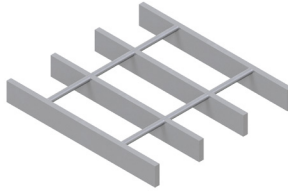


HEAVY DUTY

Load Tables - Extra-Wide-Gap

Grating Type: **38HW4**
 Design Code: **NAAMM MBG 534-19**
 Material: **ASTM A1011CS Grade 36**
 Surface: **Smooth**



U = Safe Uniform Load (lbs/ft²)
 D_u = Deflection Due to Safe Uniform Load (in)
 C = Safe Concentrated Load (lbs/ft of grating width)
 D_c = Deflection Due to Safe Concentrated Load (in)
 Allowable Extreme Fiber Stress = 20 ksi

Bearing Bar Size (inches)	Approx. Weight (lbs/ft ²)	Ped. Span (inches)	Load / Deflection	Span (ft - in)														Section Properties		
				1' - 0"	1' - 6"	2' - 0"	2' - 6"	3' - 0"	3' - 6"	4' - 0"	4' - 6"	5' - 0"	5' - 6"	6' - 0"	6' - 6"	7' - 0"	7' - 6"	8' - 0"	S _x (in ³ /ft)	I _x (in ⁴ /ft)
1" x 1/4"	5.62	51	U	2,807	1,248	702	449	312	229	175	139							0.211	0.105	
			D _u	0.02	0.05	0.08	0.13	0.19	0.25	0.33	0.42									
			C	1,404	936	702	561	468	401	351	312									
			D _c	0.02	0.04	0.07	0.10	0.15	0.20	0.26	0.34									
1 1/4" x 1/4"	6.70	61	U	4,386	1,949	1,096	702	487	358	274	217	175	145					0.329	0.206	
			D _u	0.02	0.04	0.07	0.10	0.15	0.20	0.26	0.34	0.41	0.50							
			C	2,193	1,462	1,096	877	731	627	548	487	439	399							
			D _c	0.01	0.03	0.05	0.08	0.12	0.16	0.21	0.27	0.33	0.40							
1 1/2" x 1/4"	7.77	70	U	6,316	2,807	1,579	1,011	702	516	395	312	253	209	175				0.474	0.355	
			D _u	0.01	0.03	0.06	0.09	0.12	0.17	0.22	0.28	0.34	0.42	0.50						
			C	3,158	2,105	1,579	1,263	1,053	902	789	702	632	574	526						
			D _c	0.01	0.02	0.04	0.07	0.10	0.14	0.18	0.22	0.28	0.33	0.40						
1 1/2" x 3/8"	11.17	77	U	9,474	4,211	2,368	1,516	1,053	773	592	468	379	313	263	224			0.711	0.533	
			D _u	0.01	0.03	0.06	0.09	0.12	0.17	0.22	0.28	0.34	0.42	0.50	0.58					
			C	4,737	3,158	2,368	1,895	1,579	1,353	1,184	1,053	947	861	789	729					
			D _c	0.01	0.02	0.04	0.07	0.10	0.14	0.18	0.22	0.28	0.33	0.40	0.47					
2" x 1/4"	9.92	87	U	11,228	4,990	2,807	1,796	1,248	917	702	554	449	371	312	266	229	200	0.842	0.842	
			D _u	0.01	0.02	0.04	0.06	0.09	0.13	0.17	0.21	0.26	0.31	0.37	0.44	0.51	0.58			
			C	5,614	3,743	2,807	2,246	1,871	1,604	1,404	1,248	1,123	1,021	936	864	802	749			
			D _c	0.01	0.02	0.03	0.05	0.07	0.10	0.13	0.17	0.21	0.25	0.30	0.35	0.41	0.47			
2 1/2" x 1/4"	12.06	102	U	17,544	7,797	4,386	2,807	1,949	1,432	1,096	866	702	580	487	415	358	312	274	1.316	1.645
			D _u	0.01	0.02	0.03	0.05	0.07	0.10	0.13	0.17	0.21	0.25	0.30	0.35	0.41	0.47	0.53		
			C	8,772	5,848	4,386	3,509	2,924	2,506	2,193	1,949	1,754	1,595	1,462	1,350	1,253	1,170	1,096		
			D _c	0.01	0.01	0.03	0.04	0.06	0.08	0.11	0.13	0.17	0.20	0.24	0.28	0.32	0.37	0.42		
3" x 1/4"	14.21	117	U	25,263	11,228	6,316	4,042	2,807	2,062	1,579	1,248	1,011	835	702	598	516	449	395	1.895	2.842
			D _u	0.01	0.02	0.03	0.04	0.06	0.08	0.11	0.14	0.17	0.21	0.25	0.29	0.34	0.39	0.44		
			C	12,632	8,421	6,316	5,053	4,211	3,609	3,158	2,807	2,526	2,297	2,105	1,943	1,805	1,684	1,579		
			D _c	0.01	0.01	0.02	0.03	0.05	0.07	0.09	0.11	0.14	0.17	0.20	0.23	0.27	0.31	0.35		
3" x 3/8"	21.37	130	U	37,895	16,842	9,474	6,063	4,211	3,093	2,368	1,871	1,516	1,253	1,053	897	773	674	592	2.842	4.263
			D _u	0.01	0.02	0.03	0.04	0.06	0.08	0.11	0.14	0.17	0.21	0.25	0.29	0.34	0.39	0.44		
			C	18,947	12,632	9,474	7,579	6,316	5,414	4,737	4,211	3,789	3,445	3,158	2,915	2,707	2,526	2,368		
			D _c	0.01	0.01	0.02	0.03	0.05	0.07	0.09	0.11	0.14	0.17	0.20	0.23	0.27	0.31	0.35		

