

Steel Bar Grating Heavy-Duty

HEAVY-DUTY WELDED (H) 1-3/8" C/C Bearing Bars

22-H-4



Cross Rods 4" C/C

22-H-2



Cross Rods 2" C/C

NON-SERRATED & SERRATED

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, 20,000 psi

Material: ASTM A-36

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

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

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. For deflections of uniform and concentrated loads, consult AMICO-Klump's engineering departments.

LOAD & DEFLECTION 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"	84"	96"	
1" x 1/4"	22-H-4	8.3	0.364	U	1,212	776	539	396	303	239	194	160	135	99	76
	22-H-2	9.0		C	1,212	970	808	693	606	539	485	441	404	346	303
1" x 5/16"	22-H-4	10.7	0.455	U	1,515	970	673	495	379	299	242	200	168	124	95
	22-H-2	11.8		C	1,515	1,212	1,010	866	758	673	606	551	505	433	379
1" x 3/8"	22-H-4	12.6	0.545	U	1,818	1,164	808	594	455	359	291	240	202	148	114
	22-H-2	13.7		C	1,818	1,455	1,212	1,039	909	808	727	661	606	519	455
1-1/4" x 1/4"	22-H-4	10.2	0.568	U	1,894	1,212	842	618	473	374	303	250	210	155	118
	22-H-2	10.9		C	1,894	1,515	1,263	1,082	947	842	758	689	631	541	473
1-1/4" x 5/16"	22-H-4	13.1	0.710	U	2,367	1,515	1,052	773	592	468	379	313	263	193	148
	22-H-2	14.2		C	2,367	1,894	1,578	1,353	1,184	1,052	947	861	789	676	592
1-1/4" x 3/8"	22-H-4	15.4	0.852	U	2,841	1,818	1,263	928	710	561	455	376	316	232	178
	22-H-2	16.5		C	2,841	2,273	1,894	1,623	1,420	1,263	1,136	1,033	947	812	710
1-1/2" x 1/4"	22-H-4	12.1	0.818	U	2,727	1,745	1,212	891	682	539	436	361	303	223	170
	22-H-2	12.8		C	2,727	2,182	1,818	1,558	1,364	1,212	1,091	992	909	779	682
1-1/2" x 5/16"	22-H-4	15.4	1.023	U	3,409	2,182	1,515	1,113	852	673	545	451	379	278	213
	22-H-2	16.8		C	3,409	2,727	2,273	1,948	1,705	1,515	1,364	1,240	1,136	974	852
1-1/2" x 3/8"	22-H-4	18.3	1.227	U	4,091	2,618	1,818	1,336	1,023	808	655	541	455	334	256
	22-H-2	19.4		C	4,091	3,273	2,727	2,338	2,045	1,818	1,636	1,488	1,364	1,169	1,023
1-3/4" x 1/4"	22-H-4	14.0	1.114	U	3,712	2,376	1,650	1,212	928	733	594	491	412	303	232
	22-H-2	14.7		C	3,712	2,970	2,475	2,121	1,856	1,650	1,485	1,350	1,237	1,061	928
1-3/4" x 5/16"	22-H-4	17.8	1.392	U	4,640	2,970	2,062	1,515	1,160	917	742	614	516	379	290
	22-H-2	19.0		C	4,640	3,712	3,093	2,652	2,320	2,062	1,856	1,687	1,547	1,326	1,160
