Steel Bar Grating

WELDED (W) 1-3/16" C/C Bearing Bars

19-W-4

Cross Rods 4" C/C

19-W-2

Cross Rods 2" C/C

NON-SERRATED & SERRATED

PRESS-LOCKED (P) 1-3/16" C/C Bearing Bars

19-P-4

Cross Bars 4" C/C

19-P-2

Cross Bars 2" C/C

NON-SERRATED & SERRATED

LOAD & DEFLECTION TABLE

General: Loads and deflections are theoretical and based on static loading.

U = safe uniform load, psf (page 92)
C = safe concentrated load, pfw (page 92)
D = deflection, inches
E = modulus of elasticity, 29,000,000 psi
F = fiber stress, 18,000 psi
Material: ASTM A-1011 standard

Deflection: Spans and loads to the right of the bold line exceed 1/4" deflection for uniform load of 100 psf which provides safe pedestrian comfort. These can be exceeded for other types of loads with engineer's approval.

Serrated Bars: For serrated grating, the depth of grating required for a specified load is 1/4" deeper than that shown in the table.

Bar Size	Symbol	Approx. Weight psf	Sec. Mod Per Ft. Of Width		SPAN (Direction of Bearing Bar) 24"	30"	36"	42"	48"	54"	60"	66"	72"	78"	84"	96"	108"
3/4" x 1/8"	19-W-4	3.9	0.118	U	355	227	158	116	89	70							
				D	0.099	0.155	0.223	0.304	0.397	0.503							
	19-P-4	4.3		C	355	284	237	203	178	158							
	19-P-2	5.2		D	0.079	0.124	0.179	0.243	0.318	0.402							
3/4" x 3/16"	19-W-4	5.6	0.178	U	533	341	237	174	133	105							
				D	0.099	0.155	0.223	0.304	0.397	0.503							
	19-P-4	6.4		C	533	426	355	305	266	237							
	19-P-2	7.8		D	0.079	0.124	0.179	0.243	0.318	0.402							
1" x 1/8"	19-W-4	5.0	0.211	U	632	404	281	206	158	125	101	84					
	19-W-2	5.5		D	0.074	0.116	0.168	0.228	0.298	0.377	0.466	0.563					
	19-P-4	5.4		C	632	505	421	361	316	281	253	230					
	19-P-2	6.3		D	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451					
1" x 3/16"	19-W-4	7.2	0.316	U	947	606	421	309	237	187	152	125					
	19-W-2	7.8		D	0.074	0.116	0.168	0.228	0.298	0.377	0.466	0.563					
	19-P-4	8.1		C	947	758	632	541	474	421	379	344					
	19-P-2	9.5		D	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451					
1-1/4" x 1/8"	19-W-4	6.1	0.329	U	987	632	439	322	247	195	158	130	110	93	81		
	19-W-2	6.6		D	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536	0.629	0.730		
	19-P-4	6.8		C	987	789	658	564	493	439	395	359	329	304	282		
	19-P-2	8.1		D	0.048	0.074	0.107	0.146	0.191	0.241	0.298	0.360	0.429	0.504	0.584		
1-1/4" x 3/16"	19-W-4	8.9	0.493	U	1480	947	658	483	370	292	237	196	164	140	121		
	19-W-2	9.5		D	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536	0.629	0.730		
	19-P-4	10.2		C	1480	1184	987	846	740	658	592	538	493	455	423		
	19-P-2	12.1		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"	19-W-4	7.2	0.474	U	1421	909	632	464	355	281	227	188	158	135	116	89	70
	19-W-2	7.7		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
	19-P-4	7.9		C	1421	1137	947	812	711	632	568	517	474	437	406	355	316
	19-P-2	9.2		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
1-1/2" x 3/16"	19-W-4	10.5	0.711	U	2132	1364	947	696	533	421	341	282	237	202	174	133	105
	19-W-2	11.2		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
	19-P-4	11.8		C	2132	1705	1421	1218	1066	947	853	775	711	656	609	533	474
	19-P-2	13.8		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 3/16"	19-W-4	12.2	0.967	U	2901	1857	1289	947	725	573	464	384	322	275	237	181	143
	19-W-2	12.8		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
	19-P-4	13.5		C	2901	2321	1934	1658	1451	1289	1161	1055	967	893	829	725	645
	19-P-2	15.4		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 3/16"	19-W-4	13.9	1.263	U	3789	2425	1684	1237	947	749	606	501	421	359	309	237	187
	19-W-2	14.5		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
	19-P-4	15.2		C	3789	3032	2526	2165	1895	1684	1516	1378	1263	1166	1083	947	842
	19-P-2	17.1		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-W-4	15.5	1.599	U	4796	3069	2132	1566	1199	947	767	634	533	454	392	300	237
	19-W-2	16.1		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
	19-P-4	16.8		C	4796	3837	3197	2741	2398	2132	1918	1744	1599	1476	1370	1199	1066
	19-P-2	18.7		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"	19-W-4	17.2	1.974	U	5921	3789	2632	1933	1480	1170	947	783	658	561	483	370	292
	19-W-2	17.8		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
	19-P-4	18.5		C	5921	4737	3947	3383	2961	2632	2368	2153	1974	1822	1692	1480	1316
	19-P-2	20.4		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

W/P-19 PANEL WIDTH (inches)

Note: P-Press-Locked cross bars typically extend 1/8" each side. W-Welded cross rods may extend 1/8" each side. Panel widths do not include these extensions.

No. of Bars	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1/8" Bar	1 5/16	2 1/2	3 11/16	4 7/8	6 1/16	7 1/4	8 7/16	9 5/8	10 13/16	12	13 3/16	14 3/8	15 9/16	16 3/4	17 15/16
3/16" Bar	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	13 1/4	14 7/16	15 5/8	16 13/16	18
No. of Bars	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**
1/8" Bar	19 1/8	20 5/16	21 1/2	22 11/16	23 7/8	25 1/16	26 1/4	27 7/16	28 5/8	29 13/16	31	32 3/16	33 3/8	34 9/16	35 3/4
3/16" Bar	19 3/16	20 3/8	21 9/16	22 3/4	23 15/16	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