Steel Grating Load Table 19-4 / 19-2

Bearing Bar Size		Clear Span													Material Weight Per Sq. Ft. (lbs)					
		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"	19-4	19-2	15-4	15-2	11-4	11-2
3/4x1/8	U	355	227	158	116	89	70								4.0	4.6	4.7	5.3	6.2	6.8
	D	.099	.155	.223	.304	.397	.503													
	C	355	284	237	203	178	158													
	D	.079	.124	.179	.243	.318	.402													
3/4x3/16	U	533	341	237	174	133	105								5.6	6.2	6.9	7.7	9.2	9.8
	D	.099	.155	.223	.304	.503	.503													
	C	533	426	355	305	237	237													
	D	.079	.124	.179	.243	.402	.402													
1 x1/8	U	632	404	284	206	156	125	101	84	70					5.1	5.5	6.2	6.7	8.2	8.7
	D	.074	.116	.168	.228	.298	.377	.466	.563	.670										
	C	632	505	421	361	316	281	253	230	244										
	D	.060	.093	.134	.182	.238	.302	.372	.454	.536										
1x3/16	U	947	606	421	309	237	187	152	125	105					7.4	8.0	8.9	9.6	12.1	12.7
	D	.074	.116	.168	.228	.298	.377	.466	.563	.670										
	C	947	758	632	541	474	421	379	344	316										
	D	.060	.093	.134	.182	.238	.302	.372	.451	536										
1 1/4x1/8	U	987	632	439	322	247	195	158	130	110	93	81			6.1	6.6	7.5	8.1	10.0	10.5
	D	.060	.093	.134	.382	.238	.302	.372	.451	.536	.629	.730								
	C	987	789	658	564	493	439	395	359	329	304	282								
	D	.048	.074	.107	.146	.194	.241	.298	.360	.429	.504	.584								
1 1/4x3/16	U	1480	947	658	483	370	292	237	196	164	140	121			9.0	9.6	11.2	11.8	14.9	15.5
	D	.060	.093	.134	.182	.238	.302	.372	.451	.536	.629	.730								
	C	1480	1184	987	846	740	658	592	538	493	455	423								
	D	0.48	0.74	.107	.146	.191	.241	.298	.360	.429	.504	.584								
1 1/2x1/8	U	1421	909	632	464	355	281	227	188	158	135	116	89	70	7.4	7.8	8.9	9.4	12.1	12.6
	D	.050	.078	.112	.152	.199	.251	.310	.376	.447	.524	.608	.794	1.006						
	C	1421	1437	947	812	711	632	568	517	474	437	406	355	316						
	D	.040	.062	.089	.122	.159	.201	.248	.300	.358	.420	.487	.636	.804						
1 1/2x3/16	U	2132	1364	947	696	533	421	341	282	237	202	174	133	105	10.5	11.2	13.1	13.7	17.5	18.1
	D	.050	.078	.112	.152	.199	.251	.310	.376	.447	.524	.608	.794	1.006						
	C	2132	1705	1421	1218	1066	947	853	775	711	656	609	533	474						
	D	.040	.062	.089	.122	.159	.201	.248	.300	.358	.420	.487	.636	.804						
1 3/4x3/16	U	2901	1857	1289	947	725	573	464	384	322	275	237	181	148	12.3	13.0	15.2	15.8	20.4	21.0
	D	.043	.067	.096	.130	.170	.215	.266	.322	.383	.450	.521	.681	.862						
	C	2901	2321	1934	1658	1451	1289	1161	1055	967	893	829	725	645						
	D	.034	.053	.077	.104	.136	.172	.213	.257	.306	.360	.417	.545	.689						
2x3/16	U	3789	2425	1684	1237	947	749	606	501	421	359	309	237	187	14.0	14.6	17.3	17.9	23.2	23.8
	D	.037	.058	.084	.114	.149	.189	.233	.282	.335	.393	.456	.596	.754						
	C	3789	3032	2526	2165	1895	1684	1516	1378	1263	1166	1083	947	842						
	D	.030	.047	.067	.091	.119	.151	.186	.225	.268	.315	.365	.477	.603						
2 1/4x3/16	U	4796	3069	2132	1566	1199	947	767	634	533	454	392	300	237	15.6	16.1	19.4	20.0	26.0	26.7
	D	.033	.052	.074	.101	.132	.168	.207	.250	.298	.350	.406	.530	.670						
	C	1796	3837	3197	2741	2398	2132	1918	1744	1599	1476	1370	1199	1066						
	D	.026	.041	.060	.081	.106	.134	.166	.200	.238	.280	.324	.424	.536						
2 1/2x3/16	U	5921	3789	2632	1933	1480	1170	947	783	658	561	483	370	292	17.5	18.1	21.4	22.0	28.8	29.4
	D	.030	.047	.067	.091	.119	.151	.186	.225	.268	.315	.365	.477	.603						
	C	5921	4737	3947	3383	2961	2632	2368	2153	1974	1822	1692	1480	1316						
	D	.024	.037	.054	.073	.095	.121	.149	.180	.215	.252	.292	.381	.483						

Loads and deflections are theoretical values based on 18,000 PSI unit stress. For pedestrian comfort deflections in excess of 1/4" are not recommended.

U = Uniform Load, lbs. per sq.ft.
C = Concentrated Mid-Span Load, lbs. per ft. of grating width
D = Deflection in Inches

NOTE: For gratings with serrated bearing bars, the depth of grating required to meet a specified load and deflection criteria will be 1/4" greater than shown above.

Alternative Bar Spacing Conversion Factors

The loads shown above are for type 19-4 and 19-2 gratings. To determine the load carrying capacities for alternative bar spacings, multiply the loads given by the following conversion factors (Deflection remains constant): For types 15-4 and 15-2: 1.26
For types 11-4 and 11-2: 1.71