1-3/4" x 3/8"	22-H-4	21.4	1.670	U	5,568	3,564	2,475	1,818	1,392	1,100	891	736	619	455	348
	22-H-2	22.3		C	5,568	4,455	3,712	3,182	2,784	2,475	2,227	2,025	1,856	1,591	1,392
2" x 1/4"	22-H-4	16.0	1.455	U	4,848	3,103	2,155	1,583	1,212	958	776	641	539	396	303
	22-H-2	16.6		C	4,848	3,879	3,232	2,771	2,424	2,155	1,939	1,763	1,616	1,385	1,212
2" x 5/16"	22-H-4	20.2	1.818	U	6,061	3,879	2,694	1,979	1,515	1,197	970	801	673	495	379
	22-H-2	21.3		C	6,061	4,848	4,040	3,463	3,030	2,694	2,424	2,204	2,020	1,732	1,515
2" x 3/8"	22-H-4	24.0	2.182	U	7,273	4,655	3,232	2,375	1,818	1,437	1,164	962	808	594	455
	22-H-2	25.1		C	7,273	5,818	4,848	4,156	3,636	3,232	2,909	2,645	2,424	2,078	1,818
2-1/4" x 1/4"	22-H-4	17.9	1.841	U	6,136	3,927	2,727	2,004	1,534	1,212	982	811	682	501	384
	22-H-2	18.5		C	6,136	4,909	4,091	3,506	3,068	2,727	2,455	2,231	2,045	1,753	1,534
2-1/4" x 5/16"	22-H-4	22.6	2.301	U	7,670	4,909	3,409	2,505	1,918	1,515	1,227	1,014	852	626	479
	22-H-2	23.7		C	7,670	6,136	5,114	4,383	3,835	3,409	3,068	2,789	2,557	2,192	1,918
2-1/4" x 3/8"	22-H-4	26.9	2.761	U	9,205	5,891	4,091	3,006	2,301	1,818	1,473	1,217	1,023	751	575
	22-H-2	28.0		C	9,205	7,364	6,136	5,260	4,602	4,091	3,682	3,347	3,068	2,630	2,301
2-1/2" x 1/4"	22-H-4	19.8	2.273	U	7,576	4,848	3,367	2,474	1,894	1,496	1,212	1,002	842	618	473
	22-H-2	20.4		C	7,576	6,061	5,051	4,329	3,788	3,367	3,030	2,755	2,525	2,165	1,894
2-1/2" x 5/16"	22-H-4	25.0	2.841	U	9,470	6,061	4,209	3,092	2,367	1,871	1,515	1,252	1,052	773	592
	22-H-2	26.1		C	9,470	7,576	6,313	5,411	4,735	4,209	3,788	3,444	3,157	2,706	2,367
2-1/2" x 3/8"	22-H-4	29.7	3.409	U	11,364	7,273	5,051	3,711	2,841	2,245	1,818	1,503	1,263	928	710
	22-H-2	30.8		C	11,364	9,091	7,576	6,494	5,682	5,051	4,545	4,132	3,788	3,247	2,841
2-3/4" x 1/4"	22-H-4	21.7	2.750	U	9,167	5,867	4,074	2,993	2,292	1,811	1,467	1,212	1,019	748	573
	22-H-2	22.3		C	9,167	7,333	6,111	5,238	4,583	4,074	3,667	3,333	3,056	2,619	2,292
2-3/4" x 5/16"	22-H-4	27.8	3.438	U	11,458	7,333	5,093	3,741	2,865	2,263	1,833	1,515	1,273	935	716
	22-H-2	29.3		C	11,458	9,167	7,639	6,548	5,729	5,093	4,583	4,167	3,819	3,274	2,865
2-3/4" x 3/8"	22-H-4	33.0	4.125	U	13,750	8,800	6,111	4,490	3,438	2,716	2,200	1,818	1,528	1,122	859
	22-H-2	34.5		C	13,750	11,000	9,167	7,857	6,875	6,111	5,500	5,000	4,583	3,929	3,438