Spans and loads in red exceed a deflection of 1/4" for uniform loads of 100 lbs./sq. ft. Experience has shown that 1/4" deflection is the maximum deflection to give pedestrian comfort, but can be exceeded for other types of loads at the discretion of the specifying professional.

38HW4 (in)

# of Bars	2	3	4	5	6	7	8	9	10	11
1/4" Bars	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
3/8" Bars	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
# of Bars	12	13	14	15	16	17	18	19	20	21
1/4" Bars	26-3/8	28-3/4	31-1/8	33-1/2	35-7/8	38-1/4	40-5/8	43	45-3/8	47-3/4
3/8" Bars	26-1/2	28-7/8	31-1/4	33-5/8	36	38-3/8	40-3/4	43-1/8	45-1/2	47-7/8

Load Table Continued on Next Page

LOAD TABLES | HEAVY DUTY, IMPERIAL

HEAVY DUTY

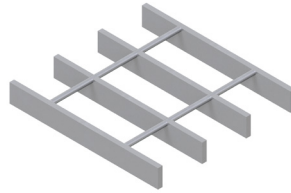
Load Tables - Extra-Wide-Gap

Grating Type: 38HW4

Design Code: NAAMM MBG 534-19

Material: ASTM A1011CS Grade 36

Surface: Smooth



U = Safe Uniform Load (lbs/ft²)

D_u = Deflection Due to Safe Uniform Load (in)

C = Safe Concentrated Load (lbs/ft of grating width)

D_c = Deflection Due to Safe Concentrated Load (in)

