

# Steel Bar Grating

## 8 Space Load Table

Use this table when evaluating spans and loads for the following types of steel grating:  
**8-W-4, 8-W-2, 8-DT-4, 8-DT-2, 8-SL-4 and 8-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	8'-0	9'-0					
3/4 x 3/16	12.3	4'-9"	U	1,266	810	563	413	316	250	203	167	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.									
			D	0.099	0.155	0.223	0.304	0.397	0.503	0.621	0.751										
			C	1,266	1,013	844	723	633	563	506	460										
			D	0.079	0.124	0.179	0.243	0.318	0.402	0.497	0.601										
1 x 1/8	11.0	5'-3"	U	1,500	960	667	490	375	296	240	198						167	136	105	74	53
			D	0.074	0.116	0.168	0.228	0.298	0.377	0.466	0.563						0.670	0.787	0.914	1.051	1.198
			C	1,500	1,200	1,000	857	750	667	600	546						500	460	429	398	377
			D	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451						0.536	0.629	0.730	0.837	0.951
1 x 3/16	16.2	5'-10"	U	2,250	1,440	1,000	735	563	444	360	298						250	213	182	151	120
			D	0.074	0.116	0.168	0.228	0.298	0.377	0.466	0.563						0.670	0.787	0.914	1.051	1.198
			C	2,250	1,800	1,500	1,286	1,125	1,000	900	818						750	692	636	584	537
			D	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451						0.536	0.629	0.730	0.837	0.951
1-1/4 x 1/8	13.6	6'-3"	U	2,344	1,500	1,042	765	586	463	375	310						260	222	191	160	130
			D	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451						0.536	0.629	0.730	0.837	0.951
			C	2,344	1,875	1,563	1,399	1,172	1,042	938	852						781	721	670	629	588
			D	0.048	0.074	0.107	0.146	0.191	0.241	0.298	0.360						0.429	0.504	0.584	0.670	0.763
1-1/4 x 3/16	20.0	6'-11"	U	3,516	2,250	1,563	1,148	879	694	563	465	391	333	287	220	160					
			D	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536	0.629	0.730	0.837	0.951					
			C	3,516	2,813	2,344	2,009	1,758	1,563	1,406	1,278	1,172	1,082	1,005	938	879					
			D	0.048	0.074	0.107	0.146	0.191	0.241	0.298	0.360	0.429	0.504	0.584	0.670	0.763					
1-1/2 x 1/8	16.2	7'-2"	U	3,375	2,160	1,500	1,102	844	667	540	446	375	320	276	211	150					
			D	0.050	0.078	0.112	0.152	0.199	0.251	0.310	0.376	0.447	0.524	0.608	0.704	0.811					
			C	3,375	2,700	2,250	1,929	1,688	1,500	1,350	1,227	1,125	1,039	964	844	744					
			D	0.040	0.062	0.089	0.122	0.159	0.201	0.248	0.300	0.358	0.420	0.487	0.563	0.646					
1-1/2 x 3/16	24.0	7'-11"	U	5,063	3,240	2,250	1,653	1,266	1,000	810	669	563	479	413	316	250					
			D	0.050	0.078	0.112	0.152	0.199	0.251	0.310	0.376	0.447	0.524	0.608	0.704	0.811					
			C	5,063	4,050	3,375	2,893	2,531	2,250	2,025	1,841	1,688	1,558	1,446	1,266	1,125					
			D	0.040	0.062	0.089	0.122	0.159	0.201	0.248	0.300	0.358	0.420	0.487	0.563	0.646					
1-3/4 x 1/8	18.9	8'-1"	U	4,594	2,940	2,042	1,500	1,148	907	735	607	510	435	375	287	227					
			D	0.043	0.067	0.096	0.130	0.170	0.215	0.266	0.322	0.383	0.450	0.521	0.608	0.704					
			C	4,594	3,675	3,063	2,625	2,297	2,042	1,838	1,671	1,531	1,414	1,313	1,148	1,021					
			D	0.034	0.053	0.077	0.104	0.136	0.172	0.213	0.257	0.306	0.360	0.417	0.484	0.563					
1-3/4 x 3/16	27.9	8'-11"	U	6,891	4,410	3,063	2,250	1,723	1,361	1,103	911	766	652	563	431	340					
			D	0.043	0.067	0.096	0.130	0.170	0.215	0.266	0.322	0.383	0.450	0.521	0.608	0.704					
			C	6,891	5,513	4,594	3,938	3,445	3,063	2,756	2,506	2,297	2,120	1,969	1,723	1,531					
			D	0.034	0.053	0.077	0.104	0.136	0.172	0.213	0.257	0.306	0.360	0.417	0.484	0.563					
2 x 1/8	21.5	8'-11"	U	6,000	3,840	2,667	1,959	1,500	1,185	960	793	667	568	490	375	296					
			D	0.037	0.058	0.084	0.114	0.149	0.189	0.233	0.282	0.335	0.393	0.456	0.526	0.603					
			C	6,000	4,800	4,000	3,429	3,000	2,667	2,400	2,182	2,000	1,846	1,714	1,500	1,333					
			D	0.030	0.047	0.067	0.091	0.119	0.151	0.186	0.225	0.268	0.315	0.365	0.427	0.603					
2 x 3/16	31.8	9'-11"	U	9,000	5,760	4,000	2,939	2,250	1,778	1,440	1,190	1,000	852	735	563	444					
			D	0.037	0.058	0.084	0.114	0.149	0.189	0.233	0.282	0.335	0.393	0.456	0.526	0.603					
			C	9,000	7,200	6,000	5,143	4,500	4,000	3,600	3,273	3,000	2,769	2,571	2,250	2,000					
			D	0.030	0.047	0.067	0.091	0.119	0.151	0.186	0.225	0.268	0.315	0.365	0.427	0.603					
2-1/4 x 3/16	35.7	10'-10"	U	11,391	7,290	5,063	3,719	2,848	2,250	1,823	1,506	1,266	1,078	930	712	563					
			D	0.033	0.052	0.074	0.101	0.132	0.168	0.207	0.250	0.298	0.350	0.406	0.466	0.530					
			C	11,391	9,113	7,594	6,509	5,695	5,063	4,556	4,142	3,797	3,505	3,255	2,848	2,531					
			D	0.026	0.041	0.060	0.081	0.106	0.134	0.166	0.200	0.238	0.280	0.324	0.374	0.436					
2-1/2 x 3/16	39.6	11'-8"	U	14,063	9,000	6,250	4,592	3,516	2,778	2,250	1,860	1,563	1,331	1,148	879	694					
			D	0.030	0.047	0.067	0.091	0.119	0.151	0.186	0.225	0.268	0.315	0.365	0.427	0.603					
			C	14,063	11,250	9,375	8,036	7,031	6,250	5,625	5,114	4,688	4,327	4,018	3,516	3,125					
			D	0.024	0.037	0.054	0.073	0.095	0.121	0.149	0.180	0.215	0.252	0.292	0.331	0.483					