Steel Bar Grating Heavy-Duty

22-H-4 & 22-H-2 (continued)

NON-SERRATED & SERRATED

LOAD & DEFLECTION TABLE

Bar Size	Symbol	Approx. Weight per sq ft	Sec. Mod Per Ft. Of Width	SPAN (Direction of Bearing Bar)											
				24"	30"	36"	42"	48"	54"	60"	66"	72"	84"	96"	
3" x 1/4"	22-H-4	24.1	3.273	U	10,909	6,982	4,848	3,562	2,727	2,155	1,745	1,443	1,212	891	682
	22-H-2	25.2		C	10,909	8,727	7,273	6,234	5,455	4,848	4,364	3,967	3,636	3,117	2,727
3" x 5/16"	22-H-4	30.2	4.091	U	13,636	8,727	6,061	4,453	3,409	2,694	2,182	1,803	1,515	1,113	852
	22-H-2	31.7		C	13,636	10,909	9,091	7,792	6,818	6,061	5,455	4,959	4,545	3,896	3,409
3" x 3/8"	22-H-4	35.8	4.909	U	16,364	10,473	7,273	5,343	4,091	3,232	2,618	2,164	1,818	1,336	1,023
	22-H-2	37.4		C	16,364	13,091	10,909	9,351	8,182	7,273	6,545	5,950	5,455	4,675	4,091
3-1/4" x 1/4"	22-H-4	26.0	3.841	U	12,803	8,194	5,690	4,181	3,201	2,529	2,048	1,693	1,423	1,045	800
	22-H-2	27.1		C	12,803	10,242	8,535	7,316	6,402	5,690	5,121	4,656	4,268	3,658	3,201
3-1/4" x 5/16"	22-H-4	32.6	4.801	U	16,004	10,242	7,113	5,226	4,001	3,161	2,561	2,116	1,778	1,306	1,000
	22-H-2	34.1		C	16,004	12,803	10,669	9,145	8,002	7,113	6,402	5,820	5,335	4,573	4,001
3-1/4" x 3/8"	22-H-4	38.7	5.761	U	19,205	12,291	8,535	6,271	4,801	3,793	3,073	2,539	2,134	1,568	1,200
	22-H-2	40.2		C	19,205	15,364	12,803	10,974	9,602	8,535	7,682	6,983	6,402	5,487	4,801
3-1/2" x 1/4"	22-H-4	27.9	4.455	U	14,848	9,503	6,599	4,848	3,712	2,933	2,376	1,963	1,650	1,212	928
	22-H-2	29.0		C	14,848	11,879	9,899	8,485	7,424	6,599	5,939	5,399	4,949	4,242	3,712
3-1/2" x 5/16"	22-H-4	34.9	5.568	U	18,561	11,879	8,249	6,061	4,640	3,666	2,970	2,454	2,062	1,515	1,160
	22-H-2	36.5		C	18,561	14,848	12,374	10,606	9,280	8,249	7,424	6,749	6,187	5,303	4,640
3-1/2" x 3/8"	22-H-4	41.6	6.682	U	22,273	14,255	9,899	7,273	5,568	4,400	3,564	2,945	2,475	1,818	1,392
	22-H-2	43.1		C	22,273	17,818	14,848	12,727	11,136	9,899	8,909	8,099	7,424	6,364	5,568
4" x 1/4"	22-H-4	31.7	5.818	U	19,394	12,412	8,620	6,333	4,848	3,831	3,103	2,564	2,155	1,583	1,212
	22-H-2	32.9		C	19,394	15,515	12,929	11,082	9,697	8,620	7,758	7,052	6,465	5,541	4,848
4" x 5/16"	22-H-4	39.7	7.273	U	24,242	15,515	10,774	7,916	6,061	4,789	3,879	3,206	2,694	1,979	1,515
	22-H-2	41.2		C	24,242	19,394	16,162	13,853	12,121	10,774	9,697	8,815	8,081	6,926	6,061
4" x 3/8"	22-H-4	47.3	8.727	U	29,091	18,618	12,929	9,499	7,273	5,746	4,655	3,847	3,232	2,375	1,818
	22-H-2	48.8		C	29,091	23,273	19,394	16,623	14,545	12,929	11,636	10,579	9,697	8,312	7,273
4-1/2" x 1/4"	22-H-4	35.6	7.364	U	24,545	15,709	10,909	8,015	6,136	4,848	3,927	3,246	2,727	2,004	1,534
	22-H-2	36.7		C	24,545	19,636	16,364	14,026	12,273	10,909	9,818	8,926	8,182	7,013	6,136
4-1/2" x 5/16"	22-H-4	44.5	9.205	U	30,682	19,636	13,636	10,019	7,670	6,061	4,909	4,057	3,409	2,505	1,918
	22-H-2	46.0		C	30,682	24,545	20,455	17,532	15,341	13,636	12,273	11,157	10,227	8,766	7,670
4-1/2" x 3/8"	22-H-4	53.0	11.045	U	36,818	23,564	16,364	12,022	9,205	7,273	5,891	4,869	4,091	3,006	2,301
	22-H-2	54.5		C	36,818	29,455	24,545	21,039	18,409	16,364	14,727	13,388	12,273	10,519	9,205
5" x 1/4"	22-H-4	39.4	9.091	U	30,303	19,394	13,468	9,895	7,576	5,986	4,848	4,007	3,367	2,474	1,894
	22-H-2	40.5		C	30,303	24,242	20,202	17,316	15,152	13,468	12,121	11,019	10,101	8,658	7,576
5" x 5/16"	22-H-4	49.3	11.364	U	37,879	24,242	16,835	12,369	9,470	7,482	6,061	5,009	4,209	3,092	2,367
	22-H-2	50.8		C	37,879	30,303	25,253	21,645	18,939	16,835	15,152	13,774	12,626	10,823	9,470
5" x 3/8"	22-H-4	58.7	13.636	U	45,455	29,091	20,202	14,842	11,364	8,979	7,273	6,011	5,051	3,711	2,841
	22-H-2	60.2		C	45,455	36,364	30,303	25,974	22,727	20,202	18,182	16,529	15,152	12,987	11,364
6" x 1/4"	22-H-4	47.0	13.091	U	43,636	27,927	19,394	14,249	10,909	8,620	6,982	5,770	4,848	3,562	2,727
	22-H-2	48.2		C	43,636	34,909	29,091	24,935	21,818	19,394	17,455	15,868	14,545	12,468	10,909
6" x 5/16"	22-H-4	58.8	16.364	U	54,545	34,909	24,242	17,811	13,636	10,774	8,727	7,213	6,061	4,453	3,409
	22-H-2	60.3		C	54,545	43,636	36,364	31,169	27,273	24,242	21,818	19,835	18,182	15,584	13,636
6" x 3/8"	22-H-4	70.1	19.636	U	65,455	41,891	29,091	21,373	16,364	12,929	10,473	8,655	7,273	5,343	4,091
	22-H-2	71.8		C	65,455	52,364	43,636	37,403	32,727	29,091	26,182	23,802	21,818	18,701	16,364

