

## 38-H-4 & 38-H-2 Heavy-Duty Steel Grating

### Heavy-Duty Welded

2-3/8" Center to Center of Bearing Bars



**38-H-4**  
Cross Rods 4" C/C



**38-H-2**  
Cross Rods 2" C/C

**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 MARC engineering departments.

U= safe uniform load, psf  
C= safe concentrated load, pfw  
D= deflection, inches  
E= modulus of elasticity, 29,000,000 psi  
F= fiber stress, 20,000 psi

### Load & Deflection Table

Bar Size	Symbol	Approx. Weight psf	Sec mod Per Fl of Width	SPAN (Length of Bearing Bar)	SPAN (Length of Bearing Bar)											
					2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	7'-0"	8'-0"	
1" x 1/4"	38-4-44	5.2	0.211	U	702	449	312	229	175	139	112	93	78	57	44	
	38-2-44	5.8		C	702	561	468	401	351	312	281	255	234	201	175	
1" x 5/16"	38-4-45	7.2	0.263	U	877	561	390	286	219	173	140	116	97	72	55	
	38-2-45	8.7		C	877	702	585	501	439	390	351	319	292	251	219	
1" x 3/8"	38-4-46	8.3	0.316	U	1,053	674	468	344	263	208	168	139	117	86	66	
	38-2-46	9.8		C	1,053	842	702	602	526	468	421	383	351	301	263	
1-1/4" x 1/4"	38-4-54	6.3	0.329	U	1,096	702	487	358	274	217	175	145	122	90	69	
	38-2-54	6.9		C	1,096	877	731	627	548	487	439	399	365	313	274	
1-1/4" x 5/16"	38-4-55	8.6	0.411	U	1,371	877	609	448	343	271	219	181	152	112	86	
	38-2-55	10.1		C	1,371	1,096	914	783	685	609	548	498	457	392	343	
1-1/4" x 3/8"	38-4-56	10.0	0.493	U	1,645	1,053	731	537	411	325	263	217	183	134	103	
	38-2-56	11.5		C	1,645	1,316	1,096	940	822	731	658	598	548	470	411	
1-1/2" x 1/4"	38-4-64	7.4	0.474	U	1,579	1,011	702	516	395	312	253	209	175	129	99	
	38-2-64	7.9		C	1,579	1,263	1,053	902	789	702	632	574	526	451	395	
1-1/2" x 5/16"	38-4-65	10.0	0.592	U	1,974	1,263	877	644	493	390	316	261	219	161	123	
	38-2-65	11.5		C	1,974	1,579	1,316	1,128	987	877	789	718	658	564	493	
1-1/2" x 3/8"	38-4-66	11.7	0.711	U	2,368	1,516	1,053	773	592	468	379	313	263	193	148	
	38-2-66	13.2		C	2,368	1,895	1,579	1,353	1,184	1,053	947	861	789	677	592	
1-3/4" x 1/4"	38-4-74	8.6	0.645	U	2,149	1,375	955	702	537	425	344	284	239	175	134	
	38-2-74	9.2		C	2,149	1,719	1,433	1,228	1,075	955	860	781	716	614	537	
1-3/4" x 5/16"	38-4-75	11.4	0.806	U	2,686	1,719	1,194	877	672	531	430	355	298	219	168	
	38-2-75	12.9		C	2,686	2,149	1,791	1,535	1,343	1,194	1,075	977	895	768	672	
1-3/4" x 3/8"	38-4-76	13.4	0.967	U	3,224	2,063	1,433	1,053	806	637	516	426	358	263	201	
	38-2-76	14.9		C	3,224	2,579	2,149	1,842	1,612	1,433	1,289	1,172	1,075	921	806	
2" x 1/4"	38-4-84	9.7	0.842	U	2,807	1,796	1,248	917	702	554	449	371	312	229	175	
	38-2-84	10.3		C	2,807	2,246	1,871	1,604	1,404	1,248	1,123	1,021	936	802	702	
2" x 5/16"	38-4-85	12.9	1.053	U	3,509	2,246	1,559	1,146	877	693	561	464	390	286	219	
	38-2-85	14.4		C	3,509	2,807	2,339	2,005	1,754	1,559	1,404	1,276	1,170	1,003	877	
2" x 3/8"	38-4-86	15.1	1.263	U	4,211	2,695	1,871	1,375	1,053	832	674	557	468	344	263	
	38-2-86	16.6		C	4,211	3,368	2,807	2,406	2,105	1,871	1,684	1,531	1,404	1,203	1,053	
2-1/4" x 1/4"	38-4-94	10.8	1.066	U	3,553	2,274	1,579	1,160	888	702	568	470	395	290	222	
	38-2-94	11.5		C	3,553	2,842	2,368	2,030	1,776	1,579	1,421	1,292	1,184	1,015	888	
2-1/4" x 5/16"	38-4-95	14.3	1.332	U	4,441	2,842	1,974	1,450	1,110	877	711	587	493	363	278	
	38-2-95	15.8		C	4,441	3,553	2,961	2,538	2,220	1,974	1,776	1,615	1,480	1,269	1,110	
2-1/4" x 3/8"	38-4-96	16.8	1.599	U	5,329	3,411	2,368	1,740	1,332	1,053	853	705	592	435	333	
	38-2-96	18.3		C	5,329	4,263	3,553	3,045	2,664	2,368	2,132	1,938	1,776	1,523	1,332	
2-1/2" x 1/4"	38-4-104	12.0	1.316	U	4,386	2,807	1,949	1,432	1,096	866	702	580	487	358	274	
	38-2-104	12.6		C	4,386	3,509	2,924	2,506	2,193	1,949	1,754	1,595	1,462	1,253	1,096	
2-1/2" x 5/16"	38-4-105	15.7	1.645	U	5,482	3,509	2,437	1,790	1,371	1,083	877	725	609	448	343	
	38-2-105	17.2		C	5,482	4,386	3,655	3,133	2,741	2,437	2,193	1,994	1,827	1,566	1,371	
2-1/2" x 3/8"	38-4-106	18.5	1.974	U	6,579	4,211	2,924	2,148	1,645	1,300	1,053	870	731	537	411	
	38-2-106	20.0		C	6,579	5,263	4,386	3,759	3,289	2,924	2,632	2,392	2,193	1,880	1,645	
2-3/4" x 1/4"	38-4-114	14.0	1.592	U	5,307	3,396	2,359	1,733	1,327	1,048	849	702	590	433	332	
	38-2-114	15.5		C	5,307	4,246	3,538	3,033	2,654	2,359	2,123	1,930	1,769	1,516	1,327	
2-3/4" x 5/16"	38-4-115	17.7	1.990	U	6,634	4,246	2,948	2,166	1,658	1,310	1,061	877	737	542	415	
	38-2-115	19.7		C	6,634	5,307	4,423	3,791	3,317	2,948	2,654	2,412	2,211	1,895	1,658	
2-3/4" x 3/8"	38-4-116	20.7	2.388	U	7,961	5,095	3,538	2,599	1,990	1,572	1,274	1,053	885	650	498	
	38-2-116	22.8		C	7,961	6,368	5,307	4,549	3,980	3,538	3,184	2,895	2,654	2,274	1,990	

