



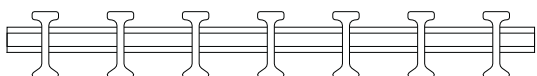
GEF Incorporated
Innovative Solutions in Fiberglass

DURA ***DEK***

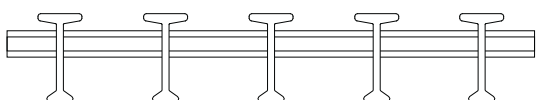
PULTRUDED FIBERGLASS GRATING



I-6500 1"



I-6500 1-1/2"



T-5800 2"



HIGH STRENGTH PULTRUDED FIBERGLASS GRATING



What is DURADEK®?

DURADEK® is high strength pultruded bar grating made exclusively in the U.S.A. that can be used like traditional metal grates or fiberglass molded grating but offers the inherent benefits of pultrusion. DURADEK® is an ideal replacement for steel, aluminum, or molded fiberglass gratings anywhere frequent grating and walkway replacement costs are unacceptable.

DURADEK® is stocked and available with bearing bars in 1" or 1-1/2" thick I-shapes or a 2" thick T-shape. 1" and 1-1/2" thick panels can be purchased in 3'x10', 4'x8', 4'x12', 5'x10', 3'x20', 4'x20' or 5'x20' sizes. 2" thick panels can be purchased in 4'x12', 5'x10', 3'x20', 4'x20' or 5'x20' sizes. All sizes of DURADEK® grating are available with a flame retardant polyester or vinyl ester resin system with bearing bars in a light gray or yellow color. All panels offer cross-rods spaced 8" on center and are either light gray (polyester) or black (vinyl ester).

Why Use DURADEK®?

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

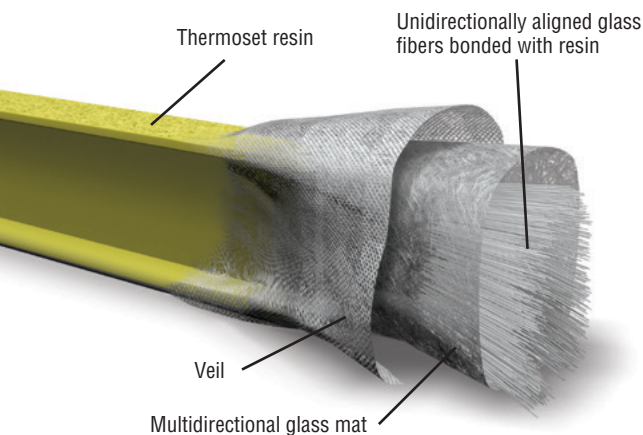
Features

- Corrosion Resistant
- Structurally Strong
- High Impact and Fatigue Strength
- Lightweight
- Fire Retardant
- Easy to Fabricate and Install
- Low Maintenance
- Low Electrical and Thermal Conductivity
- Resistant to Chipping and Cracking
- Aesthetically Pleasing Appearance
- Skid Resistant
- Non-Sparking

Materials of Construction

DURADEK® 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.

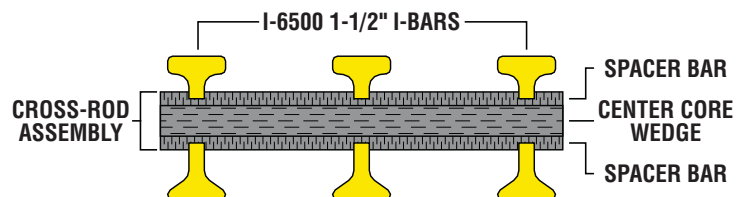


Three-Piece Cross-Rod Assembly

The 3-piece cross-rod assembly used in DURADEK® 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.