H-22 PANEL WIDTH (inches)

Note: H-Heavy Duty 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	17	18	19	20
1/4" Bar	1 ⁵ / ₈	3	4 ³ / ₈	5 ³ / ₄	7 ¹ / ₈	8 ¹ / ₂	9 ⁷ / ₈	11 ¹ / ₄	12 ⁵ / ₈	14	15 ³ / ₈	16 ³ / ₄	18 ¹ / ₈	19 ¹ / ₂	20 ⁷ / ₈	22 ¹ / ₄	23 ⁵ / ₈	25	26 ³ / ₈
5/16" Bar	1 ¹¹ / ₁₆	3 ¹ / ₁₆	4 ⁷ / ₁₆	5 ¹³ / ₁₆	7 ³ / ₁₆	8 ⁹ / ₁₆	9 ¹⁵ / ₁₆	11 ⁵ / ₁₆	12 ¹¹ / ₁₆	14 ¹ / ₁₆	15 ⁷ / ₁₆	16 ¹³ / ₁₆	18 ³ / ₁₆	19 ⁹ / ₁₆	20 ¹⁵ / ₁₆	22 ³ / ₁₆	23 ¹¹ / ₁₆	25 ¹ / ₁₆	26 ⁷ / ₁₆
3/8" Bar	1 ³ / ₄	3 ¹ / ₈	4 ¹ / ₂	5 ⁷ / ₈	7 ¹ / ₄	8 ⁵ / ₈	10	11 ³ / ₈	12 ³ / ₄	14 ¹ / ₈	15 ¹ / ₂	16 ⁷ / ₈	18 ¹ / ₄	19 ⁵ / ₈	21	22 ³ / ₈	23 ³ / ₄	25 ¹ / ₈	26 ¹ / ₂
No. of Bars	21	22	23	24	25	26	27												
1/4" Bar	27 ³ / ₄	29 ¹ / ₈	30 ¹ / ₂	31 ⁷ / ₈	33 ¹ / ₄	34 ⁵ / ₈	36												
5/16" Bar	27 ¹³ / ₁₆	29 ³ / ₁₆	30 ⁹ / ₁₆	31 ¹⁵ / ₁₆	33 ⁵ / ₁₆	34 ¹¹ / ₁₆	36 ¹ / ₁₆												
3/8" Bar	27 ⁷ / ₈	29 ¹ / ₄	30 ⁵ / ₈	32	33 ³ / ₈	34 ³ / ₄	36 ¹ / ₈												

All 1/4" Bar Size - up to 27 Bars Wide
 1 x 5/16 thru 2-1/2 x 3/8 - up to 27 Bars Wide
 2-3/4 x 5/16 thru 6 x 3/8 - up to 18 Bars Wide

