

# Steel Bar Grating

## 11 Space Load Table

Use this table when evaluating spans and loads for the following types of steel grating:  
11-SL-4 and 11-SL-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	7'-6	8'-0		
3/4 x 3/16	9.1	4'-4"	U	921	589	409	301	230	182	147	All loads and deflections are theoretical and based upon the gross sections of the bearing bars, using a fiber stress of 18,000 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. U = Safe Uniform Load in pounds/sq. ft. C = Concentrated Load in pounds/ft. of grating width D = Deflection in inches							
			D	0.099	0.155	0.223	0.304	0.397	0.503	0.621								
			C	921	736	614	526	460	409	368								
			D	0.079	0.124	0.179	0.243	0.318	0.402	0.497								
1 x 1/8	8.1	4'-11"	U	1,091	698	485	356	273	216	175	144							
			D	0.074	0.116	0.168	0.228	0.298	0.377	0.466								
			C	1,091	873	727	623	546	485	436								
			D	0.060	0.093	0.134	0.182	0.238	0.302	0.372								
1 x 3/16	11.9	5'-5"	U	1,636	1,047	727	534	409	323	262	216	182						
			D	0.074	0.116	0.168	0.228	0.298	0.377	0.466								
			C	1,636	1,309	1,091	935	818	727	655								
			D	0.060	0.093	0.134	0.182	0.238	0.302	0.372								
1-1/4 x 1/8	10.0	5'-9"	U	1,705	1,091	758	557	426	337	273	225	189	161					
			D	0.060	0.093	0.134	0.182	0.238	0.302	0.372								
			C	1,705	1,364	1,136	974	852	758	620								
			D	0.048	0.074	0.107	0.146	0.191	0.241	0.298								
1-1/4 x 3/16	14.7	6'-5"	U	2,557	1,636	1,136	835	639	505	409	338	284	242	209				
			D	0.060	0.093	0.134	0.182	0.238	0.302	0.372								
			C	2,557	2,046	1,705	1,461	1,278	1,136	930								
			D	0.048	0.074	0.107	0.146	0.191	0.241	0.298								
1-1/2 x 1/8	11.9	6'-8"	U	2,455	1,571	1,091	802	614	485	393	325	273	232	200	153			
			D	0.050	0.078	0.112	0.152	0.199	0.251	0.310								
			C	2,455	1,964	1,636	1,403	1,227	1,091	982								
			D	0.040	0.062	0.089	0.122	0.159	0.201	0.248								
1-1/2 x 3/16	17.7	7'-4"	U	3,682	2,356	1,636	1,202	921	727	589	487	409	349	301	230	182		
			D	0.050	0.078	0.112	0.152	0.199	0.251	0.310								
			C	3,382	2,946	2,455	2,104	1,841	1,636	1,473								
			D	0.040	0.062	0.089	0.122	0.159	0.201	0.248								
1-3/4 x 1/8	13.9	7'-5"	U	3,341	2,138	1,485	1,091	835	660	535	442	371	316	273	209	165		
			D	0.043	0.067	0.096	0.130	0.170	0.215	0.266								
			C	3,341	2,673	2,227	1,909	1,671	1,485	1,336								
			D	0.034	0.053	0.077	0.104	0.136	0.172	0.213								
1-3/4 x 3/16	20.5	8'-3"	U	5,011	3,207	2,227	1,636	1,253	990	802	663	557	474	409	313	248		
			D	0.043	0.067	0.096	0.130	0.170	0.215	0.266								
			C	5,011	4,009	3,341	2,864	2,506	2,227	2,005								
			D	0.034	0.053	0.077	0.104	0.136	0.172	0.213								
2 x 1/8	15.8	8'-3"	U	4,364	2,793	1,939	1,425	1,091	862	698	577	485	413	356	273	216		
			D	0.037	0.058	0.084	0.114	0.149	0.189	0.233								
			C	4,364	3,491	2,909	2,494	2,182	1,939	1,746								
			D	0.030	0.047	0.067	0.091	0.119	0.151	0.186								
2 x 3/16	23.3	9'-1"	U	6,546	4,189	2,909	2,137	1,636	1,293	1,047	866	727	620	534	409	323		
			D	0.037	0.058	0.084	0.114	0.149	0.189	0.233								
			C	6,546	5,236	4,364	3,740	3,273	2,909	2,618								
			D	0.030	0.047	0.067	0.091	0.119	0.151	0.186								
2-1/4 x 3/16	26.1	10'-0"	U	8,284	5,302	3,682	2,705	2,071	1,636	1,326	1,095	921	784	676	518	409		
			D	0.033	0.052	0.074	0.101	0.132	0.168	0.207								
			C	8,284	6,627	5,523	4,734	4,142	3,682	3,314								
			D	0.026	0.041	0.060	0.081	0.106	0.134	0.166								
2-1/2 x 3/16	28.9	10'-9"	U	10,227	6,546	4,546	3,340	2,557	2,020	1,636	1,352	1,136	968	835	639	505		
			D	0.030	0.047	0.067	0.091	0.119	0.151	0.186								
			C	10,227	8,182	6,818	5,844	5,114	4,546	4,091								
			D	0.024	0.037	0.054	0.073	0.095	0.121	0.149								

\* Weight per square foot based upon 11-W-4 grating. Add .60 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 7/8"	3 1-9/16"	4 2-1/4"	5 2-15/16"	6 3-5/8"	7 4-5/16"	8 5"	9 5-11/16"	10 6-3/8"	11 7-1/16"	12 7-3/4"	13 8-7/16"	14 9-1/8"	15 9-13/16"	16 10-1/2"
No. of Bearing Bars Panel Width	17 11-3/16"	18 11-7/8"	19 12-9/16"	20 13-1/4"	21 13-15/16"	22 14-5/8"	23 15-5/16"	24 16"	25 16-11/16"	26 17-3/8"	27 18-1/16"	28 18-3/4"	29 19-7/16"	30 20-1/8"	31 20-13/16"
No. of Bearing Bars Panel Width	32 21-1/2"	33 22-3/16"	34 22-7/8"	35 23-9/16"	36 24-1/4"	37 24-15/16"	38 25-5/8"	39 26-5/16"	40 27"	41 27-11/16"	42 28-3/8"	43 29-1/16"	44 29-3/4"	45 30-7/16"	46 31-1/8"
No. of Bearing Bars Panel Width	47 31-13/16"	48 32-1/2"	49 33-3/16"	50 33-7/8"	51 34-9/16"	52 35-1/4"	53 35-15/16"								

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.