

19 SPACE LOAD TABLE

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

19-SG-4, 19-SG-2, 19-SGI-4, 19-SGI-2, 19-SGF-4, 19-SGF-2, 19-ADT-4 and 19-ADT-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"												
3/4" x 3/16"	1.9	2'-11"	U	355	227	158	116	All loads and deflections are theoretical and based upon the gross sections of the bearing bars, using a fiber stress of 12,000 psi.																			
			D	.192	.300	.432	.588																				
3/4" I-Bar	C		355	284	237	203																					
	D		.154	.240	.346	.470																					
1" x 1/8"	1.7	3'-3"	U	421	270	187	138	105	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.																		
			D	.144	.225	.324	.441	.576																			
			C	421	337	281	241	211																			
			D	.115	.180	.259	.353	.461																			
1" x 3/16"	2.5	3'-8"	U	632	404	281	206	158	125	Grating for spans to the left of the heavy line have a deflection ≤ 1/4" for uniform loads of 100 psi.																	
			D	.144	.225	.324	.441	.576	.729																		
1" I-Bar	C		632	505	421	361	316	281																			
	D		.115	.180	.259	.353	.461	.583																			
1-1/4" x 1/8"	2.1	3'-11"	U	658	421	292	215	165	130	133	U = Safe Uniform Load in pounds/sq. foot C = Concentrated Load in pounds/foot of grating width D = Deflection in inches																
			D	.115	.180	.259	.353	.461	.583	.720																	
			C	658	526	439	376	329	292	333																	
			D	.092	.144	.207	.282	.369	.467	.576																	
1-1/4" x 3/16"	3.1	4'-4"	U	987	632	439	322	247	195	158	131	110															
			D	.115	.180	.259	.353	.461	.583	.720	.871	1.037															
1-1/4" I-Bar	C		987	790	658	564	493	439	395	359	329																
	D		.092	.144	.207	.282	.369	.467	.576	.697	.829																
1-1/2" x 1/8"	2.5	4'-5"	U	947	606	421	309	237	187	152	125	105	90	77	59												
			D	.096	.150	.216	.294	.384	.486	.600	.726	.864	1.014	1.176	1.536												
			C	947	758	632	541	474	421	379	345	316	292	271	237												
			D	.077	.120	.173	.235	.307	.389	.480	.581	.691	.811	.941	1.229												
1-1/2 x 3/16	3.7	4'-11"	U	1421	910	632	464	355	281	227	188	158	135	116	89												
			D	.096	.150	.216	.294	.384	.486	.600	.726	.864	1.014	1.176	1.536												
1-1/2" I-Bar	C		1421	1137	947	812	711	632	568	517	474	437	406	355													
	D		.077	.120	.173	.235	.307	.389	.480	.581	.691	.811	.941	1.229													
1-3/4" x 1/8"	2.9	5'-0"	U	1290	825	573	421	322	255	206	171	143	122	105	81												
			D	.082	.129	.185	.252	.329	.417	.514	.622	.741	.869	1.008	1.317												
			C	1290	1032	860	737	645	573	516	469	430	397	368	322												
			D	.066	.103	.148	.202	.263	.333	.411	.498	.592	.695	.806	1.053												
1-3/4" x 3/16"	4.2	5'-6"	U	1934	1238	860	632	484	382	310	256	215	183	158	121												
			D	.082	.129	.185	.252	.329	.417	.514	.622	.741	.869	1.008	1.317												
1-3/4" I-Bar	C		1934	1547	1290	1105	967	860	774	703	645	595	553	484													
	D		.066	.103	.148	.202	.263	.333	.411	.498	.592	.695	.806	1.053													
2" x 1/8"	3.3	5'-6"	U	1684	1078	749	550	421	333	270	223	187	160	138	105												
			D	.072	.113	.162	.221	.288	.365	.450	.545	.648	.761	.882	1.152												
			C	1684	1347	1123	962	842	749	674	612	561	518	481	421												
			D	.058	.090	.130	.176	.230	.292	.360	.436	.518	.608	.706	.922												
2" x 3/16"	4.8	6'-1"	U	2526	1617	1123	825	632	499	404	334	281	239	206	158												
			D	.072	.113	.162	.221	.288	.365	.450	.545	.648	.761	.882	1.152												
2" I-Bar	C		2526	2021	1684	1444	1263	1123	1011	919	842	777	722	632													
	D		.058	.090	.130	.176	.230	.292	.360	.436	.518	.608	.706	.922													
2-1/4" x 3/16"	5.4	6'-8"	U	3197	2046	1421	1044	799	632	512	423	355	303	261	200												
			D	.064	.100	.144	.196	.256	.324	.400	.484	.576	.676	.784	1.024												
2-1/4" I-Bar	C		3197	2558	2132	1827	1599	1421	1279	1163	1066	984	914	799													
	D		.051	.080	.115	.157	.205	.259	.320	.387	.461	.541	.627	.819													
2-1/2" x 3/16"	5.9	7'-3"	U	3947	2526	1754	1289	987	780	632	522	439	374	322	247												
			D	.058	.090	.130	.176	.230	.292	.360	.436	.518	.608	.706	.922												
2-1/2" I-Bar	C		3947	3158	2632	2256	1974	1754	1579	1435	1316	1215	1128	987													
	D		.046	.072	.104	.141	.184	.233	.288	.348	.415	.487	.564	.737													

* Weight per square foot based upon 19-SG-4 grating. Add 0.30 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.

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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
Panel Width	1-3/8"	2-9/16"	3-3/4"	4-15/16"	6-1/8"	7-5/16"	8-1/2"	9-11/16"	10-7/8"	12-1/16"
Number of Bearing Bars	12	13	14	15	16	17	18	19	20	21
Panel Width	13-1/4"	14-7/16"	15-5/8"	16-13/16"	18"	19-3/16"	20-3/8"	21-9/16"	22-3/4"	23-15/16"
Number of Bearing Bars	22	23	24	25	26	27	28	29	30	31
Panel Width	25-1/8"	26-5/16"	27-1/2"	28-11/16"	29-7/8"	31-1/16"	32-1/4"	33-7/16"	34-5/8"	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. Add 1/4" to all dimensions for extended cross bars on all aluminum products.