Allowable Extreme Fiber Stress = 20 ksi

Bearing Bar Size (inches)	Approx. Weight (lbs/ft ²)	Ped. Span (inches)	Load / Deflection	Span (ft -in)																Section Properties	
				1' - 0"	1' - 6"	2' - 0"	2' - 6"	3' - 0"	3' - 6"	4' - 0"	4' - 6"	5' - 0"	5' - 6"	6' - 0"	6' - 6"	7' - 0"	7' - 6"	8' - 0"	S _x (in ³ /ft)	I _x (in ⁴ /ft)	
				3 1/2" x 1/4"	16.36	132	U	34,386	15,283	8,596	5,502	3,821	2,807	2,149	1,698	1,375	1,137	955	814	702	611
			D _u	0.01	0.01	0.02	0.04	0.05	0.07	0.09	0.12	0.15	0.18	0.21	0.25	0.29	0.33	0.38			
			C	17,193	11,462	8,596	6,877	5,731	4,912	4,298	3,821	3,439	3,126	2,865	2,645	2,456	2,292	2,149	4.513		
			D _c	0.00	0.01	0.02	0.03	0.04	0.06	0.08	0.10	0.12	0.14	0.17	0.20	0.23	0.27	0.30			
3 1/2" x 3/8"	24.60	146	U	51,579	22,924	12,895	8,253	5,731	4,211	3,224	2,547	2,063	1,705	1,433	1,221	1,053	917	806	3.868		
			D _u	0.01	0.01	0.02	0.04	0.05	0.07	0.09	0.12	0.15	0.18	0.21	0.25	0.29	0.33	0.38			
			C	25,789	17,193	12,895	10,316	8,596	7,368	6,447	5,731	5,158	4,689	4,298	3,968	3,684	3,439	3,224	6.770		
			D _c	0.00	0.01	0.02	0.03	0.04	0.06	0.08	0.10	0.12	0.14	0.17	0.20	0.23	0.27	0.30			
4" x 1/4"	18.51	146	U	44,912	19,961	11,228	7,186	4,990	3,666	2,807	2,218	1,796	1,485	1,248	1,063	917	798	702	3.368		
			D _u	0.01	0.01	0.02	0.03	0.05	0.06	0.08	0.10	0.13	0.16	0.19	0.22	0.25	0.29	0.33			
			C	22,456	14,971	11,228	8,982	7,485	6,416	5,614	4,990	4,491	4,083	3,743	3,455	3,208	2,994	2,807	6.737		
			D _c	0.00	0.01	0.02	0.03	0.04	0.05	0.07	0.08	0.10	0.13	0.15	0.17	0.20	0.23	0.26			
4" x 3/8"	27.82	161	U	67,368	29,942	16,842	10,779	7,485	5,499	4,211	3,327	2,695	2,227	1,871	1,595	1,375	1,198	1,053	5.053		
			D _u	0.01	0.01	0.02	0.03	0.05	0.06	0.08	0.10	0.13	0.16	0.19	0.22	0.25	0.29	0.33			
			C	33,684	22,456	16,842	13,474	11,228	9,624	8,421	7,485	6,737	6,124	5,614	5,182	4,812	4,491	4,211	10.105		
			D _c	0.00	0.01	0.02	0.03	0.04	0.05	0.07	0.08	0.10	0.13	0.15	0.17	0.20	0.23	0.26			
5" x 3/8"	34.26	191	U	105,263	46,784	26,316	16,842	11,696	8,593	6,579	5,198	4,211	3,480	2,924	2,491	2,148	1,871	1,645	7.895		
			D _u	0.00	0.01	0.02	0.03	0.04	0.05	0.07	0.08	0.10	0.13	0.15	0.17	0.20	0.23	0.26			
			C	52,632	35,088	26,316	21,053	17,544	15,038	13,158	11,696	10,526	9,569	8,772	8,097	7,519	7,018	6,579	19.737		
			D _c	0.00	0.01	0.01	0.02	0.03	0.04	0.05	0.07	0.08	0.10	0.12	0.14	0.16	0.19	0.21			
6" x 3/8"	40.70	218	U	151,579	67,368	37,895	24,253	16,842	12,374	9,474	7,485	6,063	5,011	4,211	3,588	3,093	2,695	2,368	11.368		
			D _u	0.00	0.01	0.01	0.02	0.03	0.04	0.06	0.07	0.09	0.10	0.12	0.15	0.17	0.19	0.22			
			C	75,789	50,526	37,895	30,316	25,263	21,654	18,947	16,842	15,158	13,780	12,632	11,660	10,827	10,105	9,474	34.105		
			D _c	0.00	0.01	0.01	0.02	0.02	0.03	0.04	0.06	0.07	0.08	0.10	0.12	0.14	0.16	0.18			

Spans and loads in red exceed a deflection of 1/4" for uniform loads of 100 lbs./sq. ft. Experience has shown that 1/4" deflection is the maximum deflection to give pedestrian comfort, but can be exceeded for other types of loads at the discretion of the specifying professional.