TECHNICAL DATA

Shapes, Sizes and Availability

SERIES	BEARING BAR THICKNESS	NO. BARS PER FT. WIDTH	BEARING BAR CENTER	OPEN SPACE	OPEN AREA	APPROX. WEIGHT PER FT ²	CROSS-SECTIONAL AREA (PER FT. OF WIDTH)	MOMENT OF INERTIA (PER FT. OF WIDTH)	SECTION MODULUS (PER FT. OF WIDTH)
I-6500	1.0"	7	1.71"	1.11"	65%	2.2 lb	2.190 in ²	0.288 in ⁴	0.575 in ³
I-6500	1.5"	7	1.71"	1.11"	65%	2.7 lb	2.752 in ²	0.814 in ⁴	1.088 in ³
T-5800	2.0"	5	2.40"	1.40"	58%	2.6 lb	2.711 in ²	1.396 in ⁴	top: 1.588 in ³ bottom: 1.247 in ³

How to Specify DURADEK®

Fiberglass grating shall be DURADEK® Series (I-6500 1") (I-6500 1-½") (T-5800 2") as manufactured by Strongwell. Grating shall be pultruded and assembled in the U.S.A. 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 the self-extinguishing requirements of ASTM D-635. Bearing bar color shall be (light 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 with color correlating with chosen resin system: polyester = light gray, vinyl ester = black.

The cross-rods shall consist of a center core wedge and two 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 8" in the panel. The top of the panels shall be covered with a bonded epoxy medium 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.

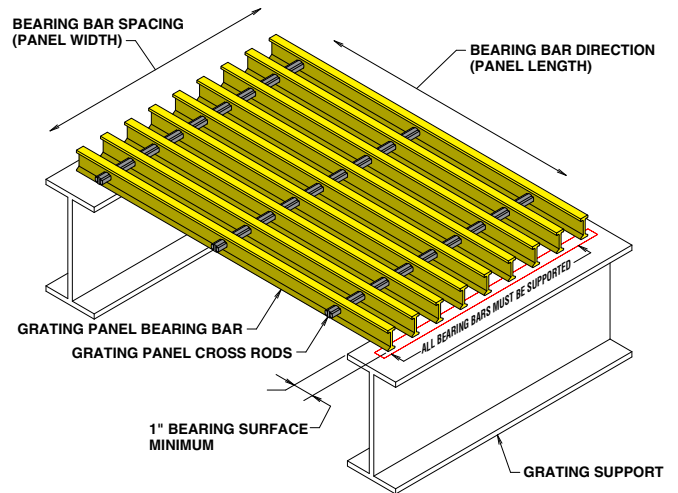
How to Order

When ordering DURADEK®, ensure the bearing bars for installation will be oriented in the correct direction for the application. Bearing bars shall traverse from support to support. Cross-rods are not intended to be applied in the span direction. The adjacent drawing will help 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.

Panel Sizes Are Specified: Width x Length

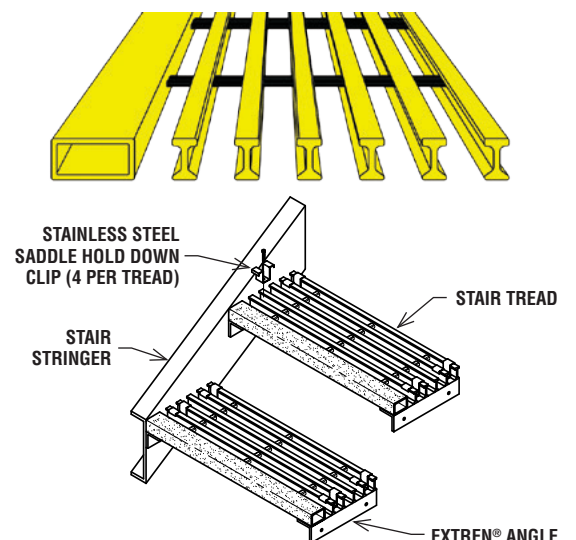
NOTE: DURAGRID®, Strongwell's line of custom pultruded grating, is available with a wide array of options, including: colors, resin systems, panel sizes, cross rod spacings and more.



