

I-BAR SWAGE LOCKED

LOAD & DEFLECTION TABLE

19-SI-4 & 19-SI-2

Bearing Bar Size	Ped. Span inches	Approx. Weight lbs/sqft	Sec. Prop. S_x^* (in ³)	Clear Span (Direction of Bearing Bars)															
				U	Du	C	Dc	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	8'-0"
								I_x^* (in ⁴)											
1" x 1/4"	44	1.99	0.316	U	632	404	281	206	158	U = Safe uniform load (psf) C = Safe concentrated load (lbs/ft width) D = Deflection (inches) E = Modulus of Elasticity, 10,000,000 psi F = Allowable Fiber Stress, 12,000 psi Material: ASTM B221, 6063-T6 Loads and deflections shown are theoretical and based on static loading. * Based on 10.105 bars/ft of grating width. Bearing bar spacing of 1-3/16" c.c. Add 0.3 lbs/sqft for 19-SI-2. 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. This can be exceeded for other types of loads with the Engineer's approval.									
				Du	0.144	0.225	0.324	0.441	0.576										
			0.158	C	632	505	421	361	316										
				Dc	0.115	0.180	0.259	0.353	0.461										
1-1/4" x 1/4"	52	2.34	0.493	U	987	632	439	322	247									195	
				Du	0.115	0.180	0.259	0.353	0.461									0.583	
			0.308	C	987	789	658	564	493									439	
				Dc	0.092	0.144	0.207	0.282	0.368									0.467	
1-1/2" x 1/4"	59	2.70	0.711	U	1421	909	632	464	355	281	227								
				Du	0.096	0.150	0.216	0.294	0.384	0.487	0.599								
			0.533	C	1421	1137	947	812	711	632	568								
				Dc	0.077	0.120	0.173	0.235	0.307	0.389	0.480								
1-3/4" x 1/4"	66	3.06	0.967	U	1934	1238	860	632	484	382	309	256	215						
				Du	0.082	0.129	0.185	0.252	0.329	0.417	0.514	0.623	0.741						
			0.846	C	1934	1547	1289	1105	967	860	774	703	645						
				Dc	0.066	0.103	0.148	0.202	0.263	0.333	0.412	0.498	0.593						
2" x 1/4"	73	3.43	1.263	U	2526	1617	1123	825	632	499	404	334	281	239					
				Du	0.072	0.113	0.162	0.221	0.288	0.364	0.450	0.544	0.649	0.760					
			1.263	C	2526	2021	1684	1444	1263	1123	1011	919	842	777					
				Dc	0.058	0.090	0.130	0.176	0.230	0.292	0.360	0.436	0.518	0.608					
2-1/4" x 1/4"	80	3.75	1.599	U	3197	2046	1421	1044	799	632	512	423	355	303	261				
				Du	0.064	0.100	0.144	0.196	0.256	0.324	0.400	0.484	0.576	0.677	0.784				
			1.798	C	3197	2558	2132	1827	1599	1421	1279	1163	1066	984	914				
				Dc	0.051	0.080	0.115	0.157	0.205	0.259	0.320	0.387	0.461	0.541	0.628				
2-1/2" x 1/4"	87	4.15	1.974	U	3947	2526	1754	1289	987	780	632	522	439	374	322	247			
				Du	0.058	0.090	0.130	0.176	0.230	0.292	0.360	0.436	0.519	0.609	0.705	0.923			
			2.467	C	3947	3158	2632	2256	1974	1754	1579	1435	1316	1215	1128	987			
				Dc	0.046	0.072	0.104	0.141	0.184	0.233	0.288	0.348	0.415	0.487	0.565	0.737			

Panel Width Chart (in.) - 19-SI-4 & 19-SI-2

Dimensions are Out-to-Out of Bearing Bar Flanges**

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

** Add 1/4" for extended crossbars. Bearing Bar flange width is 1/4" top and bottom. Standard panel width indicated in "maroon".