38HW4 (in)

# of Bars	2	3	4	5	6	7	8	9	10	11
1/4" Bars	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
3/8" Bars	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
# of Bars	12	13	14	15	16	17	18	19	20	21
1/4" Bars	26-3/8	28-3/4	31-1/8	33-1/2	35-7/8	38-1/4	40-5/8	43	45-3/8	47-3/4
3/8" Bars	26-1/2	28-7/8	31-1/4	33-5/8	36	38-3/8	40-3/4	43-1/8	45-1/2	47-7/8

HEAVY DUTY

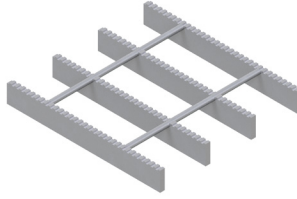
Load Tables - Extra-Wide-Gap

Grating Type: **38HW4**

Design Code: **NAAMM MBG 534-19**

Material: **ASTM A1011CS Grade 36**

Surface: **Serrated**



U = Safe Uniform Load (lbs/ft²)

D_u = Deflection Due to Safe Uniform Load (in)

C = Safe Concentrated Load (lbs/ft of grating width)

D_c = Deflection Due to Safe Concentrated Load (in)

Allowable Extreme Fiber Stress = 20 ksi

Bearing Bar Size (inches)	Approx. Weight (lbs/ft ²)	Ped. Span (inches)	Load / Deflection	Span (ft - in)														Section Properties		
				1' - 0"	1' - 6"	2' - 0"	2' - 6"	3' - 0"	3' - 6"	4' - 0"	4' - 6"	5' - 0"	5' - 6"	6' - 0"	6' - 6"	7' - 0"	7' - 6"	8' - 0"	S _x (in ³ /ft)	I _x (in ⁴ /ft)
				1" x 1/4"	4.55	42	U	1,579	702	395	253	175	129							
			D _u	0.03	0.06	0.11	0.17	0.25	0.34										0.044	
			C	789	526	395	316	263	226											
			D _c	0.02	0.05	0.09	0.14	0.20	0.27											
1 1/4" x 1/4"	5.62	51	U	2,807	1,248	702	449	312	229	175	139							0.211		
			D _u	0.02	0.05	0.08	0.13	0.19	0.25	0.33	0.42								0.105	
			C	1,404	936	702	561	468	401	351	312									
			D _c	0.02	0.04	0.07	0.10	0.15	0.20	0.26	0.34									
1 1/2" x 1/4"	6.70	61	U	4,386	1,949	1,096	702	487	358	274	217	175	145					0.329		
			D _u	0.02	0.04	0.07	0.10	0.15	0.20	0.26	0.34	0.41	0.50						0.206	
			C	2,193	1,462	1,096	877	731	627	548	487	439	399							
			D _c	0.01	0.03	0.05	0.08	0.12	0.16	0.21	0.27	0.33	0.40							
1 1/2" x 3/8"	9.56	67	U	6,579	2,924	1,645	1,053	731	537	411	325	263	217	183				0.493		
			D _u	0.02	0.04	0.07	0.10	0.15	0.20	0.26	0.34	0.41	0.50	0.60					0.308	
			C	3,289	2,193	1,645	1,316	1,096	940	822	731	658	598	548						
			D _c	0.01	0.03	0.05	0.08	0.12	0.16	0.21	0.27	0.33	0.40	0.48						
2" x 1/4"	8.84	78	U	8,596	3,821	2,149	1,375	955	702	537	425	344	284	239	203			0.645		
			D _u	0.01	0.03	0.05	0.07	0.11	0.14	0.19	0.24	0.30	0.36	0.43	0.50				0.564	