NOSINGS FOR STAIR TREADS AND LANDINGS

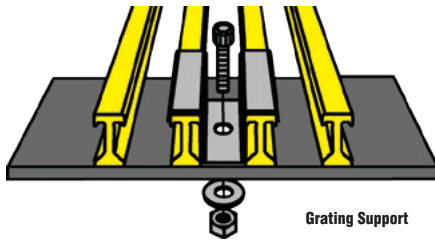
DURAGRID® pultruded stair treads and landings are produced by attaching a 2" deep nosing to the leading edge. This gives added strength and rigidity to the area that takes the most impact and abuse. In addition, the nosing provides more surface area for skid resistance, wear and better visibility. Light 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" Light Gray or Yellow	I-6000 1"	29"	37"
11" Light Gray or Yellow	I-6000 1-1/2"	40"	52"
12" Light Gray or Yellow	T-5000 2"	47"	59"



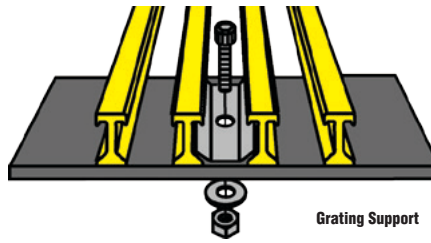
ACCESSORIES

Panel Hold Downs



Weldable 316L stainless steel saddle clips are available for all DURADEK® grating series.

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

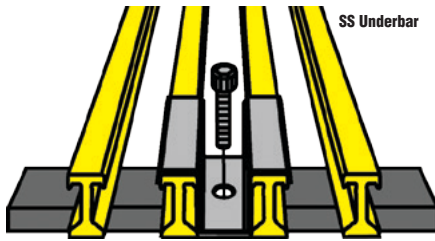


Weldable 316L stainless steel insert clips are available for all DURADEK® grating series.

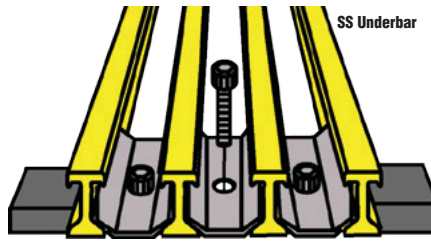
**Bolts are priced separately from the hold-down.*

Panel Connectors

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

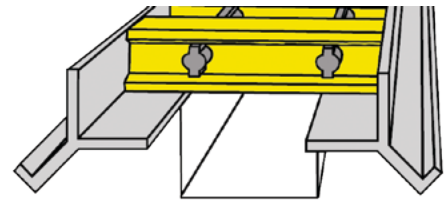


316L stainless steel saddle clips are available as panel connectors for all DURADEK® grating series.



Insert clip hold-downs are available for all DURADEK® grating series.

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® products. Corrosion resistant Fiberglass Curb Angles are available for 1", 1-1/2" and 2" grating panel thicknesses in gray fire retardant vinyl ester.

USING THE LOAD/DEFLECTION TABLES

Series Designation

The series designation indicates the bar size and shape and the percent of open area. For example: T-5800 2" means 2" T-bar spaced to give a 58% open area.

Load Table Data

Deflection values are based upon minimum apparent modulus (E) per span. Maximum Recommended Load data was calculated by the Strongwell Test Lab. See FGMC/ANSI Grating Manual for additional information regarding apparent modulus.

STATISTICAL REPORTING METHODS

Minimum Value

A value that is a specified distance from the average. The most common specified distance is three standard deviations.

Characteristic Value

As defined by ASTM D7290, a value that is normally between two and three standard deviations from the average.

Average Value

The sum of a list of values divided by the number of values in the list, without consideration for standard deviations.

