	0.324 0.173	0.378 0.202	14815 22223	0.800 0.640	5.40	
42	Δu Δc	0.010 0.004	0.019 0.009	0.029 0.013	0.049 0.022	0.097 0.044	0.195 0.089	0.292 0.133	0.389 0.178	0.487 0.222	0.584 0.267	0.681 0.311	10885 19048	1.060 0.848	5.55	
48	Δu Δc	0.016 0.007	0.033 0.013	0.049 0.020	0.082 0.033	0.164 0.066	0.329 0.131	0.493 0.197	0.657 0.263	0.840 0.329	0.944 0.394	0.681 0.460	8334 16667	1.369 1.095	5.61	
54	Δu Δc	0.026 0.009	0.052 0.019	0.078 0.028	0.131 0.046	0.261 0.093	0.523 0.186	0.216 0.279	0.384 0.372	0.523 0.464	0.623 0.557	0.681 0.650		6584 14815	1.720 1.376	5.65
60	Δu Δc	0.040 0.013	0.079 0.025	0.119 0.038	0.198 0.063	0.397 0.127	0.579 0.254	0.811 0.381	0.108 0.0508	0.139 0.0635			5333 13333	2.116 1.693	5.67	
66	Δu Δc	0.058 0.017	0.116 0.034	0.174 0.051	0.289 0.084	0.579 0.168	1.02 0.337	1.62 0.505	2.08 0.674				4408 12122	2.552 2.042	5.69	
72	Δu Δc	0.082 0.022	0.163 0.044	0.245 0.065	0.408 0.109	0.81 0.218	1.68 0.435	2.48 0.653					3704 11111	3.021 2.417	5.72	
78	Δu Δc	0.112 0.028	0.224 0.055	0.335 0.083	0.559 0.138	1.09 0.275	2.18 0.550	3.59 0.825					3156 10257	3.527 2.822	5.75	
84	Δu Δc	0.150 0.034	0.299 0.068	0.449 0.103	0.711 0.171	1.34 0.342	2.68 0.684						2721 9524	4.069 3.255	5.78	
90	Δu Δc	0.196 0.042	0.393 0.084	0.589 0.126	0.951 0.209	1.81 0.419							2370 8889	4.654 3.724	5.80	
96	Δu Δc	0.253 0.051	0.506 0.101	0.152 0.152	0.253 0.253	0.506 0.506							2083 8334	5.268 4.216	5.83	
102	Δu Δc	0.321 0.060	0.641 0.121	0.181 0.181	0.302 0.302	0.604 0.604							1845 7843	5.917 4.734	5.86	

Series	Bar Width	Open Space	% Open Area	Approx Wt.	I-in ⁴ /ft. of Width	S-in ³ /ft. of Width
HD 6000	.60	.90	60	11.1	6.25	5.00
HD 5000	.60	.60	50	13.7	7.81	6.25
HD 4000	.60	.40	40	16.3	9.38	7.50

Multipliers for Series Other Than HD-6000

HD 5000 - Multiply Load Table Deflection by 0.80
HD 4000 - Multiply Load Table Deflection by 0.67

Specifications

How to Specify DURADEK® and DURAGRID®

Fiberglass grating shall be (select one):

DURADEK® Series (I-6000 1") (I-6000 1-1/2") (T-5000 2") as manufactured by Strongwell–Chatfield Division, Chatfield, Minnesota.

DURAGRID® as manufactured by Strongwell–Chatfield Division, Chatfield, Minnesota. Grating panels shall be made of (1") (1-1/4") (1-1/2") (2") deep pultruded (T) (I) bars.

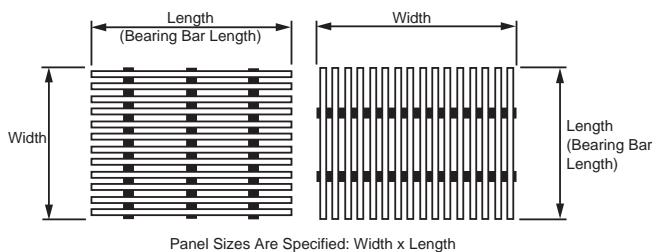
DURAGRID® Heavy Duty as manufactured by Strongwell–Chatfield Division, Chatfield, Minnesota. Grating panels shall be made of (1") (1-1/4") (1-1/2") (1-3/4") (2") (2-1/4") (2-1/2") deep pultruded (HD) bars.

