



BAR GRATING - STEEL

IMPERIAL - Type 19-4 Spacing

TABLE OF SAFE LOADS

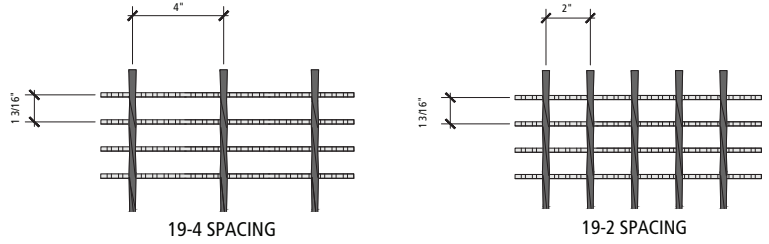
- U - Safe Uniform Load, in lbs. per sq. ft.
- C - Safe Concentrated Load, in lbs. per foot of grating width
- D - Deflection in inches

Note: Spans to the right of heavy line not recommended. Deflections shown based on tabulated loadings. For lesser design loads reduce deflection in direct proportion. For serrated surface increase depth by one size.

For serrated surface, increase depth by 1/4" for load rate.

GENERAL

Loads and deflections are theoretical and based on static loading.



STANDARD STEEL TYPE 19-4																				
SIZE OF BEARING BAR	APPROX. WT/LBS/SQ.FT		SPAN IN INCHES												SEC. MOD. PER FEET OF WIDTH					
	TYPE 19-4	TYPE 19-2	1'-0"	1'-6"	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 1/8"	3.93		U	1420	631	355	227	158	116	89	70								0.122	
			D	0.023	0.055	0.099	0.155	0.223	0.304	0.397	0.503									
			C	710	473	355	284	237	203	178	158									
			D	0.019	0.044	0.079	0.124	0.179	0.243	0.318	0.402									
3/4" X 3/16"	5.58		U	2132	948	533	341	237	174	133	105								0.183	
			D	0.023	0.055	0.099	0.155	0.223	0.304	0.397	0.503									
			C	1066	711	533	426	355	305	266	237									
			D	0.019	0.044	0.079	0.124	0.179	0.243	0.318	0.402									
1" X 1/8"	5.03	5.50	U	2528	1124	632	404	281	206	158	125	101	84						0.216	
			D	0.020	0.042	0.074	0.116	0.168	0.228	0.298	0.377	0.466	0.563							
			C	1264	843	632	505	421	361	316	281	253	230							
			D	0.018	0.035	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451							
1" X 3/16"	7.23	7.87	U	3788	1684	947	606	421	309	237	187	152	125						0.325	
			D	0.020	0.042	0.074	0.116	0.168	0.228	0.298	0.377	0.466	0.563							
			C	1894	1263	947	758	632	541	474	421	379	344							
			D	0.018	0.035	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451							
1 1/4" X 1/8"	6.12	6.76	U	3948	1755	987	632	439	322	247	195	158	130	110	93	81			0.339	
			D	0.018	0.035	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536	0.629	0.730				
			C	1974	1316	987	789	658	564	493	439	395	359	329	304	282				
			D	0.017	0.029	0.048	0.074	0.107	0.146	0.191	0.241	0.298	0.360	0.429	0.504	0.584				
1 1/4" X 3/16"	8.87	9.51	U	5920	2631	1480	947	658	483	370	292	237	196	164	140	121			0.507	
			D	0.018	0.035	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536	0.629	0.730				
			C	2960	1973	1480	1184	987	846	740	658	592	538	493	455	423				
			D	0.017	0.029	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"	7.23	7.87	U	5684	2526	1421	909	632	464	355	281	227	188	158	135	116	89	70	0.488	
			D	0.012	0.028	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	2842	1895	1421	1137	947	812	711	632	568	517	474	437	406	355	316		
			D	0.011	0.023	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 1/2" X 3/16"	10.51	11.15	U	8528	3790	2132	1364	947	696	533	421	341	282	237	202	174	133	105	0.730	
			D	0.012	0.028	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	4264	2843	2132	1705	1421	1218	1066	947	853	775	711	656	609	533	474		
			D	0.011	0.023	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 3/16"	12.17	12.81	U	11604	5157	2901	1857	1289	947	725	573	464	384	322	275	237	181	143	0.994	
			D	0.010	0.024	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	5802	3868	2901	2321	1934	1658	1451	1289	1161	1055	967	893	829	725	645		
			D	0.011	0.020	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 3/16"	13.81	14.45	U	15156	6736	3789	2425	1684	1237	947	749	606	501	421	359	309	237	187	1.299	
			D	0.010	0.021	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	7578	5052	3789	3032	2526	2165	1895	1684	1516	1378	1263	1166	1083	947	842		
			D	0.005	0.016	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"	15.45	16.09	U	19184	8526	4796	3069	2132	1566	1199	947	767	634	533	454	392	300	237	1.644	
			D	0.004	0.017	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	9592	6395	4796	3837	3197	2741	2398	2132	1918	1744	1599	1476	1370	1199	1066		
			D	0.008	0.015	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"	17.11	17.75	U	23684	10526	5921	3789	2632	1933	1480	1170	947	783	658	561	483	370	292	2.029	
			D	0.005	0.016	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	11842	7895	5921	4737	3947	3383	2961	2632	2368	2153	1974	1822	1692	1480	1316		
			D	0.010	0.015	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		

Maximum allowable fiber stress of 18,000 P.S.I





BAR GRATING - STEEL

IMPERIAL - Type 15-4 Spacing

15-4

15/16"

TABLE OF SAFE LOADS

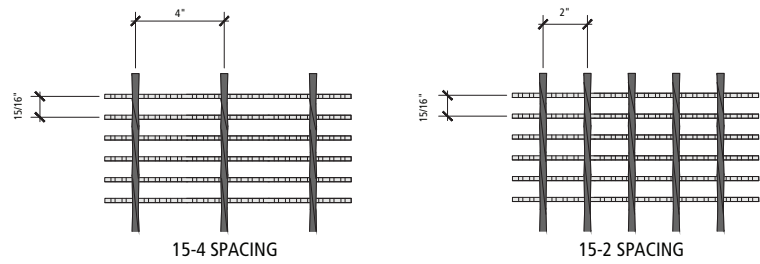
- U** - Safe Uniform Load, in lbs. per sq. ft.
- C** - Safe Concentrated Load, in lbs. per foot of grating width
- D** - Deflection in inches

For serrated surface, increase depth by 1/4" for load rate.

GENERAL

Loads and deflections are theoretical and based on static loading.

Note: Spans to the right of heavy line not recommended. Deflections shown based on tabulated loadings. For lesser design loads reduce deflection in direct proportion. For serrated surface increase depth by one size.



STANDARD STEEL TYPE 15-4																			
SIZE OF BEARING BAR	APPROX. WT/LBS/SQ.FT		SPAN IN INCHES												SEC. MOD. PER FEET OF WIDTH				
	TYPE 15-4	TYPE 15-2	1'-0"	1'-6"	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 1/8"	4.70		U	1800	800	450	288	200	147	113	89								0.150
			D	0.023	0.055	0.099	0.155	0.223	0.304	0.397	0.503								
			C	900	600	450	360	300	257	225	200								
			D	0.019	0.044	0.079	0.124	0.179	0.243	0.318	0.402								
3/4" X 3/16"	6.90		U	2700	1200	675	432	300	220	169	133	108							0.225
			D	0.023	0.055	0.099	0.155	0.223	0.304	0.397	0.503	0.621							
			C	1350	900	675	540	450	386	338	300	270							
			D	0.019	0.044	0.079	0.124	0.179	0.243	0.318	0.402	0.497							
1" X 1/8"	6.10	6.70	U	3200	1422	800	512	356	261	200	158	128	106	89					0.267
			D	0.020	0.042	0.074	0.116	0.168	0.228	0.298	0.377	0.466	0.563	0.670					
			C	1600	1067	800	640	533	457	400	356	320	291	267					
			D	0.018	0.035	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536					
1" X 3/16"	8.90	9.60	U	4800	2133	1200	768	533	392	300	237	192	159	133					0.400
			D	0.020	0.042	0.074	0.116	0.168	0.228	0.298	0.377	0.466	0.563	0.670					
			C	2400	1600	1200	960	800	686	600	533	480	436	400					
			D	0.018	0.035	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536					
1 1/4" X 1/8"	7.50	8.10	U	5000	2222	1250	800	556	408	313	247	200	165	139	118	102			0.417
			D	0.018	0.035	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536	0.629	0.730			
			C	2500	1667	1250	1000	833	714	625	556	500	455	417	385	357			
			D	0.017	0.029	0.048	0.074	0.107	0.146	0.191	0.241	0.298	0.360	0.429	0.504	0.584			
1 1/4" X 3/16"	11.00	11.60	U	7500	3333	1875	1200	833	612	469	370	300	248	208	178	153			0.625
			D	0.018	0.035	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536	0.629	0.730			
			C	3750	2500	1875	1500	1250	1071	938	833	750	682	625	577	536			
			D	0.017	0.029	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"	8.90	9.40	U	7200	3200	1800	1152	800	588	450	356	288	238	200	170	147	113	89	6.000
			D	0.015	0.029	0.050	0.078	0.113	0.152	0.199	0.251	0.310	0.376	0.447	0.524	0.608	0.794	1.006	
			C	3600	2400	1800	1440	1200	1029	900	800	720	655	600	554	514	450	400	
			D	0.011	0.023	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 1/2" X 3/16"	13.10	13.70	U	10800	4800	2700	1728	1200	882	675	533	432	357	300	256	220	169	133	9.000
			D	0.012	0.028	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	5400	3600	2700	2160	1800	1543	1350	1200	1080	982	900	831	771	675	600	
			D	0.011	0.023	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 3/16"	15.20	15.80	U	14700	6533	3675	2352	1633	1200	919	726	588	486	408	348	300	230	181	1.225
			D	0.010	0.024	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	7350	4900	3675	2940	2450	2100	1838	1633	1470	1336	1225	1131	1050	919	817	
			D	0.011	0.020	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 3/16"	17.30	17.90	U	19200	8533	4800	3072	2133	1567	1200	948	768	635	533	454	392	300	237	1.600
			D	0.010	0.021	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	9600	6400	4800	3840	3200	2743	2400	2133	1920	1745	1600	1477	1371	1200	1067	
			D	0.005	0.016	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"	19.40	20.00	U	24300	10800	6075	3888	2700	1984	1519	1200	972	803	675	575	496	380	300	2.025
			D	0.004	0.017	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	12150	8100	6075	4860	4050	3471	3038	2700	2430	2209	2025	1869	1736	1519	1350	
			D	0.008	0.015	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"	21.40	22.00	U	30000	13333	7500	4800	3333	2449	1875	1481	1200	992	833	710	612	469	370	2.500
			D	0.005	0.016	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	15000	10000	7500	6000	5000	4286	3750	3333	3000	2727	2500	2308	2143	1875	1667	
			D	0.010	0.015	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	