Typical Value

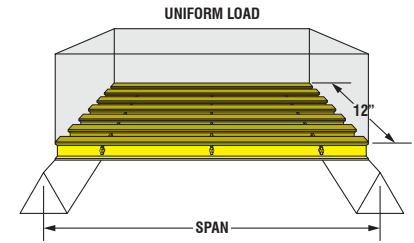
No definition. Not recommended for use by Professional Engineers. Can be any value the manufacturer chooses.

NOTE: Strongwell recommends the use of minimum or characteristic values for design calculations.

DURADEK® PULTRUDED GRATING

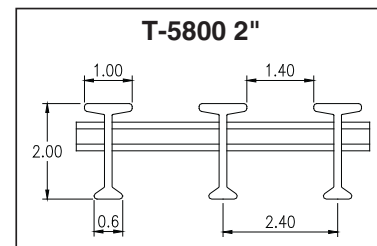
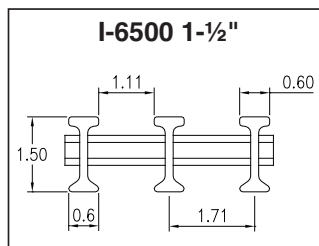
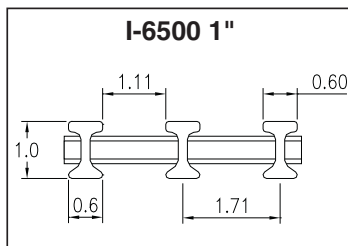
Uniform Load (Deflection in Inches)

NOTE: The red area () indicates where the load produces $\leq 0.25"$ deflection.



LOAD in LB / SQUARE FOOT (PSF)

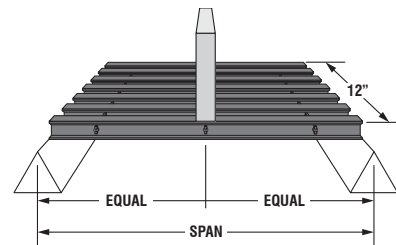
SPAN INCHES	STYLE																		MAXIMUM RECOM- MENDED LOAD (PSF)	DEFLEC- TION	E X 10 ⁶ PSI
	SERIES	DEPTH	50	100	150	200	250	300	400	500	750	1000	2000	3000	4000	5000	6000				
12	I-6500	1"	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.04	0.06	0.08			9123	0.19	3.78	
	I-6500	1-½"	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.02	0.02	0.03	0.04	0.04	15439	0.11	3.79	
	T-5800	2"	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.02			9444	0.04	3.80	
18	I-6500	1"	0.01	0.01	0.01	0.02	0.02	0.03	0.04	0.05	0.07	0.10	0.19	0.29	0.38			4346	0.41	4.15	
	I-6500	1-½"	<0.01	<0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.03	0.04	0.07	0.10	0.14	0.17	0.21	6862	0.24	4.05	
	T-5800	2"	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.04	0.06	0.08			6280	0.13	3.91	
24	I-6500	1"	0.01	0.03	0.04	0.06	0.07	0.09	0.11	0.14	0.21	0.28	0.57					2544	0.72	4.41	
	I-6500	1-½"	0.01	0.01	0.02	0.02	0.03	0.03	0.04	0.05	0.08	0.10	0.21	0.31				3860	0.40	4.24	
