IGtru™ Load Table

Use this table when evaluating spans and loads for the following types of steel grating:

11-W-4, 11-W-2, 11-DT-4, 11-DT-2

IGtru™ is manufactured to NAAMM standards and is fully ADA compliant with a minimum 3/16" bearing bar thickness

Bearing Bar Size	Approx. Weight psf *	Maximum Pedestrian Span**		Unsupported Span												
				2'-0	2'-6	3'-0	3'-6	4'-0	4'-6	5'-0	5'-6	6'-0	6'-6	7'-0	8'-0	9'-0
3/4 x 3/16	9.3	4'-4"	U	964	617	429	315	241	190	154	128					
			D	0.099	0.155	0.223	0.304	0.397	0.503	0.621	0.751					
			C	964	771	643	551	482	429	386	351					
			D	0.079	0.124	0.179	0.243	0.318	0.402	0.497	0.601					
1 x 1/8	8.4	4'-11"	U	1,143	731	508	373	286	226	183	151					
			D	0.074	0.116	0.168	0.228	0.298	0.377	0.466	0.563					
			C	1,143	914	762	653	571	508	457	416					
			D	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451					
1 x 3/16	12.3	5'-5"	U	1,714	1,097	762	560	429	339	274	227	190				
			D	0.074	0.116	0.168	0.228	0.298	0.377	0.466	0.563	0.670				
			C	1,714	1,371	1,143	980	857	762	686	623	571				
			D	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536				
1-1/4 x 1/8	10.3	5'-9"	U	1,786	1,143	794	583	446	353	286	236	198	169	146		
			D	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536	0.629	0.730		
			C	1,786	1,429	1,190	1,020	893	794	714	649	595	549	510		
			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	15.2	6'-5"	U	2,679	1,714	1,190	875	670	529	429	354	298	254	219	167	
			D	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536	0.629	0.730	0.953	
			C	2,679	2,143	1,786	1,531	1,339	1,190	1,071	974	893	824	765	670	
			D	0.048	0.074	0.107	0.146	0.191	0.241	0.298	0.360	0.429	0.504	0.584	0.763	
1-1/2 x 1/8	12.3	6'-8"	U	2,571	1,646	1,143	840	643	508	411	340	286	243	210	161	127
			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
			C	2,571	2,057	1,714	1,469	1,286	1,143	1,029	935	857	791	735	643	571
			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	18.3	7'-4"	U	3,857	2,469	1,714	1,259	964	762	617	510	429	365	315	241	190
			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
			C	3,857	3,086	2,571	2,204	1,929	1,714	1,543	1,403	1,286	1,187	1,102	964	857
			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 1/8	14.4	7'-5"	U	3,500	2,240	1,556	1,143	875	691	560	463	389	331	286	219	173
			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
			C	3,500	2,800	2,333	2,000	1,750	1,556	1,400	1,273	1,167	1,077	1,000	875	778
			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
1-3/4 x 3/16	21.2	8'-1"	U	5,250	3,360	2,333	1,714	1,313	1,037	840	694	583	497	429	328	259
			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
			C	5,250	4,200	3,500	3,000	2,625	2,333	2,100	1,909	1,750	1,615	1,500	1,313	1,167
			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 1/8	16.3	8'-3"	U	4,571	2,926	2,032	1,493	1,143	903	731	604	508	433	373	286	226
			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
			C	4,571	3,657	3,048	2,612	2,286	2,032	1,829	1,662	1,524	1,407	1,306	1,143	1,016
			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 x 3/16	24.1	9'-1"	U	6,857	4,389	3,048	2,239	1,714	1,354	1,097	907	762	649	560	429	339
			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
			C	6,857	5,486	4,571	3,918	3,429	3,048	2,743	2,494	2,286	2,110	1,959	1,714	1,524
			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	27.0	10'-0"	U	8,679	5,554	3,857	2,834	2,170	1,714	1,389	1,148	964	822	708	542	429
			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
			C	8,679	6,943	5,786	4,959	4,339	3,857	3,471	3,156	2,893	2,670	2,480	2,170	1,929
			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	29.9	10'-9"	U	10,714	6,857	4,762	3,499	2,679	2,116	1,714	1,417	1,190	1,014	875	670	529
			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
			C	10,714	8,571	7,143	6,122	5,357	4,762	4,286	3,896	3,571	3,297	3,061	2,679	2,381
			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

All loads and deflections are theoretical and based upon the gross sections of the bearing bars, using a fiber stress of 18,000 psi.

The values are not intended to be absolute since the actual load capacity will be affected by the slight variations in mill and manufacturing tolerances.