Maximum allowable fiber stress of 18,000 P.S.I





BAR GRATING - STEEL

METRIC - Type 24-102 Spacing

24-102

24mm

1
BAR
GRATING

TABLE OF SAFE LOADS

U - Safe Uniform Load, in kPa

C - Safe Concentrated Load, in kN per meter

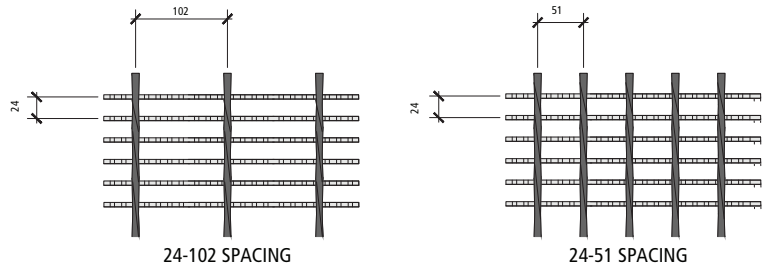
D - Deflection in millimeters

Note: Spans to the right of heavy line not recommended. Deflections shown based on tabulated loadings. For lesser design loads reduce deflection in direct proportion. For serrated surface increase depth by one size.

For serrated surface, increase depth by 7mm for load rate.

GENERAL

Loads and deflections are theoretical and based on static loading.



STANDARD STEEL TYPE 24-102																			
SIZE OF BEARING BAR	APPROX. WT/KG/M2		SPAN IN MILLIMETER														SEC. MOD. PER 305mm OF WIDTH		
	TYPE 24-102	TYPE 24-51	305	458	610	762	915	1067	1219	1372	1524	1676	1829	1981	2133	2438		2743	
19 x 3.2	22.95		U	86.22	38.32	21.56	13.80	9.58	7.04	5.41	4.26							2.460	
			D	0.6	1.4	2.5	3.9	5.7	7.7	10.1	12.8								
			C	13.13	8.75	6.57	5.25	4.38	3.75	3.28	2.92								
			D	0.5	1.1	2.0	3.1	4.5	6.2	8.1	10.2								
19 x 4.8	33.69		U	129.33	57.48	32.33	20.69	14.37	10.54	8.10	6.37	5.17						3.690	
			D	0.6	1.4	2.5	3.9	5.7	7.7	10.1	12.8	15.8							
			C	19.70	13.13	9.85	7.88	6.57	5.63	4.93	4.38	3.94							
			D	0.5	1.1	2.0	3.1	4.5	6.2	8.1	10.2	12.6							
25 x 3.2	29.78	32.71	U	153.28	68.12	38.32	24.52	17.05	12.50	9.58	7.57	6.13	5.08	4.26				4.379	
			D	0.5	1.1	1.9	2.9	4.3	5.8	7.6	9.6	11.8	14.3	17.0					
			C	23.34	15.56	11.67	9.34	7.78	6.67	5.84	5.19	4.67	4.25	3.90					
			D	0.5	0.9	1.5	2.4	3.4	4.6	6.0	7.7	9.4	11.5	13.6					
25 x 4.8	43.45	46.87	U	229.92	102.19	57.48	36.79	25.53	18.78	14.37	11.35	9.20	7.62	6.37				6.560	
			D	0.5	1.1	1.9	2.9	4.3	5.8	7.6	9.6	11.8	14.3	17.0					
			C	35.02	23.34	17.51	14.01	11.67	10.01	8.75	7.78	7.00	6.36	5.84					
			D	0.5	0.9	1.5	2.4	3.4	4.6	6.0	7.7	9.4	11.5	13.6					
32 x 3.2	36.62	39.55	U	239.50	106.44	59.88	38.32	26.63	19.54	14.99	11.83	9.58	7.90	6.66	5.65	4.89		6.839	
			D	0.5	0.9	1.5	2.4	3.4	4.6	6.0	7.7	9.4	11.5	13.6	16.0	18.5			
			C	36.48	24.32	18.24	14.59	12.15	10.42	9.12	8.11	7.30	6.64	6.08	5.62	5.21			
			D	0.4	0.7	1.2	1.9	2.7	3.7	4.9	6.1	7.6	9.1	10.9	12.8	14.8			
32 x 4.8	53.71	56.64	U	359.25	159.67	89.81	57.48	39.90	29.31	22.47	17.72	14.37	11.88	9.96	8.53	7.33		10.250	
			D	0.5	0.9	1.5	2.4	3.4	4.6	6.0	7.7	9.4	11.5	13.6	16.0	18.5			
			C	54.71	36.48	27.36	21.89	18.24	15.63	13.69	12.15	10.94	9.95	9.12	8.42	7.82			
			D	0.4	0.7	1.2	1.9	2.7	3.7	4.9	6.1	7.6	9.1	10.9	12.8	14.8			
38 x 3.2	43.45	45.89	U	344.88	153.28	86.22	55.18	38.32	28.17	21.56	17.05	13.80	11.40	9.58	8.14	7.04	5.41	4.26	98.400
			D	0.4	0.7	1.3	2.0	2.9	3.9	5.1	6.4	7.9	9.6	11.4	13.3	15.4	20.2	25.6	
			C	52.52	35.02	26.26	21.01	17.51	15.01	13.13	11.67	10.50	9.56	8.75	8.08	7.50	6.57	5.84	
			D	0.3	0.6	1.0	1.6	2.3	3.1	4.0	5.1	6.3	7.6	9.1	10.7	12.4	16.2	20.4	
38 x 4.8	63.96	66.89	U	517.32	229.92	129.33	82.77	57.48	42.25	32.33	25.53	20.69	17.10	14.37	12.26	10.54	8.10	6.37	147.600
			D	0.3	0.7	1.3	2.0	2.8	3.9	5.1	6.4	7.9	9.6	11.4	13.3	15.4	20.2	25.6	
			C	78.79	52.52	39.39	31.51	26.26	22.51	19.70	17.51	15.76	14.33	13.13	12.12	11.25	9.85	8.75	
			D	0.3	0.6	1.0	1.6	2.3	3.1	4.0	5.1	6.3	7.6	9.1	10.7	12.4	16.2	20.4	
45 x 4.8	74.21	77.14	U	704.13	312.95	176.03	112.66	78.22	57.48	44.02	34.78	28.17	23.28	19.54	16.67	14.37	11.02	8.67	20.090
			D	0.3	0.6	1.1	1.7	2.4	3.3	4.3	5.5	6.8	8.2	9.7	11.4	13.2	17.3	21.9	
			C	107.24	71.49	53.62	42.89	35.75	30.64	26.82	23.83	21.45	19.49	17.87	16.50	15.32	13.41	11.92	
			D	0.3	0.5	0.9	1.3	2.0	2.6	3.5	4.4	5.4	6.5	7.8	9.1	10.6	13.8	17.5	
51 x 4.8	84.47	87.39	U	919.68	408.75	229.92	147.15	102.17	75.06	57.48	45.41	36.79	30.42	25.53	21.75	18.78	14.37	11.35	26.240
			D	0.3	0.5	0.9	1.5	2.1	2.9	3.8	4.8	5.9	7.2	8.5	10.0	11.6	15.1	19.2	
			C	140.06	93.38	70.03	56.03	46.69	40.02	35.02	31.12	28.01	25.46	23.34	21.55	20.00	17.51	15.57	
			D	0.1	0.4	0.8	1.2	1.7	2.3	3.0	3.8	4.7	5.7	6.8	8.0	9.3	12.1	15.3	
57 x 4.8	94.72	97.65	U	1163.97	517.32	290.99	186.24	129.33	95.03	72.76	57.48	46.56	38.46	32.33	27.54	23.76	18.20	14.37	33.210
			D	0.1	0.4	0.8	1.3	1.9	2.6	3.4	4.3	5.3	6.4	7.6	8.9	10.3	13.5	17.0	
			C	177.27	118.18	88.63	70.91	59.09	50.64	44.32	39.39	35.45	32.23	29.54	27.27	25.33	22.16	19.70	
			D	0.2	0.4	0.7	1.0	1.5	2.1	2.7	3.4	4.2	5.1	6.0	7.1	8.2	10.8	13.6	
64 x 4.8	104.48	107.41	U	1437.00	638.67	359.25	229.92	159.65	117.31	89.81	70.94	57.48	47.52	39.90	34.01	29.31	22.47	17.72	41.000
			D	0.1	0.4	0.8	1.2	1.7	2.3	3.0	3.8	4.7	5.7	6.8	8.0	9.3	12.1	15.3	
			C	218.85	145.90	109.43	87.54	72.95	62.53	54.71	48.63	43.77	39.79	36.48	33.67	31.27	27.36	24.32	
			D	0.3	0.4	0.6	0.9	1.4	1.9	2.4	3.1	3.8	4.6	5.5	6.4	7.4	9.7	12.3	

Maximum allowable fiber stress of 124 M.P.A





BAR GRATING - STEEL

IMPERIAL - Type 13-4 Spacing

13-4

13/16"

TABLE OF SAFE LOADS

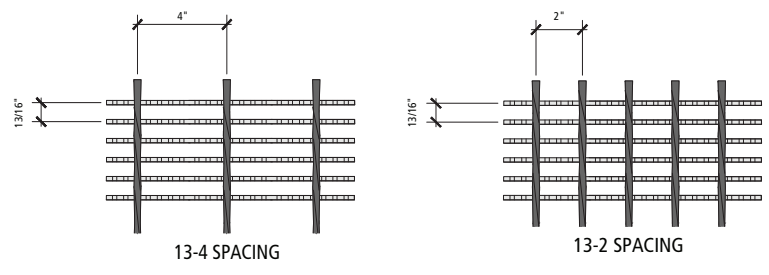
- U** - Safe Uniform Load, in lbs. per sq. ft.
- C** - Safe Concentrated Load, in lbs. per foot of grating width
- D** - Deflection in inches

Note: Spans to the right of heavy line not recommended. Deflections shown based on tabulated loadings. For lesser design loads reduce deflection in direct proportion. For serrated surface increase depth by one size.

