

Stainless Steel Bar Grating

7 Space Load Table

Use this table when evaluating spans and loads for the following types of stainless steel grating:
7-DTS-4, 7-DTS-2

Bearing Bar Size	Approx. Weight psf *	Maximum Pedestrian Span**		Unsupported Span															
				2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	8'-0"	9'-0"			
3/4 x 3/16	13.9	4'-10"	U	1,607	1,029	714	525	402	318	257	All loads and deflections are theoretical and based upon the gross sections of the bearing bars, using a fiber stress of 20,000 psi. The values are not intended to be absolute since the actual load capacity will be affected by the slight variations in mill and manufacturing tolerances. Grating for spans to the left of the heavy line have a deflection ≤ 1/4" for uniform loads of 100 psf.								
			D	0.114	0.179	0.257	0.350	0.457	0.579	0.714									
			C	1,607	1,286	1,071	918	804	714	643									
			D	0.091	0.143	0.206	0.280	0.366	0.463	0.571									
1 x 1/8	12.4	5'-5"	U	1,905	1,219	847	622	476	376	305	252	Grating for spans to the left of the heavy line have a deflection ≤ 1/4" for uniform loads of 100 psf.							
			D	0.086	0.134	0.193	0.263	0.343	0.434	0.536	0.648								
			C	1,905	1,524	1,270	1,088	952	847	762	693								
			D	0.069	0.107	0.154	0.210	0.274	0.347	0.429	0.519								
1 x 3/16	18.3	6'-0"	U	2,857	1,829	1,270	933	714	564	457	378	318	271	U = Safe Uniform Load in pounds/sq. ft. C = Concentrated Load in pounds/ft. of grating width D = Deflection in inches					
			D	0.086	0.134	0.193	0.263	0.343	0.434	0.536	0.648								
			C	2,857	2,286	1,905	1,633	1,429	1,270	1,143	1,039								
			D	0.069	0.107	0.154	0.210	0.274	0.347	0.429	0.519								
1-1/4 x 1/8	15.3	6'-5"	U	2,976	1,905	1,323	972	744	588	476	394	331	282	U = Safe Uniform Load in pounds/sq. ft. C = Concentrated Load in pounds/ft. of grating width D = Deflection in inches					
			D	0.069	0.107	0.154	0.210	0.274	0.347	0.429	0.519								
			C	2,976	2,381	1,984	1,701	1,488	1,323	1,191	1,082								
			D	0.055	0.086	0.123	0.168	0.219	0.278	0.343	0.429								
1-1/4 x 3/16	22.7	7'-1"	U	4,464	2,857	1,984	1,458	1,116	882	714	590	496	423	364	279	U = Safe Uniform Load in pounds/sq. ft. C = Concentrated Load in pounds/ft. of grating width D = Deflection in inches			
			D	0.069	0.107	0.154	0.210	0.274	0.347	0.429	0.519								
			C	4,464	3,571	2,976	2,551	2,232	1,984	1,786	1,623								
			D	0.055	0.086	0.123	0.168	0.219	0.278	0.343	0.415								
1-1/2 x 1/8	18.3	7'-4"	U	4,286	2,743	1,905	1,399	1,071	847	686	567	476	406	350	288	212	U = Safe Uniform Load in pounds/sq. ft. C = Concentrated Load in pounds/ft. of grating width D = Deflection in inches		
			D	0.057	0.089	0.129	0.175	0.229	0.289	0.357	0.432								
			C	4,286	3,429	2,857	2,449	2,143	1,905	1,714	1,558								
			D	0.046	0.071	0.103	0.140	0.183	0.231	0.286	0.346								
1-1/2 x 3/16	27.2	8'-2"	U	6,429	4,114	2,857	2,099	1,607	1,270	1,029	850	714	609	525	402	318	U = Safe Uniform Load in pounds/sq. ft. C = Concentrated Load in pounds/ft. of grating width D = Deflection in inches		
			D	0.057	0.089	0.129	0.175	0.229	0.289	0.357	0.432								
			C	6,429	5,143	4,286	3,674	3,214	2,857	2,571	2,338								
			D	0.046	0.071	0.103	0.140	0.183	0.231	0.286	0.346								
1-3/4 x 1/8	21.3	8'-3"	U	5,833	3,733	2,593	1,905	1,458	1,152	933	771	648	552	476	365	288	U = Safe Uniform Load in pounds/sq. ft. C = Concentrated Load in pounds/ft. of grating width D = Deflection in inches		
			D	0.049	0.077	0.110	0.150	0.196	0.248	0.306	0.370								
			C	5,833	4,687	3,889	3,333	2,917	2,593	2,333	2,121								
			D	0.039	0.061	0.088	0.120	0.157	0.198	0.245	0.296								
1-3/4 x 3/16	31.6	9'-2"	U	8,750	5,600	3,889	2,857	2,188	1,728	1,400	1,157	972	828	714	547	432	U = Safe Uniform Load in pounds/sq. ft. C = Concentrated Load in pounds/ft. of grating width D = Deflection in inches		
			D	0.049	0.077	0.110	0.150	0.196	0.248	0.306	0.370								
			C	8,750	7,000	5,833	5,000	4,375	3,889	3,500	3,182								
			D	0.039	0.061	0.088	0.120	0.157	0.198	0.245	0.296								
2 x 1/8	24.3	9'-2"	U	7,619	4,876	3,386	2,488	1,905	1,505	1,219	1,008	847	721	622	476	376	U = Safe Uniform Load in pounds/sq. ft. C = Concentrated Load in pounds/ft. of grating width D = Deflection in inches		
			D	0.043	0.067	0.096	0.131	0.171	0.217	0.268	0.324								
			C	7,619	6,095	5,079	4,354	3,810	3,386	3,048	2,771								
			D	0.034	0.054	0.077	0.105	0.137	0.174	0.214	0.259								
2 x 3/16	36.0	10'-1"	U	11,429	7,314	5,079	3,732	2,857	2,258	1,829	1,511	1,270	1,082	933	714	564	U = Safe Uniform Load in pounds/sq. ft. C = Concentrated Load in pounds/ft. of grating width D = Deflection in inches		
			D	0.043	0.067	0.096	0.131	0.171	0.217	0.268	0.324								
			C	11,429	9,143	7,619	6,531	5,714	5,079	4,571	4,156								
			D	0.034	0.054	0.077	0.105	0.137	0.174	0.214	0.259								
2-1/4 x 3/16	40.5	11'-1"	U	14,464	9,257	6,429	4,723	3,616	2,857	2,314	1,913	1,607	1,369	1,181	904	714	U = Safe Uniform Load in pounds/sq. ft. C = Concentrated Load in pounds/ft. of grating width D = Deflection in inches		
			D	0.038	0.060	0.086	0.117	0.152	0.193	0.238	0.288								
			C	14,464	11,571	9,643	8,265	7,232	6,429	5,786	5,260								
			D	0.030	0.048	0.069	0.093	0.122	0.154	0.190	0.230								
2-1/2 x 3/16	44.9	12'-0"	U	17,857	11,429	7,937	5,831	4,464	3,527	2,857	2,361	1,984	1,691	1,458	1,116	882	U = Safe Uniform Load in pounds/sq. ft. C = Concentrated Load in pounds/ft. of grating width D = Deflection in inches		
			D	0.034	0.054	0.077	0.105	0.137	0.174	0.214	0.259								
			C	17,857	14,286	11,905	10,204	8,929	7,937	7,143	6,494								
			D	0.027	0.043	0.062	0.084	0.110	0.139	0.171	0.207								