## 38-H-4 & 38-H-2 Heavy-Duty Steel Grating

### 38-H-4 & 38-H-2 (continued)

2-3/8" Center to Center of Bearing Bars

#### Load & Deflection Table

Bar Size	Symbol	Approx. Weight psf	Sec mod Per Ft of Width		SPAN (Length of Bearing Bar)										
					2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	7'-0"	8'-0"
3" x 1/4"	38-4-124	15.1		U	6,316	4,042	2,807	2,062	1,579	1,248	1,011	835	702	516	395
	38-2-124	16.7	1.895	C	6,316	5,053	4,211	3,609	3,158	2,807	2,526	2,297	2,105	1,805	1,579
3" x 5/16"	38-4-125	19.1		U	7,895	5,053	3,509	2,578	1,974	1,559	1,263	1,044	877	644	493
	38-2-125	21.1	2.368	C	7,895	6,316	5,263	4,511	3,947	3,509	3,158	2,871	2,632	2,256	1,974
3" x 3/8"	38-4-126	22.4		U	9,474	6,063	4,211	3,093	2,368	1,871	1,516	1,253	1,053	773	592
	38-2-126	24.5	2.842	C	9,474	7,579	6,316	5,414	4,737	4,211	3,789	3,445	3,158	2,707	2,368
3-1/4" x 1/4"	38-4-134	16.3		U	7,412	4,744	3,294	2,420	1,853	1,464	1,186	980	824	605	463
	38-2-134	17.8	2.224	C	7,412	5,930	4,942	4,236	3,706	3,294	2,965	2,695	2,471	2,118	1,853
3-1/4" x 5/16"	38-4-135	20.5		U	9,265	5,930	4,118	3,025	2,316	1,830	1,482	1,225	1,029	756	579
	38-2-135	22.5	2.780	C	9,265	7,412	6,177	5,294	4,633	4,118	3,706	3,369	3,088	2,647	2,316
3-1/4" x 3/8"	38-4-136	24.1		U	11,118	7,116	4,942	3,631	2,780	2,196	1,779	1,470	1,235	908	695
	38-2-136	26.2	3.336	C	11,118	8,895	7,412	6,353	5,559	4,942	4,447	4,043	3,706	3,177	2,780
3-1/2" x 1/4"	38-4-144	17.4		U	8,596	5,502	3,821	2,807	2,149	1,698	1,375	1,137	955	702	537
	38-2-144	18.9	2.579	C	8,596	6,877	5,731	4,912	4,298	3,821	3,439	3,126	2,865	2,456	2,149
3-1/2" x 5/16"	38-4-145	21.9		U	10,746	6,877	4,776	3,509	2,686	2,123	1,719	1,421	1,194	877	672
	38-2-145	24.0	3.224	C	10,746	8,596	7,164	6,140	5,373	4,776	4,298	3,907	3,582	3,070	2,686
3-1/2" x 3/8"	38-4-146	25.8		U	12,895	8,253	5,731	4,211	3,224	2,547	2,063	1,705	1,433	1,053	806
	38-2-146	27.9	3.868	C	12,895	10,316	8,596	7,368	6,447	5,731	5,158	4,689	4,298	3,684	3,224
4" x 1/4"	38-4-164	19.7		U	11,228	7,186	4,990	3,666	2,807	2,218	1,796	1,485	1,248	917	702
	38-2-164	21.2	3.368	C	11,228	8,982	7,485	6,416	5,614	4,990	4,491	4,083	3,743	3,208	2,807
4" x 5/16"	38-4-165	24.8		U	14,035	8,982	6,238	4,583	3,509	2,772	2,246	1,856	1,559	1,146	877
	38-2-165	26.8	4.211	C	14,035	11,228	9,357	8,020	7,018	6,238	5,614	5,104	4,678	4,010	3,509
4" x 3/8"	38-4-166	29.2		U	16,842	10,779	7,485	5,499	4,211	3,327	2,695	2,227	1,871	1,375	1,053