For serrated surface, increase depth by 1/4" for load rate.

GENERAL

Loads and deflections are theoretical and based on static loading.



STANDARD STEEL TYPE 13-4																				
SIZE OF BEARING BAR	APPROX. WT/LBS/SQ.FT		SPAN IN INCHES														SEC. MOD. PER FEET OF WIDTH			
	TYPE 13-4	TYPE 13-2	1'-0"	1'-6"	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 1/8"	5.30		U	2076	923	519	332	231	170	130	103									
			D	0.023	0.055	0.099	0.155	0.223	0.304	0.391	0.503									
			C	1038	692	519	415	346	297	260	231									
			D	0.019	0.044	0.079	0.124	0.179	0.243	0.318	0.402									
3/4" X 3/16"	7.80		U	3116	1385	779	498	346	254	195	154	125								
			D	0.023	0.055	0.099	0.155	0.223	0.304	0.397	0.503	0.621								
			C	1558	1039	779	623	519	445	389	346	312								
			D	0.019	0.044	0.079	0.124	0.179	0.243	0.318	0.402	0.497								
1" X 1/8"	7.50	7.50	U	3692	1641	923	591	410	301	231	182	148	122	103						
			D	0.020	0.042	0.074	0.116	0.168	0.228	0.298	0.377	0.466	0.563	0.670						
			C	1846	1231	923	738	615	527	462	410	369	336	308						
			D	0.018	0.035	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536						
1" X 3/16"	10.20	10.80	U	5540	2462	1385	886	615	452	346	274	222	183	154						
			D	0.020	0.042	0.074	0.116	0.168	0.228	0.298	0.377	0.466	0.563	0.670						
			C	2770	1847	1385	1108	923	791	692	615	554	503	462						
			D	0.018	0.035	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536						
1 1/4" X 1/8"	8.50	9.10	U	5768	2564	1442	923	641	471	361	285	231	191	160	137	118				
			D	0.018	0.035	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536	0.629	0.730				
			C	2884	1923	1442	1154	962	824	721	641	577	524	481	444	412				
			D	0.017	0.029	0.048	0.074	0.107	0.146	0.191	0.241	0.298	0.360	0.429	0.504	0.584				
1 1/4" X 3/16"	12.60	13.20	U	8652	3845	2163	1385	962	706	541	427	346	286	240	205	177				
			D	0.018	0.035	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536	0.629	0.730				
			C	4326	2884	2163	1731	1442	1236	1082	962	865	787	721	666	618				
			D	0.017	0.029	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"	10.10	10.70	U	8308	3692	2077	1329	923	678	519	410	332	275	231	197	170	130	103		
			D	0.015	0.029	0.050	0.078	0.113	0.152	0.199	0.251	0.310	0.376	0.447	0.524	0.608	0.794	1.006		
			C	4154	2769	2077	1662	1385	1187	1038	923	831	755	692	639	593	519	462		
			D	0.011	0.023	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 1/2" X 3/16"	15.00	15.60	U	12460	5538	3115	1994	1385	1017	779	615	498	412	346	295	254	195	154		
			D	0.012	0.028	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	6230	4153	3115	2492	2077	1780	1558	1385	1246	1133	1038	959	890	779	692		
			D	0.011	0.023	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 3/16"	17.40	18.00	U	16960	7538	4240	2714	1885	1385	1060	838	678	561	471	401	346	265	209		
			D	0.010	0.024	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	8480	5653	4240	3392	2827	2423	2120	1885	1696	1542	1413	1305	1212	1060	942		
			D	0.011	0.020	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 3/16"	19.80	20.40	U	22152	9845	5538	3545	2462	1808	1385	1094	886	732	615	524	452	346	274		
			D	0.010	0.021	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	11076	7384	5538	4431	3692	3165	2769	2462	2215	2014	1846	1704	1582	1385	1231		
			D	0.005	0.016	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"	22.20	22.80	U	28040	12462	7010	4486	3115	2289	1752	1385	1122	927	779	664	572	438	346		
			D	0.004	0.017	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	14020	9347	7010	5608	4673	4005	3505	3115	2804	2549	2337	2157	2003	1752	1558		
			D	0.008	0.015	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"	24.60	25.20	U	34616	15385	8654	5538	3846	2826	2163	1709	1385	1144	962	819	706	541	427		
			D	0.005	0.016	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	17308	11539	8654	6923	5769	4945	4327	3846	3462	3147	2885	2663	2473	2163	1923		
			D	0.010	0.015	0.024	0.037	0.054	0.073	0.095	0.121	0.149	0.180	0.215	0.255	0.292	0.381	0.483		

Maximum allowable fiber stress of 18,000 P.S.I





BAR GRATING - STEEL

METRIC - Type 21-102 Spacing

21-102

21mm

1
BAR
GRATING

TABLE OF SAFE LOADS

U - Safe Uniform Load, in kPa

C - Safe Concentrated Load, in kN per meter

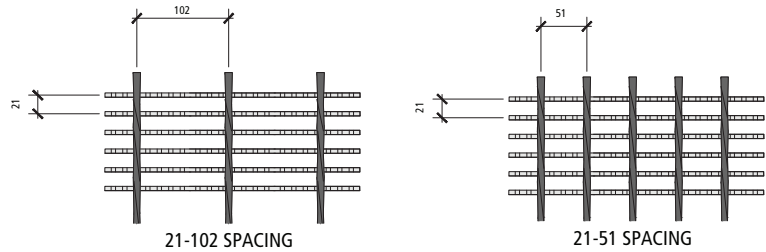
D - Deflection in millimeters

Note: Spans to the right of heavy line not recommended. Deflections shown based on tabulated loadings. For lesser design loads reduce deflection in direct proportion. For serrated surface increase depth by one size.

For serrated surface, increase depth by 7mm for load rate.

GENERAL

Loads and deflections are theoretical and based on static loading.