			C	4,298	2,865	2,149	1,719	1,433	1,228	1,075	955	860	781	716	661					
			D _c	0.01	0.02	0.04	0.06	0.09	0.12	0.15	0.19	0.24	0.29	0.34	0.40					
2 1/2" x 1/4"	10.99	95	U	14,211	6,316	3,553	2,274	1,579	1,160	888	702	568	470	395	336	290	253	222	1.066	
			D _u	0.01	0.02	0.04	0.06	0.08	0.11	0.15	0.19	0.23	0.28	0.33	0.39	0.45	0.52	0.59		
			C	7,105	4,737	3,553	2,842	2,368	2,030	1,776	1,579	1,421	1,292	1,184	1,093	1,015	947	888		
			D _c	0.01	0.02	0.03	0.05	0.07	0.09	0.12	0.15	0.18	0.22	0.26	0.31	0.36	0.41	0.47		
3" x 1/4"	13.14	110	U	21,228	9,435	5,307	3,396	2,359	1,733	1,327	1,048	849	702	590	502	433	377	332	1.592	
			D _u	0.01	0.02	0.03	0.05	0.07	0.09	0.12	0.15	0.19	0.23	0.27	0.32	0.37	0.42	0.48		
			C	10,614	7,076	5,307	4,246	3,538	3,033	2,654	2,359	2,123	1,930	1,769	1,633	1,516	1,415	1,327		
			D _c	0.01	0.01	0.02	0.04	0.05	0.07	0.10	0.12	0.15	0.18	0.22	0.25	0.29	0.34	0.39		
3" x 3/8"	19.22	122	U	31,842	14,152	7,961	5,095	3,538	2,599	1,990	1,572	1,274	1,053	885	754	650	566	498	2.388	
			D _u	0.01	0.02	0.03	0.05	0.07	0.09	0.12	0.15	0.19	0.23	0.27	0.32	0.37	0.42	0.48		
			C	15,921	10,614	7,961	6,368	5,307	4,549	3,980	3,538	3,184	2,895	2,654	2,449	2,274	2,123	1,990		
			D _c	0.01	0.01	0.02	0.04	0.05	0.07	0.10	0.12	0.15	0.18	0.22	0.25	0.29	0.34	0.39		

Spans and loads in red exceed a deflection of 1/4" for uniform loads of 100 lbs./sq. ft. Experience has shown that 1/4" deflection is the maximum deflection to give pedestrian comfort, but can be exceeded for other types of loads at the discretion of the specifying professional.

38HW4 (in)

# of Bars	2	3	4	5	6	7	8	9	10	11
1/4" Bars	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
3/8" Bars	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
# of Bars	12	13	14	15	16	17	18	19	20	21
1/4" Bars	26-3/8	28-3/4	31-1/8	33-1/2	35-7/8	38-1/4	40-5/8	43	45-3/8	47-3/4
3/8" Bars	26-1/2	28-7/8	31-1/4	33-5/8	36	38-3/8	40-3/4	43-1/8	45-1/2	47-7/8

Load Table Continued on Next Page

LOAD TABLES | HEAVY DUTY, IMPERIAL

HEAVY DUTY

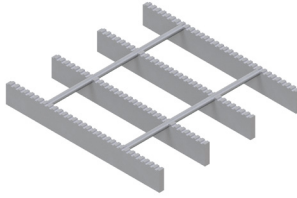
Load Tables - Extra-Wide-Gap

Grating Type: **38HW4**

Design Code: **NAAMM MBG 534-19**

Material: **ASTM A1011CS Grade 36**

Surface: **Serrated**



U = Safe Uniform Load (lbs/ft²)

D_u = Deflection Due to Safe Uniform Load (in)