The bearing bars shall be spaced at _____ inches on center. Resin shall be fire retardant (polyester) (vinyl ester) meeting the requirements of a Class 1 rating of 25 or less per ASTM E-84 and meets the self-extinguishing requirements of ASTM D-635. Color shall be (gray) (yellow). Resin shall be UV inhibited and the composite shall include a veil on all exposed surfaces. Panels shall be assembled into the sizes ordered using a 3-piece pultruded cross-rod system.

The cross-rods shall consist of a center core wedge and 2 spacer bars that are notched at each bearing bar so that each bearing bar is both mechanically locked and chemically bonded to the web of each bearing bar. The spacer bars shall be continually bonded to the center core wedge. The cross-rods shall be spaced a maximum of (6") (12") in the panel. The top of the panels (shall) (shall not) be covered with a bonded grit anti-skid surface.

NOTE: If special options are required that are not stated in the above specification, fill in your special requirement in the appropriate section.

How to Order

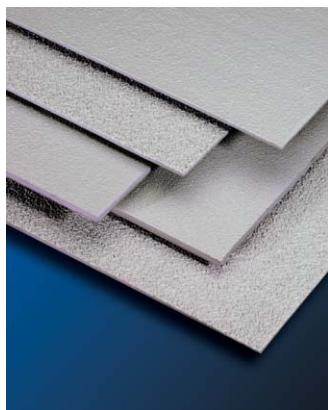


When ordering DURADEK® or DURAGRID®, make sure the bearing bars in the panel are oriented in the correct direction for the application. Bearing bars should traverse from support to support. Cross-rods are not intended to be applied in the span direction. The adjacent drawing will help you specify the width and length of panels. NOTE: Width is the measurement from end to end of the cross-rods. Length is always the bearing bar length.

Options

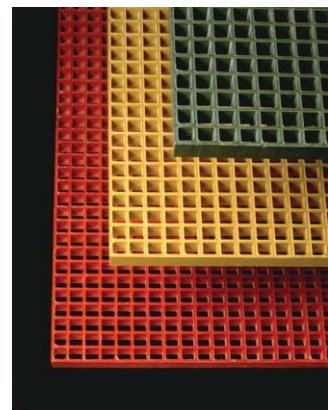
Strongwell offers a broad range of fiberglass decking and flooring materials. A brief description of the other available flooring products in the Strongwell industrial product line is shown here. Full-color brochures are available for each individual product.

SAFPLATE®



SAFPLATE®, a solid anti-skid flooring, helps reduce worker slips and falls in both wet and dry applications.

DURAGRATE®



DURAGRATE® molded grating has a concave profile on the upper surface for skid resistance. Grit tops are optional.

SAFPLANK®



SAFPLANK®, a system of interlocking planks, provides easy installation and superior corrosion resistance for applications requiring a solid deck or floor.

COMPOSOLITE®



COMPOSOLITE® building panels are suitable for major load bearing structural applications and are particularly well-suited to outdoor use and corrosive environments.

NOTE: COMPOSOLITE® is a registered trademark of Maunsell Structural Plastics, Ltd. and used by Strongwell Corporation pursuant to license.



STRONGWELL

ISO-9001 Certified Manufacturing Plants

BRISTOL DIVISION

400 Commonwealth Ave., P.O. Box 580, Bristol, VA 24201-3820 USA
(276)645-8000 FAX (276)645-8132

www.strongwell.com

CHATFIELD DIVISION*

1610 Highway 52 South, Chatfield, MN 55923-9799 USA
(507)867-3479 FAX (507)867-4031

*DURADEK®/DURAGRID® manufacturing location