STANDARD STEEL TYPE 21-102																			
SIZE OF BEARING BAR	APPROX. WT/KG/M2		SPAN IN MILLIMETER														SEC. MOD. PER 305mm OF WIDTH		
	TYPE 21-102	TYPE 21-51	305	458	610	762	915	1067	1219	1372	1524	1676	1829	1981	2133	2438		2743	
19 x 3.2	25.88		U	99.44	44.20	24.86	15.90	11.06	8.14	6.23	4.93							2.837	
			D	0.6	1.4	2.5	3.9	5.7	7.7	9.9	12.8								
			C	15.14	10.10	7.57	6.05	5.05	4.33	3.79	3.37								
			D	0.5	1.1	2.0	3.1	4.5	6.2	8.1	10.2								
19 x 4.8	38.08		U	149.26	66.34	37.31	23.85	16.57	12.17	9.34	7.38	5.99						4.264	
			D	0.6	1.4	2.5	3.9	5.7	7.7	10.1	12.8	15.8							
			C	22.73	15.15	11.37	9.09	7.57	6.49	5.68	5.05	4.55							
			D	0.5	1.1	2.0	3.1	4.5	6.2	8.1	10.2	12.6							
25 x 3.2	36.62	36.62	U	176.85	78.60	44.21	28.31	19.64	14.42	11.06	8.72	7.09	5.84	4.93				5.051	
			D	0.5	1.1	1.9	2.9	4.3	5.8	7.6	9.6	11.8	14.3	17.0					
			C	26.93	17.96	13.47	10.77	8.97	7.69	6.74	5.98	5.38	4.90	4.49					
			D	0.5	0.9	1.5	2.4	3.4	4.6	6.0	7.7	9.4	11.5	13.6					
25 x 4.8	49.80	52.73	U	265.37	117.94	66.34	42.44	29.46	21.65	16.57	13.12	10.63	8.77	7.38				7.577	
			D	0.5	1.1	1.9	2.9	4.3	5.8	7.6	9.6	11.8	14.3	17.0					
			C	40.41	26.94	20.21	16.17	13.47	11.54	10.10	8.97	8.08	7.34	6.74					
			D	0.5	0.9	1.5	2.4	3.4	4.6	6.0	7.7	9.4	11.5	13.6					
32 x 3.2	41.50	44.43	U	276.29	122.79	69.07	44.21	30.70	22.56	17.29	13.65	11.06	9.15	7.66	6.56	5.65		7.888	
			D	0.5	0.9	1.5	2.4	3.4	4.6	6.0	7.7	9.4	11.5	13.6	16.0	18.5			
			C	42.08	28.05	21.04	16.84	14.04	12.02	10.52	9.35	8.42	7.65	7.02	6.48	6.01			
			D	0.4	0.7	1.2	1.9	2.7	3.7	4.9	6.1	7.6	9.1	10.9	12.8	14.8			
32 x 4.8	61.52	64.45	U	414.43	184.19	103.61	66.34	46.08	33.82	25.91	20.45	16.57	13.70	11.50	9.82	8.48		11.824	
			D	0.5	0.9	1.5	2.4	3.4	4.6	6.0	7.7	9.4	11.5	13.6	16.0	18.5			
			C	63.12	42.08	31.56	25.26	21.04	18.03	15.79	14.04	12.62	11.48	10.52	9.72	9.02			
			D	0.4	0.7	1.2	1.9	2.7	3.7	4.9	6.1	7.6	9.1	10.9	12.8	14.8			
38 x 3.2	49.31	52.24	U	397.95	176.87	99.49	63.66	44.21	32.48	24.86	19.64	15.90	13.17	11.06	9.44	8.14	6.23	4.93	11.349
			D	0.4	0.7	1.3	2.0	2.9	3.9	5.1	6.4	7.9	9.6	11.4	13.3	15.4	20.2	25.6	
			C	60.61	40.40	30.30	24.25	20.21	17.32	15.14	13.47	12.12	11.02	10.10	9.32	8.65	7.57	6.74	
			D	0.3	0.6	1.0	1.6	2.3	3.1	4.0	5.1	6.3	7.6	9.1	10.7	12.4	16.2	20.4	
38 x 4.8	73.24	76.17	U	596.83	265.26	149.21	95.51	66.34	48.71	37.31	29.46	23.85	19.73	16.57	14.13	12.17	9.34	7.38	17.023
			D	0.3	0.7	1.3	2.0	2.8	3.9	5.1	6.4	7.9	9.6	11.4	13.3	15.4	20.2	25.6	
			C	90.90	60.60	45.45	36.36	30.30	25.97	22.73	20.21	18.18	16.53	15.14	13.99	12.99	11.37	10.10	
			D	0.3	0.6	1.0	1.6	2.3	3.1	4.0	5.1	6.3	7.6	9.1	10.7	12.4	16.2	20.4	
45 x 4.8	84.95	87.88	U	812.38	361.06	203.10	130.00	90.29	66.34	50.77	40.14	32.48	26.87	22.56	19.21	16.57	12.69	10.01	23.173
			D	0.3	0.6	1.1	1.7	2.4	3.3	4.3	5.5	6.8	8.2	9.7	11.4	13.2	17.3	21.9	
			C	123.72	82.48	61.86	49.49	41.25	35.35	30.93	27.50	24.74	22.50	20.62	19.04	17.68	15.47	13.74	
			D	0.3	0.5	0.9	1.3	2.0	2.6	3.5	4.4	5.4	6.5	7.8	9.1	10.6	13.8	17.5	
51 x 4.8	96.67	99.60	U	1061.08	471.59	265.27	169.81	117.93	86.60	66.34	52.40	42.44	35.06	29.46	25.10	21.65	16.57	13.12	30.274
			D	0.3	0.5	0.9	1.5	2.1	2.9	3.8	4.8	5.9	7.2	8.5	10.0	11.6	15.1	19.2	
			C	161.60	107.73	80.80	64.65	53.87	46.18	40.40	35.92	32.32	29.38	26.93	24.86	23.08	20.21	17.96	
			D	0.1	0.4	0.8	1.2	1.7	2.3	3.0	3.8	4.7	5.7	6.8	8.0	9.3	12.1	15.3	
57 x 4.8	108.39	111.32	U	1343.12	596.94	335.78	214.88	149.21	109.64	83.92	66.34	53.74	44.40	37.31	31.81	27.40	20.98	16.57	38.327
			D	0.1	0.4	0.8	1.3	1.9	2.6	3.4	4.3	5.3	6.4	7.6	8.9	10.3	13.5	17.0	
			C	204.55	136.37	102.28	81.82	68.18	58.43	51.14	45.45	40.91	37.19	34.10	31.47	29.22	25.56	22.73	
			D	0.2	0.4	0.7	1.0	1.5	2.1	2.7	3.4	4.2	5.1	6.0	7.1	8.2	10.8	13.6	
64 x 4.8	120.11	123.04	U	1658.11	736.94	414.53	265.27	184.22	135.37	103.61	81.86	66.34	54.80	46.08	39.23	33.82	25.91	20.45	47.314
			D	0.1	0.4	0.8	1.2	1.7	2.3	3.0	3.8	4.7	5.7	6.8	8.0	9.3	12.1	15.3	
			C	252.52	168.35	126.26	101.01	84.17	72.15	63.13	56.11	50.51	45.91	42.09	38.85	36.08	31.56	28.06	
			D	0.3	0.4	0.6	0.9	1.4	1.9	2.4	3.1	3.8	4.6	5.5	6.5	7.4	9.7	12.3	

Maximum allowable fiber stress of 124 M.P.A





BAR GRATING - STEEL

IMPERIAL - Type 10-4 Spacing

10-4
10/16"

TABLE OF SAFE LOADS

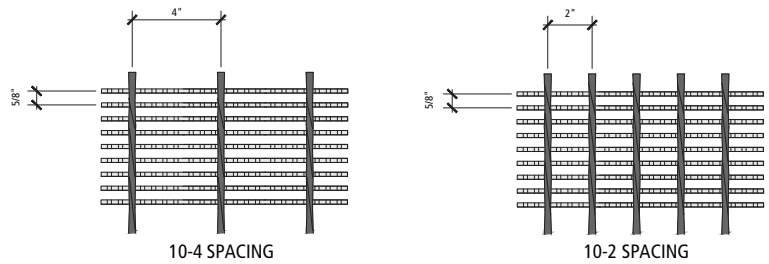
- U** - Safe Uniform Load, in lbs. per sq. ft.
- C** - Safe Concentrated Load, in lbs. per foot of grating width
- D** - Deflection in inches

For serrated surface, increase depth by 1/4" for load rate.

GENERAL

Loads and deflections are theoretical and based on static loading.

Note: Spans to the right of heavy line not recommended. Deflections shown based on tabulated loadings. For lesser design loads reduce deflection in direct proportion. For serrated surface increase depth by one size.



STANDARD STEEL TYPE 10-4																					
SIZE OF BEARING BAR	APPROX. WT/LBS/SQ.FT			SPAN IN INCHES												SEC. MOD. PER FEET OF WIDTH					
	TYPE 10-4	TYPE 10-2		1'-0"	1'-6"	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 1/8"	6.80		U	2700	1200	675	432	300	220	169	133	108							0.225		
			D	0.023	0.055	0.099	0.155	0.223	0.304	0.397	0.503	0.621									
			C	1350	900	675	540	450	386	338	300	270									
			D	0.019	0.044	0.079	0.124	0.179	0.243	0.318	0.402	0.467									
3/4" X 3/16"	9.90		U	4052	1801	1013	648	450	331	253	200	162	134				0.338				
			D	0.023	0.055	0.099	0.155	0.223	0.304	0.397	0.503	0.621	0.751								
			C	2026	1351	1013	810	675	579	506	450	405	368								
			D	0.019	0.044	0.079	0.124	0.179	0.243	0.318	0.402	0.497	0.601								
1" X 1/8"	8.80	9.40	U	4800	2133	1200	768	533	392	300	237	192	159	133					0.400		
			D	-0.380	-0.108	0.074	0.166	0.168	0.228	0.298	0.377	0.466	0.563	0.670							
			C	2400	1600	1200	960	800	686	600	533	480	436	400							
			D	0.018	0.035	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536							
1" X 3/16"	13.00	13.60	U	7200	3200	1800	1152	800	588	450	356	288	238	200	170				0.600		
			D	0.020	0.042	0.074	0.116	0.168	0.228	0.298	0.377	0.466	0.563	0.670	0.787						
			C	3600	2400	1800	1440	1200	1029	900	800	720	655	600	554						
			D	0.018	0.035	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536	0.629						
1 1/4" X 1/8"	10.90	11.40	U	7500	3333	1875	1200	833	612	469	370	300	248	208	178	153			0.625		
			D	0.018	0.035	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536	0.629	0.730					
			C	3750	2500	1875	1500	1250	1071	938	833	750	682	625	557	536					
			D	0.017	0.029	0.048	0.074	0.107	0.146	0.191	0.241	0.298	0.360	0.429	0.504	0.584					
1 1/4" X 3/16"	16.10	16.70	U	11252	5001	2813	1800	1250	918	703	556	450	372	313	226	230	176			0.938	
			D	0.018	0.035	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536	0.629	0.730	0.953				
			C	5626	3751	2813	2250	1875	1607	1406	1250	1125	1023	938	865	804	703				
			D	0.017	0.029	0.048	0.074	0.107	0.146	0.191	0.241	0.298	0.360	0.429	0.504	0.584	0.763				
1 1/2" X 1/8"	13.00	13.50	U	10800	4800	2700	1728	1200	882	675	533	432	357	300	256	220	169	133			0.900
			D	0.012	0.028	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	5400	3600	2700	2160	1800	1543	1350	1200	1080	982	900	831	771	675	600			
			D	0.011	0.023	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 1/2" X 3/16"	19.20	19.80	U	16200	7200	4050	2592	1800	1322	1013	800	648	536	450	383	331	253	200			1.350
			D	0.012	0.028	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	8100	5400	4050	3240	2700	2314	2025	1800	1620	1473	1350	1246	1157	1013	900			
			D	0.011	0.023	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 3/16"	22.30	22.90	U	22052	9801	5513	3528	2450	1800	1378	1089	882	729	613	522	450	345	272			1.838
			D	0.010	0.024	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	11026	7351	5513	4410	3675	3150	2756	2450	2205	2005	1838	1696	1575	1378	1225			
			D	0.011	0.020	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 3/16"	25.40	26.00	U	28800	12800	7200	4608	3200	2351	1800	1422	1152	952	800	682	588	450	356			2.400
			D	0.010	0.021	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	14400	9600	7200	5760	4800	4114	3600	3200	2880	2618	2400	2215	2057	1800	1600			
			D	0.005	0.016	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"	28.50	29.10	U	36452	16201	9113	5832	4050	2976	2278	1800	1458	1205	1013	863	744	570	450			3.038
			D	0.004	0.017	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	18226	12151	9113	7290	6075	5207	4556	4050	3645	3314	3038	2804	2604	2278	2025			
			D	0.008	0.015	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"	31.60	32.20	U	45000	20000	11250	7200	5000	3673	2813	2222	1800	1488	1250	1065	918	703	556			3.750
			D	0.005	0.016	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	22500	15000	11250	9000	7500	6429	5625	5000	4500	4091	3750	3462	3214	2813	2500			
			D	0.010	0.015	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			

Maximum allowable fiber stress of 18,000 P.S.I.





