15 Space Load Table

Use this table when evaluating spans and loads for the following types of steel grating:

15-W-4, 15-W-2, 15-DT-4, 15-DT-2, 15-SL-4 and 15-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	6.9	4'-0"	U	675	432	300	220	169	133	108						
			D	0.099	0.155	0.223	0.304	0.397	0.503	0.621						
			C	675	540	450	386	338	300	270						
			D	0.079	0.124	0.179	0.243	0.318	0.402	0.497						
1 x 1/8	6.2	4'-6"	U	800	512	356	261	200	158	128						
			D	0.074	0.116	0.168	0.228	0.298	0.377	0.466						
			C	800	640	533	457	400	356	320						
			D	0.060	0.093	0.134	0.182	0.238	0.302	0.372						
1 x 3/16	8.9	5'-0"	U	1,200	768	533	392	300	237	192	159	133				
			D	0.074	0.116	0.168	0.228	0.298	0.377	0.466	0.563	0.670				
			C	1,200	960	800	686	600	533	480	436	400				
			D	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536				
1-1/4 x 1/8	7.5	5'-4"	U	1,250	800	556	408	313	247	200	165	139	118			
			D	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536	0.629			
			C	1,250	1,000	833	714	625	556	500	455	417	385			
			D	0.048	0.074	0.107	0.146	0.191	0.241	0.298	0.360	0.429	0.504			
1-1/4 x 3/16	11.0	5'-11"	U	1,875	1,200	833	612	469	370	300	248	208	178	153		
			D	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536	0.629	0.730		
			C	1,875	1,500	1,250	1,071	938	833	750	682	625	577	536		
			D	0.048	0.074	0.107	0.146	0.191	0.241	0.298	0.360	0.429	0.504	0.584		
1-1/2 x 1/8	8.9	6'-2"	U	1,800	1,152	800	588	450	356	288	238	200	170	147	113	
			D	0.050	0.078	0.112	0.152	0.199	0.251	0.310	0.376	0.447	0.524	0.608	0.794	
			C	1,800	1,440	1,200	1,029	900	800	720	655	600	554	514	450	
			D	0.040	0.062	0.089	0.122	0.159	0.201	0.248	0.300	0.358	0.420	0.487	0.636	
1-1/2 x 3/16	13.2	6'-10"	U	2,700	1,728	1,200	882	675	533	432	357	300	256	220	169	133
			D	0.050	0.078	0.112	0.152	0.199	0.251	0.310	0.376	0.447	0.524	0.608	0.794	1.006
			C	2,700	2,160	1,800	1,543	1,350	1,200	1,080	982	900	831	771	675	600
			D	0.040	0.062	0.089	0.122	0.159	0.201	0.248	0.300	0.358	0.420	0.487	0.636	0.804
1-3/4 x 1/8	10.4	6'-11"	U	2,450	1,568	1,089	800	613	484	392	324	272	232	200	153	121
			D	0.043	0.067	0.096	0.130	0.170	0.215	0.266	0.322	0.383	0.450	0.521	0.681	0.862
			C	2,450	1,960	1,633	1,400	1,225	1,089	980	891	817	754	700	613	544
			D	0.034	0.053	0.077	0.104	0.136	0.172	0.213	0.257	0.306	0.360	0.417	0.545	0.689
1-3/4 x 3/16	15.3	7'-8"	U	3,675	2,352	1,633	1,200	919	726	588	486	408	348	300	230	182
			D	0.043	0.067	0.096	0.130	0.170	0.215	0.266	0.322	0.383	0.450	0.521	0.681	0.862
			C	3,675	2,940	2,450	2,100	1,838	1,633	1,470	1,336	1,225	1,131	1,050	919	817
			D	0.034	0.053	0.077	0.104	0.136	0.172	0.213	0.257	0.306	0.360	0.417	0.545	0.689
2 x 1/8	11.8	7'-7"	U	3,200	2,048	1,422	1,045	800	632	512	423	356	303	261	200	158
			D	0.037	0.058	0.084	0.114	0.149	0.189	0.233	0.282	0.335	0.393	0.456	0.596	0.754
			C	3,200	2,560	2,133	1,829	1,600	1,422	1,280	1,164	1,067	985	914	800	711
			D	0.030	0.047	0.067	0.091	0.119	0.151	0.186	0.225	0.268	0.315	0.365	0.477	0.603
2 x 3/16	17.3	8'-6"	U	4,800	3,072	2,133	1,567	1,200	948	768	635	533	454	392	300	237
			D	0.037	0.058	0.084	0.114	0.149	0.189	0.233	0.282	0.335	0.393	0.456	0.596	0.754
			C	4,800	3,840	3,200	2,743	2,400	2,133	1,920	1,746	1,600	1,477	1,371	1,200	1,067
			D	0.030	0.047	0.067	0.091	0.119	0.151	0.186	0.225	0.268	0.315	0.365	0.477	0.603
2-1/4 x 3/16	19.4	9'-3"	U	6,075	3,888	2,700	1,984	1,519	1,200	972	803	675	575	496	380	300
			D	0.033	0.052	0.074	0.101	0.132	0.168	0.207	0.250	0.298	0.350	0.406	0.530	0.670
			C	6,075	4,860	4,050	3,471	3,038	2,700	2,430	2,209	2,025	1,869	1,736	1,519	1,350
			D	0.026	0.041	0.060	0.081	0.106	0.134	0.166	0.200	0.238	0.280	0.324	0.424	0.536
2-1/2 x 3/16	21.5	10'-0"	U	7,500	4,800	3,333	2,449	1,875	1,482	1,200	992	833	710	612	469	370
			D	0.030	0.047	0.067	0.091	0.119	0.151	0.186	0.225	0.268	0.315	0.365	0.477	0.603
			C	7,500	6,000	5,000	4,286	3,750	3,333	3,000	2,727	2,500	2,308	2,143	1,875	1,667
			D	0.024	0.037	0.054	0.073	0.095	0.121	0.149	0.180	0.215	0.252	0.292	0.381	0.483

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

* Weight per square foot based upon 15-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 ¼" 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.

Number of Bearing Bars	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Panel Width	1-1/8"	2-1/16"	3"	3-15/16"	4-7/8"	5-13/16"	6-3/4"	7-11/16"	8-5/8"	9-9/16"	10-1/2"	11-7/16"	12-3/8"	13-5/16"	14-1/4"
Number of Bearing Bars	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Panel Width	15-3/16"	16-1/8"	17-1/16"	18"	18-15/16"	19-7/8"	20-13/16"	21-3/4"	22-11/16"	23-5/8"	24-9/16"	25-1/2"	26-7/16"	27-3/8"	28-5/16"
Number of Bearing Bars	32	33	34	35	36	37	38	39							
Panel Width	29-1/4"	30-3/16"	31-1/8"	32-1/16"	33"	33-15/16"	34-7/8"	35-13/16"							

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.