	T-5800	2"	<0.01	0.01	0.01	0.01	0.02	0.02	0.03	0.03	0.05	0.06	0.13	0.19	0.25			4722	0.30	4.01	
30	I-6500	1"	0.03	0.07	0.10	0.13	0.17	0.20	0.26	0.33	0.49	0.66						1628	1.07	4.63	
	I-6500	1-½"	0.01	0.03	0.04	0.05	0.06	0.07	0.10	0.12	0.18	0.25	0.49					2433	0.60	4.40	
	T-5800	2"	0.01	0.02	0.02	0.03	0.04	0.05	0.06	0.08	0.11	0.15	0.30	0.45				3022	0.45	4.10	
36	I-6500	1"	0.07	0.13	0.20	0.26	0.33	0.39	0.52	0.66								1130	1.48	4.83	
	I-6500	1-½"	0.03	0.05	0.08	0.10	0.12	0.15	0.20	0.25	0.37	0.50						1663	0.83	4.50	
	T-5800	2"	0.02	0.03	0.05	0.06	0.08	0.09	0.12	0.15	0.23	0.30	0.61					2099	0.64	4.18	
42	I-6500	1"	0.12	0.24	0.36	0.48	0.60											827	1.99	4.88	
	I-6500	1-½"	0.05	0.09	0.14	0.18	0.23	0.27	0.36	0.45	0.68							1194	1.08	4.59	
	T-5800	2"	0.03	0.06	0.08	0.11	0.14	0.17	0.22	0.28	0.42	0.55						1542	0.85	4.25	
48	I-6500	1"	0.20	0.40	0.60													630	2.53	4.98	
	I-6500	1-½"	0.08	0.15	0.23	0.30	0.38	0.46	0.61									892	1.35	4.66	
	T-5800	2"	0.05	0.09	0.14	0.19	0.23	0.28	0.37	0.46								1181	1.09	4.34	
54	I-6500	1"	0.32	0.64														496	3.18	5.00	
	I-6500	1-½"	0.12	0.24	0.36	0.48	0.60											681	1.64	4.71	
	T-5800	2"	0.07	0.15	0.22	0.29	0.36	0.44	0.58									933	1.36	4.41	
60	I-6500	1-½"	0.18	0.36	0.55													533	1.94	4.74	
	T-5800	2"	0.11	0.22	0.33	0.44	0.55	0.66										756	1.66	4.47	
66	I-6500	1-½"	0.27	0.53														425	2.26	4.76	
	T-5800	2"	0.16	0.32	0.48	0.63												624	1.98	4.52	
72	T-5800	2"	0.22	0.44	0.67													524	2.33	4.58	
78	T-5800	2"	0.30	0.61														447	2.71	4.61	