U = Safe Uniform Load in pounds/sq. ft.
C = Concentrated Load in pounds/ft. of grating width
D = Deflection in inches

For pedestrian comfort, deflection in excess of .250 inches in not recommended.

* Weight per square foot based upon IGtru™ 11-W-4 grating. Add .60 psf for 2" on center cross bars.

** Maximum pedestrian load is defined as a 100# Uniform Load with deflection ≤ 1/4 inch.
The 1/4" maximum deflection criteria is considered consistent with pedestrian comfort, but may be exceeded for other loading conditions at the discretion of the specifying authority.

Note: When gratings with serrated surface are specified, the depth of the grating required for a specific load will be ¼" greater than that shown in these tables.

Panel Widths

Grating panels are available from stock in nominal 24" and 36" widths. When considering alternative widths, consult this table to select widths that will maintain uniform "out-to-out" spacing of the bearing bars. Specified widths deviating from this table will be fabricated to size with side banding and the bar spacing on one side of the finished panel will deviate from the spacing throughout the remainder of the panel. Spacing is based on 21/32.

Number of Bearing Bars	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Panel Width	7/8"	1-1/2"	2-3/16"	2-13/16"	3-1/2"	4-1/8"	4-13/16"	5-7/16"	6-1/8"	6-3/4"	7-7/16"	8-1/16"	8-3/4"	9-3/8"	10-1/16"
Number of Bearing Bars	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Panel Width	10-11/16"	11-3/8"	12"	12-11/16"	13-5/16"	14"	14-5/8"	15-5/16"	15-15/16"	16-5/8"	17-1/4"	17-15/16"	18-9/16"	19-1/4"	19-7/8"
Number of Bearing Bars	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
Panel Width	20-9/16"	21-3/16"	21-7/8"	22-1/2"	23-3/16"	23-13/16"	24-1/2"	25-1/8"	25-13/16"	26-7/16"	27-1/8"	27-3/4"	28-7/16"	29-1/16"	29-3/4"
Number of Bearing Bars	47	48	49	50	51	52	53	54	55	56					
Panel Width	30-3/8"	31-1/16"	31-11/16"	32-3/8"	33"	33-11/16"	34-5/16"	35"	35-5/8"	36-5/16"					

Panel widths indicated are for gratings with 3/16" thick bearing bars. For 1/8" thick bearing bars deduct 1/16" from the stated values.

Indicates stock panel widths.

Steel Bar Grating

11 Space Load Table

Use this table when evaluating spans and loads for the following types of steel grating:

11-SL-4 and 11-SL-2

Bearing Bar Size	Approx. Weight psf *	Maximum Pedestrian Span**		Unsupported Span												
				2'-0	2'-6	3'-0	3'-6	4'-0	4'-6	5'-0	5'-6	6'-0	6'-6	7'-0	8'-0	9'-0
3/4 x 3/16	9.1	4'-4"	U	921	589	409	301	230	182	147						
			D	0.099	0.155	0.223	0.304	0.397	0.503	0.621						
			C	921	736	614	526	460	409	368						
			D	0.079	0.124	0.179	0.243	0.318	0.402	0.497						
1 x 1/8	8.1	4'-11"	U	1,091	698	485	356	273	216	175	144					
			D	0.074	0.116	0.168	0.228	0.298	0.377	0.466	0.563					
			C	1,091	873	727	623	546	485	436	397					
			D	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451					
1 x 3/16	11.9	5'-5"	U	1,636	1,047	727	534	409	323	262	216	182				
			D	0.074	0.116	0.168	0.228	0.298	0.377	0.466	0.563	0.670				
			C	1,636	1,309	1,091	935	818	727	655	595	546				
			D	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536				
1-1/4 x 1/8	10.0	5'-9"	U	1,705	1,091	758	557	426	337	273	225	189	161			
			D	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536	0.629			
			C	1,705	1,364	1,136	974	852	758	682	620	568	525			
			D	0.048	0.074	0.107	0.146	0.191	0.241	0.298	0.360	0.429	0.504			
1-1/4 x 3/16	14.7	6'-5"	U	2,557	1,636	1,136	835	639	505	409	338	284	242	209		
			D	0.060	0.093	0.134	0.182	0.238	0.302	0.372	0.451	0.536	0.629	0.730		
			C	2,557	2,046	1,705	1,461	1,278	1,136	1,023	930	852	787	731		
			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	11.9	6'-8"	U	2,455	1,571	1,091	802	614	485	393	325	273	232	200	153	
			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	
			C	2,455	1,964	1,636	1,403	1,227	1,091	982	893	818	755	701	614	
			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	
1-1/2 x 3/16	17.7	7'-4"	U	3,682	2,356	1,636	1,202	921	727	589	487	409	349	301	230	182
			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
			C	3,682	2,946	2,455	2,104	1,841	1,636	1,473	1,339	1,227	1,133	1,052	921	818
			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 1/8	13.9	7'-5"	U	3,341	2,138	1,485	1,091	835	660	535	442	371	316	273	209	165
			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
			C	3,341	2,673	2,227	1,909	1,671	1,485	1,336	1,215	1,114	1,028	955	835	742
			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
1-3/4 x 3/16	20.5	8'-3"	U	5,011	3,207	2,227	1,636	1,253	990	802	663	557	474	409	313	248
			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
			C	5,011	4,009	3,341	2,864	2,506	2,227	2,005	1,822	1,671	1,542	1,432	1,253	1,114
			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 1/8	15.8	8'-3"	U	4,364	2,793	1,939	1,425	1,091	862	698	577	485	413	356	273	216
			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
			C	4,364	3,491	2,909	2,494	2,182	1,939	1,746	1,587	1,455	1,343	1,247	1,091	970
			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 x 3/16	23.3	9'-1"	U	6,546	4,189	2,909	2,137	1,636	1,293	1,047	866	727	620	534	409	323
			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
			C	6,546	5,236	4,364	3,740	3,273	2,909	2,618	2,380	2,182	2,014	1,870	1,636	1,455
			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	26.1	10'-0"	U	8,284	5,302	3,682	2,705	2,071	1,636	1,326	1,095	921	784	676	518	409
			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
			C	8,284	6,627	5,523	4,734	4,142	3,682	3,314	3,012	2,761	2,549	2,367	2,071	1,841
			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	28.9	10'-9"	U	10,227	6,546	4,546	3,340	2,557	2,020	1,636	1,352	1,136	968	835	639	505
			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
			C	10,227	8,182	6,818	5,844	5,114	4,546	4,091	3,719	3,409	3,147	2,922	2,557	2,273
			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