BAR GRATING - STEEL

METRIC - Type 16-102 Spacing

16-102

16mm

1 BAR GRATING

TABLE OF SAFE LOADS

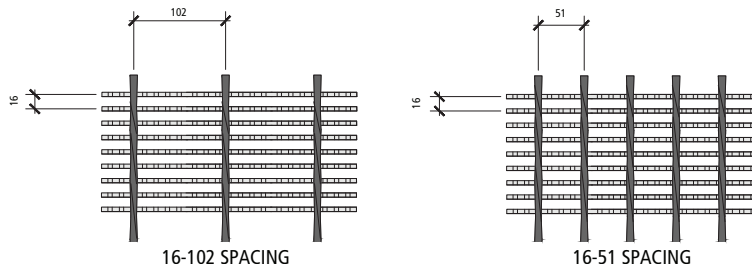
- U** - Safe Uniform Load, in kPa
- C** - Safe Concentrated Load, in kN per meter
- D** - Deflection in millimeters

For serrated surface, increase depth by 7mm for load rate.

GENERAL

Loads and deflections are theoretical and based on static loading.

Note: Spans to the right of heavy line not recommended. Deflections shown based on tabulated loadings. For lesser design loads reduce deflection in direct proportion. For serrated surface increase depth by one size.



STANDARD STEEL TYPE 16-102																				
SIZE OF BEARING BAR	APPROX. WT/KG/M2		SPAN IN MILLIMETER													SEC. MOD. PER 305mm OF WIDTH				
	TYPE 16-102	TYPE 16-51	305	458	610	762	915	1067	1219	1372	1524	1676	1829	1981	2133		2438	2743		
19 x 3.2	30.27		U	129.33	57.48	32.33	20.69	14.37	10.54	8.10	6.37	5.17							3.362	
			D	0.6	1.4	2.5	3.9	5.7	7.7	10.1	12.8	15.8								
			C	19.70	13.13	9.85	7.88	6.57	5.63	4.93	4.38	3.94								
			D	0.5	1.1	2.0	3.1	4.5	6.2	8.1	10.2	11.9								
19 x 4.8	44.43		U	194.09	86.26	48.52	31.04	21.56	15.85	12.12	9.58	7.76	6.42						5.035	
			D	0.6	1.4	2.5	3.9	5.7	7.7	10.1	12.8	15.8	19.1							
			C	29.56	19.71	14.78	11.82	9.85	8.45	7.38	6.57	5.91	5.37							
			D	0.5	1.1	2.0	3.1	4.5	6.2	8.1	10.2	12.6	15.3							
25 x 3.2	39.55	41.99	U	229.92	102.19	57.48	36.79	25.53	18.78	14.37	11.35	9.20	7.62	6.37					5.970	
			D	-9.7	-2.7	1.9	4.2	4.3	5.8	7.6	9.6	11.8	14.3	17.0						
			C	35.02	23.34	17.51	14.01	11.67	10.01	8.75	7.78	7.00	6.36	5.84						
			D	0.5	0.9	1.5	2.4	3.4	4.6	6.0	7.7	9.4	11.5	13.6						
25 x 4.8	58.10	61.03	U	344.88	153.28	86.22	55.18	38.32	28.17	21.56	17.05	13.80	11.40	9.58	8.14				8.938	
			D	0.5	1.1	1.9	2.9	4.3	5.8	7.6	9.6	11.8	14.3	17.0	20.0					
			C	52.52	35.02	26.26	21.01	17.51	15.01	13.13	11.67	10.50	9.56	8.75	8.08					
			D	0.5	0.9	1.5	2.4	3.4	4.6	6.0	7.7	9.4	11.5	13.6	16.0					
32 x 3.2	48.82	51.27	U	359.25	159.67	89.81	57.48	39.90	29.31	22.47	17.72	14.37	11.88	9.96	8.53	7.33			9.315	
			D	0.5	0.9	1.5	2.4	3.4	4.6	6.0	7.7	9.4	11.5	13.6	16.0	18.5				
			C	54.71	36.48	27.36	21.89	18.24	15.63	13.69	12.15	10.94	9.95	9.12	8.13	7.82				
			D	0.4	0.7	1.2	1.9	2.7	3.7	4.9	6.1	7.6	9.1	10.9	12.8	14.8				
32 x 4.8	71.77	74.70	U	538.97	239.54	134.74	86.22	59.88	43.97	33.67	26.63	21.56	17.82	14.99	10.83	11.02	8.43		13.973	
			D	0.5	0.9	1.5	2.4	3.4	4.6	6.0	7.7	9.4	11.5	13.6	16.0	18.5	24.2			
			C	82.08	54.72	41.04	32.83	27.36	23.45	20.51	18.24	16.41	14.93	13.69	12.62	11.73	10.26			
			D	0.4	0.7	1.2	1.9	2.7	3.7	4.9	6.1	7.6	9.1	10.9	12.8	14.8	19.4			
38 x 3.2	58.10	60.54	U	517.32	229.92	129.33	82.77	57.48	42.25	32.33	25.53	20.69	17.10	14.37	12.26	10.54	8.10	6.37	13.415	
			D	0.3	0.7	1.3	2.0	2.8	3.9	5.1	6.4	7.9	9.6	11.4	13.3	15.4	20.2	25.6		
			C	78.79	52.52	39.39	31.51	26.26	22.51	19.70	17.51	15.76	14.33	13.13	12.12	11.25	9.85	8.75		
			D	0.3	0.6	1.0	1.6	2.3	3.1	4.0	5.1	6.3	7.6	9.1	10.7	12.4	16.2	20.4		
38 x 4.8	85.44	88.37	U	775.98	344.88	194.00	124.16	86.22	63.32	48.52	38.32	31.04	25.67	21.56	18.35	15.85	12.12	9.58	20.123	
			D	0.3	0.7	1.3	2.0	2.8	3.9	5.1	6.4	7.9	9.6	11.4	13.3	15.4	20.2	25.6		
			C	118.18	78.79	59.09	47.27	39.39	33.76	29.54	26.26	23.64	21.49	19.70	18.18	16.88	14.78	13.13		
			D	0.3	0.6	1.0	1.6	2.3	3.1	4.0	5.1	6.3	7.6	9.1	10.7	12.4	16.2	20.4		
45 x 4.8	99.60	102.53	U	1056.29	469.46	264.07	168.99	117.36	86.22	66.01	52.16	42.25	34.92	29.36	25.00	21.56	16.53	13.03	27.388	
			D	0.3	0.6	1.1	1.7	2.4	3.3	4.3	5.5	6.8	8.2	9.7	11.4	13.2	17.3	21.9		
			C	160.87	107.25	80.43	64.34	53.62	45.96	40.21	35.75	32.17	29.25	26.82	24.74	22.98	20.11	17.87		
			D	0.3	0.5	0.9	1.3	2.0	2.6	3.5	4.4	5.4	6.5	7.8	9.1	10.6	13.8	17.5		
51 x 4.8	113.27	116.20	U	1379.52	613.12	344.88	220.72	153.28	112.61	86.22	68.11	55.18	45.60	38.32	32.67	28.17	21.56	17.05	35.785	
			D	0.3	0.5	0.9	1.5	2.1	2.9	3.8	4.8	5.9	7.2	8.5	10.0	11.6	15.1	19.2		
			C	210.10	140.06	105.05	84.04	70.03	60.02	52.52	46.69	42.02	38.20	35.02	32.32	30.01	26.26	23.34		
			D	0.1	0.4	0.8	1.2	1.7	2.3	3.0	3.8	4.7	5.7	6.8	8.0	9.3	12.1	15.3		
57 x 4.8	126.94	129.87	U	1746.05	776.02	436.51	279.35	194.00	142.55	109.12	86.22	69.84	57.72	48.52	41.34	35.64	27.30	21.56	45.280	
			D	0.1	0.4	0.8	1.3	1.9	2.6	3.4	4.3	5.3	6.4	7.6	8.9	10.3	13.5	17.0		
			C	265.92	177.28	132.96	106.36	88.63	75.97	66.47	59.09	53.18	48.35	44.32	40.91	37.99	33.24	29.54		
			D	0.2	0.4	0.7	1.0	1.5	2.1	2.7	3.4	4.2	5.1	6.0	7.1	8.2	10.8	13.6		
64 x 4.8	140.61	143.54	U	2155.50	958.00	538.88	344.88	239.50	175.94	134.74	106.43	86.22	71.28	59.88	51.01	43.97	33.67	26.63	55.908	
			D	0.1	0.4	0.8	1.2	1.7	2.3	3.0	3.8	4.7	5.7	6.8	8.0	9.3	12.1	15.3		
			C	328.28	218.85	164.14	131.31	109.43	93.80	82.07	72.95	65.66	59.69	54.71	50.51	46.89	41.04	36.48		
			D	0.3	0.4	0.6	0.9	1.4	1.9	2.4	3.1	3.8	4.6	5.5	6.4	7.4	9.7	12.3		

Maximum allowable fiber stress of 124 M.P.A





BAR GRATING - STEEL

IMPERIAL - Type 8-4 Spacing

8-4

8/16"

TABLE OF SAFE LOADS - IMPERIAL

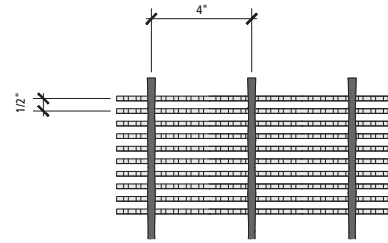
- U - Safe Uniform Load, in lbs. per sq. ft.
- C - Safe Concentrated Load, in lbs. per foot of grating width
- D - Deflection in inches

For serrated surface, increase depth by 1/4" for load rate.

GENERAL

Loads and deflections are theoretical and based on static loading.

Note: Spans to the right of heavy line not recommended. Deflections shown based on tabulated loadings. For lesser design loads reduce deflection in direct proportion. For serrated surface increase depth by one size.