\* Weight per square foot based upon 8-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.**

Welded grating types 8-W-4 and 8-W-2 are available in bearing bar depths from 3/4" to 2", and panels are available from stock in nominal 24" widths (24" max for type "W").

### Panel Widths

Grating panels are available from stock in nominal 24" and 36" widths (24" max for type "W"). 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.

Number of Bearing Bars	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Panel Width	11-1/16"	1-3/16"	1-11/16"	2-3/16"	2-11/16"	3-3/16"	3-11/16"	4-3/16"	4-11/16"	5-3/16"	5-11/16"	6-3/16"	6-11/16"	7-3/16"	7-11/16"
Number of Bearing Bars	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Panel Width	8-3/16"	8-11/16"	9-3/16"	9-11/16"	10-3/16"	10-11/16"	11-3/16"	11-11/16"	12-3/16"	12-11/16"	13-3/16"	13-11/16"	14-3/16"	14-11/16"	15-3/16"
Number of Bearing Bars	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
Panel Width	15-11/16"	16-3/16"	16-11/16"	17-3/16"	17-11/16"	18-3/16"	18-11/16"	19-3/16"	19-11/16"	20-3/16"	20-11/16"	21-3/16"	21-11/16"	22-3/16"	22-11/16"
Number of Bearing Bars	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61
Panel Width	23-3/16"	23-11/16"	24-3/16"	24-11/16"	25-3/16"	25-11/16"	26-3/16"	26-11/16"	27-3/16"	27-11/16"	28-3/16"	28-11/16"	29-3/16"	29-11/16"	30-3/16"
Number of Bearing Bars	62	63	64	65	66	67	68	69	70	71	72				
Panel Width	30-11/16"	31-3/16"	31-11/16"	32-3/16"	32-11/16"	33-3/16"	33-11/16"	34-3/16"	34-11/16"	35-3/16"	35-11/16"				

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 for types "DT" and "SL".

■ Indicates stock panel widths for type "W". (24" max)