DURADEK® PULTRUDED GRATING

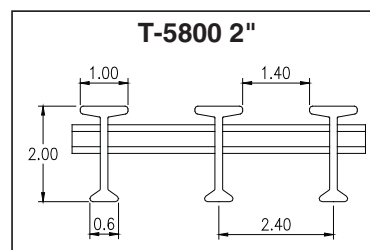
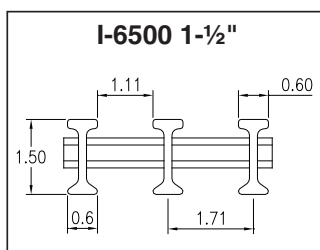
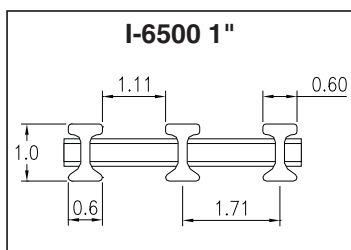
Concentrated Line Load (Deflection in Inches)

NOTE: The red area () indicates where the load produces $\leq 0.25"$ deflection.



LOAD in LB / FOOT of WIDTH (PSF)

SPAN INCHES	STYLE																		MAXIMUM RECOM- MENDED LOAD (PSF)	DEFLEC- TION	E X 10 ⁶ PSI
	SERIES	DEPTH	50	100	150	200	250	300	400	500	750	1000	2000	3000	4000	5000	6000				
12	I-6500	1"	<0.01	<0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.03	0.03	0.07	0.10	0.13			4561	0.15	3.78	
	I-6500	1-½"	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.01	0.01	0.02	0.04	0.05	0.06	0.07	7719	0.09	3.79	
	T-5800	2"	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.01	0.02	0.03			4722	0.03	3.80	
18	I-6500	1"	0.01	0.01	0.02	0.02	0.03	0.03	0.04	0.05	0.08	0.10	0.20	0.31				3259	0.33	4.15	
	I-6500	1-½"	<0.01	<0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.03	0.04	0.07	0.11	0.15	0.18		5146	0.19	4.05	
	T-5800	2"	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.04	0.07	0.09			4722	0.10	3.91	
24	I-6500	1"	0.01	0.02	0.03	0.05	0.06	0.07	0.09	0.11	0.17	0.23	0.45					2544	0.58	4.41	
	I-6500	1-½"	0.01	0.01	0.01	0.02	0.02	0.03	0.03	0.04	0.06	0.08	0.17	0.25				3860	0.32	4.24	
	T-5800	2"	<0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.03	0.04	0.05	0.10	0.15	0.20			4722	0.24	4.01	
30	I-6500	1"	0.02	0.04	0.06	0.08	0.11	0.13	0.17	0.21	0.32	0.42						2035	0.86	4.63	
	I-6500	1-½"	0.01	0.02	0.02	0.03	0.04	0.05	0.06	0.08	0.12	0.16	0.31	0.47				3041	0.48	4.40	
	T-5800	2"	0.01	0.01	0.01	0.02	0.02	0.03	0.04	0.05	0.07	0.10	0.19	0.29				3778	0.36	4.10	
36	I-6500	1"	0.04	0.07	0.11	0.14	0.18	0.21	0.28	0.35	0.52							1696	1.19	4.83	
	I-6500	1-½"	0.01	0.03	0.04	0.05	0.07	0.08	0.11	0.13	0.20	0.27	0.53					2495	0.66	4.50	
	T-5800	2"	0.01	0.02	0.02	0.03	0.04	0.05	0.07	0.08	0.12	0.16	0.32	0.49				3148	0.51	4.18	
42	I-6500	1"	0.06	0.11	0.17	0.22	0.28	0.33	0.44	0.55								1447	1.59	4.88	
	I-6500	1-½"	0.02	0.04	0.06	0.08	0.10	0.12	0.17	0.21	0.31	0.41						2088	0.86	4.59	
	T-5800	2"	0.01	0.03	0.04	0.05	0.06	0.08	0.10	0.13	0.19	0.25	0.51					2698	0.68	4.25	
48	I-6500	1"	0.08	0.16	0.24	0.32	0.40	0.48	0.64									1260	2.02	4.98	
	I-6500	1-½"	0.03	0.06	0.09	0.12	0.15	0.18	0.24	0.30	0.46	0.61						1784	1.08	4.66	
	T-5800	2"	0.02	0.04	0.06	0.07	0.09	0.11	0.15	0.19	0.28	0.37						2361	0.87	4.34	
54	I-6500	1"	0.11	0.23	0.34	0.46	0.57	0.68										1117	2.55	5.00	
	I-6500	1-½"	0.04	0.09	0.13	0.17	0.21	0.26	0.34	0.43	0.64							1533	1.31	4.71	
	T-5800	2"	0.03	0.05	0.08	0.10	0.13	0.16	0.21	0.26	0.39	0.52						2099	1.09	4.41	
60	I-6500	1-½"	0.06	0.12	0.18	0.23	0.30	0.35	0.47	0.58								1333	1.56	4.74	
	T-5800	2"	0.04	0.07	0.11	0.14	0.18	0.21	0.28	0.35	0.53							1889	1.32	4.47	
66	I-6500	1-½"	0.08	0.16	0.23	0.31	0.39	0.46	0.62									1170	1.81	4.76	
	T-5800	2"	0.05	0.09	0.14	0.19	0.23	0.28	0.37	0.46								1717	1.58	4.52	
72	T-5800	2"	0.06	0.12	0.18	0.24	0.30	0.36	0.47	0.59								1574	1.86	4.58	
78	T-5800	2"	0.08	0.15	0.22	0.30	0.37	0.45	0.60									1453	2.17	4.61	





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