I-BAR SWAGE LOCKED

LOAD & DEFLECTION TABLE

15-SI-4 & 15-SI-2

Bearing Bar Size	Ped. Span inches	Approx. Weight lbs/sqft	Sec. Prop. S_x* (in^3) / I_x* (in^4)		Clear Span (Direction of Bearing Bars) 2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	8'-0"
1" x 1/4"	46	2.42	0.400	U	800	512	356	261	200							
				Du	0.144	0.225	0.324	0.441	0.576							
			0.200	C	800	640	533	457	400							
				Dc	0.115	0.180	0.259	0.353	0.461							
1-1/4" x 1/4"	55	2.87	0.625	U	1250	800	556	408	313	247	200					
				Du	0.115	0.180	0.259	0.353	0.461	0.583	0.720					
			0.391	C	1250	1000	833	714	625	556	500					
				Dc	0.092	0.144	0.207	0.282	0.368	0.467	0.576					
1-1/2" x 1/4"	63	3.33	0.900	U	1800	1152	800	588	450	356	288	238				
				Du	0.096	0.150	0.216	0.294	0.384	0.487	0.599	0.726				
			0.675	C	1800	1440	1200	1029	900	800	720	655				
				Dc	0.077	0.120	0.173	0.235	0.307	0.389	0.480	0.581				
1-3/4" x 1/4"	70	3.78	1.225	U	2450	1568	1089	800	613	484	392	324	272			
				Du	0.082	0.129	0.185	0.252	0.329	0.417	0.514	0.623	0.741			
			1.072	C	2450	1960	1633	1400	1225	1089	980	891	817			
				Dc	0.066	0.103	0.148	0.202	0.263	0.333	0.412	0.498	0.593			
2" x 1/4"	78	4.25	1.600	U	3200	2048	1422	1045	800	632	512	423	356	303	261	
				Du	0.072	0.113	0.162	0.221	0.288	0.364	0.450	0.544	0.649	0.760	0.881	
			1.600	C	3200	2560	2133	1829	1600	1422	1280	1164	1067	985	914	
				Dc	0.058	0.090	0.130	0.176	0.230	0.292	0.360	0.436	0.518	0.608	0.705	
2-1/4" x 1/4"	85	4.66	2.025	U	4050	2592	1800	1322	1013	800	648	536	450	383	331	253
				Du	0.064	0.100	0.144	0.196	0.256	0.324	0.400	0.484	0.576	0.676	0.784	1.023
			2.278	C	4050	3240	2700	2314	2025	1800	1620	1473	1350	1246	1157	1013
				Dc	0.051	0.080	0.115	0.157	0.205	0.259	0.320	0.387	0.461	0.541	0.628	0.820
2-1/2" x 1/4"	92	5.16	2.500	U	5000	3200	2222	1633	1250	988	800	661	556	473	408	313
				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
			3.125	C	5000	4000	3333	2857	2500	2222	2000	1818	1667	1538	1429	1250
				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

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 12.8 bars/ft of grating width. Bearing bar spacing of 15/16" c.c. Add 0.3 lbs/sqft for 15-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.

Finish: Mill finish unless otherwise specified.

Panel Width Chart (in.) - 15-SI-4 & 15-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	$1^{3}/_{16}$	$2^{1}/_{8}$	$3^{1}/_{16}$	4	$4^{15}/_{16}$	$5^{7}/_{8}$	$6^{13}/_{16}$	$7^{3}/_{4}$	$8^{11}/_{16}$	$9^{5}/_{8}$	$10^{9}/_{16}$	$11^{1}/_{2}$	$12^{7}/_{16}$	$13^{3}/_{8}$	$14^{5}/_{16}$
No. of Bars	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1/4" Flange	$15^{1}/_{4}$	$16^{3}/_{16}$	$17^{1}/_{8}$	$18^{1}/_{16}$	19	$19^{15}/_{16}$	$20^{7}/_{8}$	$21^{13}/_{16}$	$22^{3}/_{4}$	$23^{11}/_{16}$	$24^{5}/_{8}$	$25^{9}/_{16}$	$26^{1}/_{2}$	$27^{7}/_{16}$	$28^{3}/_{8}$
No. of Bars	32	33	34	35	36	37	38	39							
1/4" Flange	$29^{5}/_{16}$	$30^{1}/_{4}$	$31^{3}/_{16}$	$32^{1}/_{8}$	$33^{1}/_{16}$	34	$34^{15}/_{16}$	$35^{7}/_{8}$							

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