8-4 SPACING

STANDARD STEEL TYPE 8-4																		
SIZE OF BEARING BAR	APPROX. WT/LBS/SQ.FT TYPE 8-4	SPAN IN INCHES											SEC. MOD. PER FEET OF WIDTH					
		1'-0"	1'-6"	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 1/8"	8.30	U	3376	1500	844	540	375	276	211	167	135							0.281
		D	0.023	0.055	0.099	0.155	0.223	0.304	0.397	0.503	0.621							
		C	1688	1125	844	675	563	482	422	375	338							
		D	0.019	0.044	0.079	0.124	0.179	0.243	0.318	0.402	0.491							
3/4" X 3/16"	10.90	U	5064	2251	1266	810	563	413	316	250	203	167						0.422
		D	0.023	0.055	0.099	0.155	0.223	0.304	0.397	0.503	0.621	0.751						
		C	2532	1688	1266	1013	844	723	633	563	506	460						
		D	0.019	0.044	0.079	0.124	0.179	0.243	0.318	0.402	0.497	0.601						
1" X 1/8"	10.90	U	6000	2667	1500	960	667	790	375	296	240	198	167					0.500
		D	0.020	0.042	0.074	0.116	0.168	0.228	0.298	0.377	0.466	0.563	0.670					
		C	3000	2000	1500	1200	1000	857	750	667	600	545	500					
		D	0.018	0.035	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536					
1" X 3/16"	16.00	U	9000	4000	2250	1440	1000	735	563	444	360	298	250	213				0.750
		D	0.020	0.042	0.074	0.116	0.168	0.228	0.298	0.377	0.466	0.563	0.670	0.787				
		C	4500	3000	2250	1800	1500	1286	1125	1000	900	818	750	692				
		D	0.018	0.035	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536	0.629				
1 1/4" X 1/8"	13.40	U	9376	4167	2344	1500	1042	765	586	463	375	310	260	222	191			0.781
		D	0.018	0.035	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536	0.629	0.730			
		C	4688	3125	2344	1875	1563	1339	1172	1042	937	852	781	721	670			
		D	0.017	0.029	0.048	0.074	0.107	0.146	0.191	0.241	0.298	0.360	0.429	0.504	0.584			
1 1/4" X 3/16"	19.90	U	14064	6251	3516	2250	1563	1148	879	694	563	465	391	333	287	220	174	1.172
		D	0.018	0.035	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536	0.629	0.730	0.953	1.207	
		C	7032	4688	3516	2813	2344	2009	1758	1563	1406	1278	1172	1082	1004	879	781	
		D	0.017	0.029	0.048	0.074	0.107	0.146	0.191	0.241	0.298	0.360	0.429	0.504	0.584	0.763	0.965	
1 1/2" X 1/8"	16.00	U	13500	6000	3375	2160	1500	1102	844	667	540	446	375	320	276	211	167	1.125
		D	0.012	0.028	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	6750	4500	3375	2700	2250	1929	1688	1500	1350	1227	1125	1038	967	844	750	
		D	0.011	0.023	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 1/2" X 3/16"	23.80	U	20252	9001	5063	3240	2250	1653	1266	1000	810	669	563	479	413	316	250	1.688
		D	0.012	0.028	0.050	0.078	0.112	0.152	0.199	0.250	0.310	0.376	0.447	0.524	0.608	0.794	1.006	
		C	10126	6751	5063	4050	3375	2893	2531	2250	2025	1841	1688	1558	1446	1266	1125	
		D	0.011	0.023	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 3/16"	27.40	U	27564	12251	6891	4410	3063	2250	1723	1361	1103	911	766	652	563	431	340	2.297
		D	0.010	0.024	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	13782	9188	6891	5513	4594	3938	3445	3063	2756	2506	2297	2120	1961	1723	1531	
		D	0.011	0.020	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 3/16"	31.32	U	36000	16000	9000	5760	4000	2939	2250	1778	1440	1190	1000	852	735	563	444	3.000
		D	0.010	0.021	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	18000	12000	9000	7200	6000	5143	4500	4000	3600	3273	3000	2769	2571	2250	2000	
		D	0.005	0.016	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"	35.13	U	45564	20251	11391	7290	5063	3719	2848	2250	1823	1506	1266	1078	930	712	563	3.797
		D	0.004	0.017	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	22782	15188	11391	9113	7594	6509	5695	5063	4556	4142	3797	3505	3254	2848	2531	
		D	0.026	0.024	0.029	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"	38.99	U	56252	25001	14063	9000	6250	4592	3516	2778	2250	1860	1563	1331	1148	879	964	4.688
		D	0.005	0.016	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	28126	18751	14063	11250	9375	8036	7031	6250	5625	5114	4688	4327	4018	3516	3125	
		D	0.010	0.015	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	

Maximum allowable fiber stress of 18,000 P.S.I.





BAR GRATING - STEEL

METRIC - Type 13-102 Spacing

13-102

13mm

1
BAR
GRATING

TABLE OF SAFE LOADS

U - Safe Uniform Load, in kPa

C - Safe Concentrated Load, in kN per meter

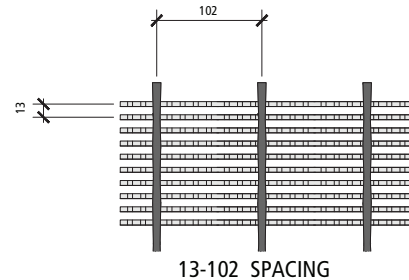
D - Deflection in millimeters

For serrated surface, increase depth by 7mm for load rate.

GENERAL

Loads and deflections are theoretical and based on static loading.

Note: Spans to the right of heavy line not recommended. Deflections shown based on tabulated loadings. For lesser design loads reduce deflection in direct proportion. For serrated surface increase depth by one size.



STANDARD STEEL TYPE 13-102

SIZE OF BEARING BAR	APPROX. WT/KG/M2	SPAN IN MILLIMETER														SEC.MOD. PER 305mm OF WIDTH		
		TYPE 12.7-102																
		305	458	610	762	915	1067	1219	1372	1524	1676	1829	1981	2133	2438	2743		
19 x 3.2	40.52	U	161.71	71.87	40.43	25.87	17.96	13.22	10.11	8.00	6.47						4.608	
		D	0.6	1.4	2.5	3.9	5.7	7.7	10.1	12.8	15.8							
		C	24.63	16.42	12.31	9.85	8.21	7.03	6.16	5.47	4.93							
		D	0.5	1.1	2.0	3.1	4.5	6.2	8.1	10.2	12.5							
		U	242.57	107.81	60.64	38.80	26.97	19.78	15.14	11.98	9.72	8.00						
19 x 4.8	53.22	D	0.6	1.4	2.5	3.9	5.7	7.7	10.1	12.8	15.8	19.1					6.921	
		C	36.94	24.63	18.47	14.78	12.31	10.55	9.24	8.21	7.38	6.71						
		D	0.5	1.1	2.0	3.1	4.5	6.2	8.1	10.2	12.6	15.3						
		U	287.40	127.73	71.85	45.98	31.95	37.84	17.96	14.18	11.50	9.48	8.00					
		D	0.5	1.1	1.9	2.9	4.3	5.8	7.6	9.6	11.8	14.3	17.0					
25 x 3.2	53.22	C	43.77	29.18	21.89	17.51	14.59	12.50	10.94	9.73	8.75	7.95	7.30				8.200	
		D	0.5	0.9	1.5	2.4	3.4	4.6	6.0	7.7	9.4	11.5	13.6					
		U	431.10	191.60	107.78	68.98	47.90	35.21	26.97	21.27	17.24	14.27	11.98	10.20				
		D	0.5	1.1	1.9	2.9	4.3	5.8	7.6	9.6	11.8	14.3	17.0	20.0				
		C	65.66	43.77	32.83	26.26	21.89	18.76	16.41	14.59	13.13	11.93	10.94	10.10				
25 x 4.8	78.12	D	0.5	0.9	1.5	2.4	3.4	4.6	6.0	7.7	9.4	11.5	13.6	16.0			12.300	
		U	449.11	199.60	112.28	71.85	49.91	36.64	28.07	22.18	17.96	14.85	12.45	10.63	9.15			
		D	0.5	0.9	1.5	2.4	3.4	4.6	6.0	7.7	9.4	11.5	13.6	16.0	18.5			
		C	68.40	45.60	34.20	27.36	22.80	19.54	17.10	15.20	13.67	12.43	11.39	10.52	9.78			
		D	0.4	0.7	1.2	1.9	2.7	3.7	4.9	6.1	7.6	9.1	10.9	12.8	14.8			
32 x 3.2	65.42	U	673.67	299.41	168.42	107.78	74.87	54.99	42.10	33.24	26.97	22.27	18.73	15.95	13.75	10.54	8.33	12.808
		D	0.5	0.9	1.5	2.4	3.4	4.6	6.0	7.7	9.4	11.5	13.6	16.0	18.5	24.2	30.7	
		C	102.60	68.40	51.30	41.04	34.20	29.31	25.65	22.80	20.51	18.65	17.10	15.79	14.65	12.82	11.39	
		D	0.4	0.7	1.2	1.9	2.7	3.7	4.9	6.1	7.6	9.1	10.9	12.8	14.8			
		U	646.65	287.40	161.66	103.46	71.85	52.79	40.43	31.95	25.87	21.36	17.96	15.33	13.22	10.11	8.00	
32 x 4.8	97.16	D	0.3	0.7	1.3	2.0	2.8	3.9	5.1	6.4	7.9	9.6	11.4	13.3	15.4	20.2	25.6	19.221
		C	98.48	65.66	49.24	39.39	32.83	28.14	24.63	21.89	19.70	17.90	16.41	15.14	14.11	12.31	10.94	
		D	0.3	0.6	1.0	1.6	2.3	3.1	4.0	5.1	6.3	7.6	9.1	10.7	12.4	16.2	20.4	
		U	970.07	431.14	242.52	155.20	107.78	79.18	60.64	47.90	38.80	32.05	26.97	22.94	19.78	15.14	11.98	
		D	0.3	0.7	1.3	2.0	2.8	3.9	5.1	6.4	7.9	9.6	11.4	13.3	15.4	20.2	25.6	
38 x 3.2	78.12	C	147.74	98.49	73.87	59.09	49.24	42.21	36.93	32.83	29.54	26.86	24.63	22.73	21.10	18.47	16.41	27.683
		D	0.3	0.6	1.0	1.6	2.3	3.1	4.0	5.1	6.3	7.6	9.1	10.7	12.4	16.2	20.4	
		U	1320.32	586.81	330.08	211.24	146.72	107.78	82.53	65.19	52.83	43.64	36.69	31.23	26.97	20.64	16.29	
		D	0.3	0.6	1.1	1.7	2.4	3.3	4.3	5.5	6.8	8.2	9.7	11.4	13.2	17.3	21.9	
		C	201.08	134.05	100.54	80.43	67.03	57.46	50.26	44.69	40.21	36.56	33.51	30.93	28.61	25.14	22.34	
38 x 4.8	116.20	D	0.3	0.5	0.9	1.3	2.0	2.6	3.5	4.4	5.4	6.5	7.8	9.1	10.6	13.8	17.5	37.671
		U	1724.40	766.40	431.10	275.90	191.60	140.78	107.78	85.17	68.98	57.00	47.90	40.81	35.21	26.97	21.27	
		D	0.3	0.5	0.9	1.5	2.1	2.9	3.8	4.8	5.9	7.2	8.5	10.0	11.6	15.1	19.2	
		C	262.62	175.08	131.31	105.05	87.54	75.04	65.66	58.36	52.52	47.75	43.77	40.40	37.51	32.83	29.18	
		D	0.1	0.4	0.8	1.2	1.7	2.3	3.0	3.8	4.7	5.7	6.8	8.0	9.3	12.1	15.3	
51 x 4.8	153.80	U	2182.52	970.01	545.63	349.19	242.52	178.14	136.42	107.78	87.32	72.14	60.64	51.64	44.55	34.10	26.97	49.200
		D	0.1	0.4	0.8	1.3	1.9	2.6	3.4	4.3	5.3	6.4	7.6	8.9	10.3	13.5	17.0	
		C	332.39	221.59	166.19	132.96	110.80	94.97	83.09	73.87	66.47	60.43	55.40	51.14	47.48	41.55	36.93	
		D	0.7	0.6	0.7	1.0	1.5	2.1	2.7	3.4	4.2	5.1	6.0	7.1	8.2	10.8	13.6	
		U	2694.47	1197.54	673.62	431.10	299.38	219.96	168.42	133.07	107.78	89.09	74.87	63.75	54.99	42.10	46.18	
57 x 4.8	171.40	D	0.1	0.4	0.8	1.2	1.7	2.3	3.0	3.8	4.7	5.7	6.8	8.0	9.3	12.1	15.3	62.271
		C	410.36	273.57	205.18	164.14	136.78	117.25	102.58	91.19	82.07	74.61	68.40	63.13	58.62	51.30	45.59	
		U	2694.47	1197.54	673.62	431.10	299.38	219.96	168.42	133.07	107.78	89.09	74.87	63.75	54.99	42.10	46.18	
		D	0.1	0.4	0.8	1.2	1.7	2.3	3.0	3.8	4.7	5.7	6.8	8.0	9.3	12.1	15.3	
		C	410.36	273.57	205.18	164.14	136.78	117.25	102.58	91.19	82.07	74.61	68.40	63.13	58.62	51.30	45.59	
64 x 4.8	190.27	D	0.3	0.4	0.6	0.9	1.4	1.9	2.4	3.1	3.8	4.6	5.5	6.4	7.4	9.7	12.3	76.883
		C	410.36	273.57	205.18	164.14	136.78	117.25	102.58	91.19	82.07	74.61	68.40	63.13	58.62	51.30	45.59	
		U	2694.47	1197.54	673.62	431.10	299.38	219.96	168.42	133.07	107.78	89.09	74.87	63.75	54.99	42.10	46.18	
		D	0.1	0.4	0.8	1.2	1.7	2.3	3.0	3.8	4.7	5.7	6.8	8.0	9.3	12.1	15.3	
		C	410.36	273.57	205.18	164.14	136.78	117.25	102.58	91.19	82.07	74.61	68.40	63.13	58.62	51.30	45.59	