	38-2-166	31.3	5.053	C	16,842	13,474	11,228	9,624	8,421	7,485	6,737	6,124	5,614	4,812	4,211
4-1/2" x 1/4"	38-4-184	22.0		U	14,211	9,095	6,316	4,640	3,553	2,807	2,274	1,879	1,579	1,160	888
	38-2-184	23.5	4.263	C	14,211	11,368	9,474	8,120	7,105	6,316	5,684	5,167	4,737	4,060	3,553
4-1/2" x 5/16"	38-4-185	27.6		U	17,763	11,368	7,895	5,800	4,441	3,509	2,842	2,349	1,974	1,450	1,110
	38-2-185	29.6	5.329	C	17,763	14,211	11,842	10,150	8,882	7,895	7,105	6,459	5,921	5,075	4,441
4-1/2" x 3/8"	38-4-186	32.6		U	21,316	13,642	9,474	6,960	5,329	4,211	3,411	2,819	2,368	1,740	1,332
	38-2-186	34.7	6.395	C	21,316	17,053	14,211	12,180	10,658	9,474	8,526	7,751	7,105	6,090	5,329
5" x 1/4"	38-4-204	24.2		U	17,544	11,228	7,797	5,729	4,386	3,465	2,807	2,320	1,949	1,432	1,096
	38-2-204	25.7	5.263	C	17,544	14,035	11,696	10,025	8,772	7,797	7,018	6,380	5,848	5,013	4,386
5" x 5/16"	38-4-205	30.4		U	21,930	14,035	9,747	7,161	5,482	4,332	3,509	2,900	2,437	1,790	1,371
	38-2-205	32.5	6.579	C	21,930	17,544	14,620	12,531	10,965	9,747	8,772	7,974	7,310	6,266	5,482
5" x 3/8"	38-4-206	36.0		U	26,316	16,842	11,696	8,593	6,579	5,198	4,211	3,480	2,924	2,148	1,645
	38-2-206	38.1	7.895	C	26,316	21,053	17,544	15,038	13,158	11,696	10,526	9,569	8,772	7,519	6,579
6" x 1/4"	38-4-244	28.8		U	25,263	16,168	11,228	8,249	6,316	4,990	4,042	3,341	2,807	2,062	1,579
	38-2-244	30.3	7.579	C	25,263	20,211	16,842	14,436	12,632	11,228	10,105	9,187	8,421	7,218	6,316
6" x 5/16"	38-4-245	36.1		U	31,579	20,211	14,035	10,311	7,895	6,238	5,053	4,176	3,509	2,578	1,974
	38-2-245	38.1	9.474	C	31,579	25,263	21,053	18,045	15,789	14,035	12,632	11,483	10,526	9,023	7,895
6" x 3/8"	38-4-246	42.8		U	37,895	24,253	16,842	12,374	9,474	7,485	6,063	5,011	4,211	3,093	2,368
	38-2-246	44.9	11.368	C	37,895	30,316	25,263	21,654	18,947	16,842	15,158	13,780	12,632	10,827	9,474

U= safe uniform load, psf - C= safe concentrated load, pfw - D= deflection, inches - E= modulus of elasticity, 29,000,000 psi - F= fiber stress, 20,000 psi

H-38 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
1/4" Bar	2 5/8	5	7 3/8	9 3/4	12 1/8	14 1/2	16 7/8	19 1/4	21 5/8	24	26 3/8	28 3/4	31 1/8	33 1/2	35 7/8
5/16" Bar	2 11/16	5 5/16	7 7/16	9 13/16	12 3/16	14 9/16	16 15/16	19 5/16	21 11/16	24 1/16	26 7/16	28 13/16	31 3/16	33 15/16	35 15/16
3/8" Bar	2 3/4	5 1/8	7 1/2	9 7/8	12 1/4	14 5/8	17	19 3/8	21 3/4	24 1/8	26 1/2	28 7/8	31 1/4	33 5/8	35