All loads and deflections are theoretical and based upon the gross sections of the bearing bars, using a fiber stress of 18,000 psi.

The values are not intended to be absolute since the actual load capacity will be affected by the slight variations in mill and manufacturing tolerances.

Grating for spans to the left of the heavy line have a deflection ≤ 1/4" for uniform loads of 100 psf.

U = Safe Uniform Load in pounds/sq. ft.
C = Concentrated Load in pounds/ft. of grating width
D = Deflection in inches

* Weight per square foot based upon 11-W-4 grating. Add .60 psf for 2" on center cross bars.

** Maximum pedestrian load is defined as a 100# Uniform Load with deflection ≤ 1/4 inch.
The 1/4" maximum deflection criteria is considered consistent with pedestrian comfort, but may be exceeded for other loading conditions at the discretion of the specifying authority.

Note: When gratings with serrated surface are specified, the depth of the grating required for a specific load will be ¼" greater than that shown in these tables.

Panel Widths

Grating panels are available from stock in nominal 24" and 36" widths. When considering alternative widths, consult this table to select widths that will maintain uniform "out-to-out" spacing of the bearing bars. Specified widths deviating from this table will be fabricated to size with side banding and the bar spacing on one side of the finished panel will deviate from the spacing throughout the remainder of the panel.

Number of Bearing Bars	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Panel Width	7/8"	1-9/16"	2-1/4"	2-15/16"	3-5/8"	4-5/16"	5"	5-11/16"	6-3/8"	7-1/16"	7-3/4"	8-7/16"	9-1/8"	9-13/16"	10-1/2"
Number of Bearing Bars	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Panel Width	11-3/16"	11-7/8"	12-9/16"	13-1/4"	13-15/16"	14-5/8"	15-5/16"	16"	16-11/16"	17-3/8"	18-1/16"	18-3/4"	19-7/16"	20-1/8"	20-13/16"
Number of Bearing Bars	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
Panel Width	21-1/2"	22-3/16"	22-7/8"	23-9/16"	24-1/4"	24-15/16"	25-5/8"	26-5/16"	27"	27-11/16"	28-3/8"	29-1/16"	29-3/4"	30-7/16"	31-1/8"
Number of Bearing Bars	47	48	49	50	51	52	53								
Panel Width	31-13/16"	32-1/2"	33-3/16"	33-7/8"	34-9/16"	35-1/4"	35-15/16"								

Panel widths indicated are for gratings with 3/16" thick bearing bars. For 1/8" thick bearing bars deduct 1/16" from the stated values.

Indicates stock panel widths.