Maximum allowable fiber stress of 124 M.P.A





BAR GRATING - STEEL

IMPERIAL - Type 7-4 Spacing

7-4

7/16"

TABLE OF SAFE LOADS - IMPERIAL

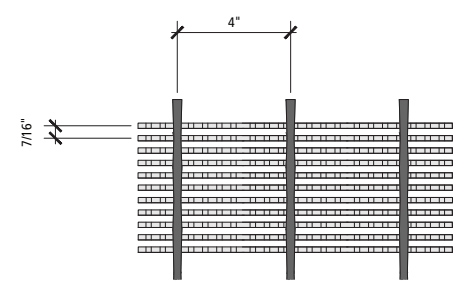
U - Safe Uniform Load, in lbs. per sq. ft.
 C - Safe Concentrated Load, in lbs. per foot of grating width
 D - Deflection in inches

For serrated surface, increase depth by 1/4" for load rate.

GENERAL

Loads and deflections are theoretical and based on static loading.

Note: Spans to the right of heavy line not recommended. Deflections shown based on tabulated loadings. For lesser design loads reduce deflection in direct proportion. For serrated surface increase depth by one size.



7-4 SPACING

SIZE OF BEARING BAR		APPROX. WT/LBS/SQ.FT. TYPE 7-4	SPAN IN INCHES														SEC. MOD. PER FEET OF WIDTH						
TYPE 7-4			1'-0"	1'-6"	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"					
			U	C	D	U	C	D	U	C	D	U	C	D	U	C		D	U	C	D		
3/4" X 1/8"	9.30	U	3856	1714	964	617	429	315	341	190	154											0.321	
		D	0.023	0.055	0.099	0.155	0.223	0.304	0.397	0.503	0.621												
		C	1928	1285	964	771	643	551	482	429	386												
		D	0.019	0.044	0.079	0.124	0.179	0.243	0.318	0.402	0.497												
3/4" X 3/16"	13.70	U	5784	2571	1446	926	643	472	362	286	231	191										0.482	
		D	0.023	0.055	0.099	0.155	0.223	0.304	0.397	0.503	0.621	0.751											
		C	2892	1928	1446	1157	964	827	723	643	579	526											
		D	0.019	0.044	0.079	0.124	0.179	0.243	0.318	0.402	0.497	0.601											
1" X 1/8"	12.30	U	6856	3047	1714	1097	762	560	429	339	274	227	190	162								0.571	
		D	0.020	0.042	0.074	0.116	0.168	0.228	0.298	0.377	0.466	0.563	0.670	0.787									
		C	3428	2285	1714	1371	1143	980	857	762	686	623	571	527									
		D	0.018	0.035	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536	0.629									
1" X 3/16"	18.10	U	10284	4571	2571	1646	1143	840	643	508	411	340	286	243	210							0.857	
		D	0.020	0.042	0.074	0.116	0.168	0.228	0.298	0.377	0.466	0.563	0.670	0.787	0.912								
		C	5142	3428	2571	2057	1714	1469	1286	1143	1029	935	857	791	735								
		D	0.018	0.035	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536	0.629	0.730								
1 1/4" X 1/8"	15.30	U	10716	4763	2679	1714	1190	875	670	529	429	354	298	254	219	167						0.893	
		D	0.018	0.035	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536	0.629	0.730	0.953							
		C	5358	3572	2679	2143	1786	1531	1339	1190	1071	974	893	824	765	670							
		D	0.017	0.029	0.048	0.074	0.107	0.146	0.191	0.241	0.298	0.360	0.429	0.504	0.584	0.763							
1 1/4" X 3/16"	22.50	U	16072	7143	4018	2571	1786	1312	1004	794	643	531	446	380	328	251	198					1.339	
		D	0.018	0.035	0.060	0.093	0.134	0.187	0.238	0.302	0.372	0.451	0.536	0.629	0.730	0.953	1.207						
		C	8036	5357	4018	3214	2679	2296	2009	1786	1607	1461	1339	1236	1148	1004	893						
		D	0.017	0.029	0.048	0.074	0.107	0.146	0.191	0.241	0.298	0.360	0.429	0.504	0.584	0.763	0.965						
1 1/2" X 1/8"	18.10	U	15428	6857	3857	2469	1714	1259	964	762	617	510	429	365	315	241	190					1.286	
		D	0.012	0.028	0.050	0.078	0.112	0.152	0.199	0.251	0.310	0.376	0.447	0.524	0.608	0.764	1.006						
		C	7714	5143	3857	3086	2571	2204	1929	1714	1543	1703	1286	1187	1102	964	857						
		D	0.011	0.023	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 1/2" X 3/16"	26.90	U	23156	10292	5789	3703	2571	1889	1446	1143	926	765	643	548	472	362	286					1.929	
		D	0.012	0.028	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	11572	7715	5786	4629	3857	3306	2893	2571	2314	2104	1929	1780	1653	1446	1286						
		D	0.011	0.023	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 3/16"	31.20	U	31500	14000	7875	5040	3500	2571	1969	1556	1260	1041	875	746	643	492	389					2.625	
		D	0.010	0.024	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	15750	10500	7875	6300	5250	4500	3938	3500	3150	2864	2625	2423	2250	1969	1750						
		D	0.011	0.020	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 3/16"	35.59	U	41144	18286	10286	6583	4571	3359	2571	2032	1646	1360	1143	974	840	643	508					3.429	
		D	0.010	0.021	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	20572	13715	10286	8229	6857	5878	5143	4571	4114	3740	3429	3165	2939	2571	2286						
		D	0.005	0.016	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"	39.92	U	52072	23143	13018	8331	5786	4251	3254	2571	2083	1721	1446	1232	1063	814	643					4.339	
		D	0.004	0.017	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	26036	17357	13018	10414	8679	7439	6509	5786	5207	4734	4339	4005	3719	3254	2893						
		D	0.008	0.015	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"	44.31	U	64284	28571	16071	10286	7143	5248	4018	3175	2571	2125	1786	1522	1312	1004	794					5.357	
		D	0.005	0.016	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	32142	21428	16071	12857	10714	9184	8036	7143	6429	5844	5357	4945	4592	4018	3571						
		D	0.010	0.015	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						

Maximum allowable fiber stress of 18,000 P.S.I.