* Weight per square foot based upon 7-SLS-4 grating. Add .30 psf for 2" on center cross bars.

** Maximum pedestrian load is defined as a 100# Uniform Load with deflection ≤ 1/4 inch.

The 1/4" maximum deflection criteria is considered consistent with pedestrian comfort, but may be exceeded for other loading conditions at the discretion of the specifying authority.

Note: When gratings with serrated surface are specified, the depth of the grating required for a specific load will be 1/4" greater than that shown in these tables.

Panel Widths

Grating panels are available from stock in nominal 24" and 36" widths. When considering alternative widths, consult this table to select widths that will maintain uniform "out-to-out" spacing of the bearing bars. Specified widths deviating from this table will be fabricated to size with side banding and the bar spacing on one side of the finished panel will deviate from the spacing throughout the remainder of the panel.

No. of Bearing Bars Panel Width	2 5/8"	3 1-1/16"	4 1-1/2"	5 1-15/16"	6 2-3/8"	7 2-13/16"	8 3-1/4"	9 3-11/16"	10 4-1/8"	11 4-9/16"	12 5"	13 5-7/16"	14 5-7/8"	15 6-5/16"	16 6-3/4"
No. of Bearing Bars Panel Width	17 7-3/16"	18 7-5/8"	19 8-1/16"	20 8-1/2"	21 8-15/16"	22 9-3/8"	23 9-13/16"	24 10-1/4"	25 10-11/16"	26 11-1/8"	27 11-9/16"	28 12"	29 12-7/16"	30 12-7/8"	31 13-5/16"
No. of Bearing Bars Panel Width	32 13-3/4"	33 14-3/16"	34 14-5/8"	35 15-1/16"	36 15-1/2"	37 15-15/16"	38 16-3/8"	39 16-13/16"	40 17-1/4"	41 17-11/16"	42 18-1/8"	43 18-9/16"	44 19"	45 19-7/16"	46 19-7/8"
No. of Bearing Bars Panel Width	47 20-5/16"	48 20-3/4"	49 21-3/16"	50 21-5/8"	51 22-1/16"	52 22-1/2"	53 22-15/16"	54 23-3/8"	55 23-13/16"	56 24-1/4"	57 24-11/16"	58 25-1/8"	59 25-9/16"	60 26"	61 26-7/16"
No. of Bearing Bars Panel Width	62 26-7/8"	63 27-5/16"	64 27-3/4"	65 28-3/16"	66 28-5/8"	67 29-1/16"	68 29-1/2"	69 29-15/16"	70 30-3/8"	71 30-13/16"	72 31-1/4"	73 31-11/16"	74 32-1/8"	75 32-9/16"	76 33"
No. of Bearing Bars Panel Width	77 33-7/16"	78 33-7/8"	79 34-5/16"	80 34-3/4"	81 35-3/16"	82 35-5/8"	83 36-1/16"								

Panel widths indicated are for gratings with 3/16" thick bearing bars. For 1/8" thick bearing bars deduct 1/16" from the stated values.

■ Indicates stock panel widths.