TABLE OF SAFE LOADS

U - Safe Uniform Load, in kPa

C - Safe Concentrated Load, in kN per meter

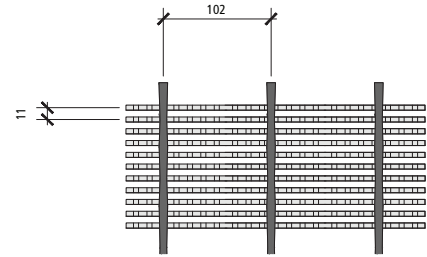
D - Deflection in millimeters

For serrated surface, increase depth by 7mm for load rate.

GENERAL

Loads and deflections are theoretical and based on static loading.

Note: Spans to the right of heavy line not recommended. Deflections shown based on tabulated loadings. For lesser design loads reduce deflection in direct proportion. For serrated surface increase depth by one size.



11-102 SPACING

SIZE OF BEARING BAR		APPROX. WT/KG/M2 TYPE 11-102		STANDARD STEEL TYPE 11-102													SEC. MOD. PER 305mm OF WIDTH		
				SPAN IN MILLIMETER															
				305	458	610	762	915	1067	1219	1372	1524	1676	1829	1981	2133		2438	2743
19 x 3.2	45.41	U	184.70	82.09	46.18	29.55	20.55	15.09	16.33	9.10	7.38								5.264
		D	0.6	1.4	2.5	3.9	5.7	7.7	10.1	12.8	15.8								
		C	28.13	18.75	14.06	11.25	9.38	8.04	7.03	6.26	5.63								
		D	0.5	1.1	2.0	3.1	4.5	6.2	8.1	10.2	12.6								
		D	277.05	123.13	69.26	44.36	30.80	22.61	17.34	13.70	11.06	9.15							
19 x 4.8	66.89	U	277.05	123.13	69.26	44.36	30.80	22.61	17.34	13.70	11.06	9.15							7.905
		D	0.6	1.4	2.5	3.9	5.7	7.7	10.1	12.8	15.8	19.1							
		C	42.19	28.13	21.10	16.88	14.06	12.07	10.55	9.38	8.45	7.67							
		D	0.5	1.1	2.0	3.1	4.5	6.2	8.1	10.2	12.6	15.3							
		D	492.60	218.93	123.15	78.84	54.75	40.24	30.80	24.33	19.69	16.29	13.70	11.64	10.06				
25 x 3.2	60.05	U	328.40	145.96	82.10	52.55	36.50	26.82	20.55	16.24	13.12	10.87	9.10	7.76					9.364
		D	0.5	1.1	1.9	2.9	4.3	5.8	7.6	9.6	11.8	14.3	17.0	20.0					
		C	50.01	33.34	25.01	20.00	16.68	14.30	12.50	11.12	10.01	9.09	8.33	7.69					
		D	0.5	0.9	1.5	2.4	3.4	4.6	6.0	7.7	9.4	11.5	13.6	16.0					
		D	492.60	218.93	123.15	78.84	54.75	40.24	30.80	24.33	19.69	16.29	13.70	11.64	10.06				
25 x 4.8	88.37	U	492.60	218.93	123.15	78.84	54.75	40.24	30.80	24.33	19.69	16.29	13.70	11.64	10.06				14.055
		D	0.5	1.1	1.9	2.9	4.3	5.8	7.6	9.6	11.8	14.3	17.0	20.0	23.2				
		C	75.02	50.01	37.51	30.01	25.01	21.43	18.76	16.68	15.01	13.64	12.50	11.54	10.72				
		D	0.5	0.9	1.5	2.4	3.4	4.6	6.0	7.7	9.4	11.5	13.6	16.0	18.5				
		D	513.30	228.13	128.32	82.10	57.00	41.91	32.09	25.34	20.55	16.96	14.27	12.17	10.49	8.00			
32 x 3.2	74.70	U	513.30	228.13	128.32	82.10	57.00	41.91	32.09	25.34	20.55	16.96	14.27	12.17	10.49	8.00			14.645
		D	0.5	0.9	1.5	2.4	3.4	4.6	6.0	7.7	9.4	11.5	13.6	16.0	18.5	24.2			
		C	78.17	52.12	39.09	31.27	26.06	22.34	19.54	17.36	15.63	14.21	13.03	12.02	11.16	9.78			
		D	0.4	0.7	1.2	1.9	2.7	3.7	4.9	6.1	7.6	9.1	10.9	12.8	14.8	19.4			
		D	769.85	342.16	192.46	123.15	85.55	62.84	48.09	38.03	30.80	25.43	21.36	18.20	15.71	12.02	9.48		
32 x 4.8	109.85	U	769.85	342.16	192.46	123.15	85.55	62.84	48.09	38.03	30.80	25.43	21.36	18.20	15.71	12.02	9.48		21.960
		D	0.5	0.9	1.5	2.4	3.4	4.8	6.0	7.7	9.4	11.5	13.6	16.0	18.5	24.2	30.7		
		C	117.25	78.16	58.62	46.89	39.09	33.50	29.31	26.06	23.45	21.32	19.54	18.03	16.75	14.65	13.03		
		D	0.4	0.7	1.2	1.9	2.7	3.7	4.9	6.1	7.6	9.1	10.9	12.8	14.8	19.4	24.5		
		D	739.00	328.44	184.75	118.27	82.10	60.31	46.18	36.50	29.55	24.43	20.55	17.48	15.09	11.54	9.10		
38 x 3.2	88.37	U	739.00	328.44	184.75	118.27	82.10	60.31	46.18	36.50	29.55	24.43	20.55	17.48	15.09	11.54	9.10		21.090
		D	0.3	0.7	1.3	2.0	2.8	3.9	5.1	6.4	7.9	9.6	11.4	13.3	15.4	19.4	25.6		
		C	112.55	75.03	56.27	45.02	37.51	32.16	28.14	25.01	22.51	24.85	18.76	17.32	16.08	14.06	12.50		
		D	0.3	0.6	1.0	1.6	2.3	3.1	4.0	5.1	6.3	7.6	9.1	10.7	12.4	16.2	20.4		
		D	1109.17	492.97	277.29	177.37	123.15	90.48	69.26	54.75	44.36	36.64	30.80	26.25	22.61	17.34	13.70		
38 x 4.8	131.34	U	1109.17	492.97	277.29	177.37	123.15	90.48	69.26	54.75	44.36	36.64	30.80	26.25	22.61	17.34	13.70		31.636
		D	0.3	0.7	1.3	2.0	2.8	3.9	5.1	6.4	7.9	9.6	11.4	13.3	15.4	20.2	25.6		
		C	168.84	112.56	84.42	67.54	56.27	48.23	42.21	37.51	33.76	30.70	28.14	25.97	24.12	21.10	18.76		
		D	0.3	0.6	1.0	1.6	2.3	3.1	4.0	5.1	6.3	7.6	9.1	10.7	12.4	16.2	20.4		
		D	1508.85	670.60	377.21	241.42	167.65	123.15	94.32	74.53	60.35	49.86	41.91	35.73	30.80	23.57	18.63		
45 x 4.8	152.26	U	1508.85	670.60	377.21	241.42	167.65	123.15	94.32	74.53	60.35	49.86	41.91	35.73	30.80	23.57	18.63		43.050
		D	0.3	0.6	1.1	1.7	2.4	3.3	4.3	5.5	6.8	8.2	9.7	11.4	13.2	17.3	21.9		
		C	229.79	153.20	114.90	91.92	76.60	65.66	57.46	51.07	45.96	41.79	38.30	35.35	32.83	28.73	25.53		
		D	0.3	0.5	0.9	1.3	2.0	2.6	3.5	4.4	5.4	6.5	7.8	9.1	10.6	13.8	17.5		
		D	1970.80	875.91	492.70	315.33	218.95	160.90	123.15	97.33	78.84	65.14	54.75	46.65	40.24	30.80	24.33		
51 x 4.8	173.68	U	1970.80	875.91	492.70	315.33	218.95	160.90	123.15	97.33	78.84	65.14	54.75	46.65	40.24	30.80	24.33		56.236
		D	0.3	0.5	0.9	1.5	2.1	2.9	3.8	4.8	5.9	7.2	8.5	10.0	11.6	15.1	19.2		
		C	300.15	200.10	150.07	120.06	100.04	85.76	75.04	66.69	60.02	54.57	50.03	46.18	42.88	37.51	33.35		
		D	0.1	0.4	0.8	1.2	1.7	2.3	3.0	3.8	4.7	5.7	6.8	8.0	9.3	12.1	15.3		
		D	2494.25	1108.56	623.56	399.05	277.15	203.62	155.87	123.15	99.78	82.44	54.89	59.01	50.92	38.99	30.80		
57 x 4.8	194.80	U	2494.25	1108.56	623.56	399.05	277.15	203.62	155.87	123.15	99.78	82.44	54.89	59.01	50.92	38.99	30.80		71.160
		D	0.1	0.4	0.8	1.3	1.9	2.6	3.4	4.3	5.3	6.4	7.6	8.9	10.3	13.5	17.0		
		C	379.87	253.24	189.93	151.94	126.63	108.54	94.97	84.42	75.97	69.07	63.31	58.43	54.26	47.48	42.21		
		D	0.2	0.4	0.7	1.0	1.5	2.1	2.7	3.4	4.2	5.1	6.0	7.1	8.2	10.8	13.6		
		D	3079.20	1368.53	769.80	492.70	342.15	251.38	192.46	152.08	123.15	101.79	85.55	72.90	62.84	48.09	38.03		
64 x 4.8	216.23	U	3079.20	1368.53	769.80	492.70	342.15	251.38	192.46	152.08	123.15	101.79	85.55	72.90	62.84	48.09	38.03		87.855
		D	0.1	0.4	0.8	1.2	1.7	2.3	3.0	3.8	4.7	5.7	6.8	8.0	9.3	12.1	15.3		
		C	468.95	312.63	234.48	187.58	156.32	133.99	117.25	104.22	93.80	85.26	78.16	72.15	67.00	58.62	52.10		
		D	0.3	0.4	0.6	0.9	1.4	1.9	2.4	3.1	3.8	4.6	5.5	6.4	7.4	9.7	12.3		

Maximum allowable fiber stress of 124 M.P.A