C = Safe Concentrated Load (lbs/ft of grating width)

D_c = Deflection Due to Safe Concentrated Load (in)

Allowable Extreme Fiber Stress = 20 ksi

Bearing Bar Size (inches)	Approx. Weight (lbs/ft ²)	Ped. Span (inches)	Load / Deflection	Span (ft - in)															Section Properties	
				1' - 0"	1' - 6"	2' - 0"	2' - 6"	3' - 0"	3' - 6"	4' - 0"	4' - 6"	5' - 0"	5' - 6"	6' - 0"	6' - 6"	7' - 0"	7' - 6"	8' - 0"	S _x (in ³)/ft	I _x (in ⁴)/ft
				3 1/2" x 1/4"	15.29	125	U	29,649	13,177	7,412	4,744	3,294	2,420	1,853	1,464	1,186	980	824	702	605
D _u	0.01	0.01	0.03	0.04	0.06	0.08	0.10	0.13	0.16	0.19	0.23	0.27	0.31	0.36	0.41					
C	14,825	9,883	7,412	5,930	4,942	4,236	3,706	3,294	2,965	2,695	2,471	2,281	2,118	1,977	1,853					
D _c	0.01	0.01	0.02	0.03	0.05	0.06	0.08	0.10	0.13	0.15	0.18	0.22	0.25	0.29	0.33					
3 1/2" x 3/8"	22.98	138	U	44,474	19,766	11,118	7,116	4,942	3,631	2,780	2,196	1,779	1,470	1,235	1,053	908	791	695	3.336	5.420
D _u	0.01	0.01	0.03	0.04	0.06	0.08	0.10	0.13	0.16	0.19	0.23	0.27	0.31	0.36	0.41					
C	22,237	14,825	11,118	8,895	7,412	6,353	5,559	4,942	4,447	4,043	3,706	3,421	3,177	2,965	2,780					
D _c	0.01	0.01	0.02	0.03	0.05	0.06	0.08	0.10	0.13	0.15	0.18	0.22	0.25	0.29	0.33					
4" x 1/4"	17.43	139	U	39,474	17,544	9,868	6,316	4,386	3,222	2,467	1,949	1,579	1,305	1,096	934	806	702	617	2.961	5.551
D _u	0.01	0.01	0.02	0.03	0.05	0.07	0.09	0.11	0.14	0.17	0.20	0.23	0.27	0.31	0.35					
C	19,737	13,158	9,868	7,895	6,579	5,639	4,934	4,386	3,947	3,589	3,289	3,036	2,820	2,632	2,467					
D _c	0.00	0.01	0.02	0.03	0.04	0.05	0.07	0.09	0.11	0.13	0.16	0.19	0.22	0.25	0.28					
4" x 3/8"	26.21	154	U	59,211	26,316	14,803	9,474	6,579	4,834	3,701	2,924	2,368	1,957	1,645	1,401	1,208	1,053	925	4.441	8.326
D _u	0.01	0.01	0.02	0.03	0.05	0.07	0.09	0.11	0.14	0.17	0.20	0.23	0.27	0.31	0.35					
C	29,605	19,737	14,803	11,842	9,868	8,459	7,401	6,579	5,921	5,383	4,934	4,555	4,229	3,947	3,701					
D _c	0.00	0.01	0.02	0.03	0.04	0.05	0.07	0.09	0.11	0.13	0.16	0.19	0.22	0.25	0.28					
5" x 3/8"	32.65	183	U	95,000	42,222	23,750	15,200	10,556	7,755	5,938	4,691	3,800	3,140	2,639	2,249	1,939	1,689	1,484	7.125	16.922
D _u	0.00	0.01	0.02	0.03	0.04	0.05	0.07	0.09	0.11	0.13	0.16	0.18	0.21	0.25	0.28					
C	47,500	31,667	23,750	19,000	15,833	13,571	11,875	10,556	9,500	8,636	7,917	7,308	6,786	6,333	5,938					
D _c	0.00	0.01	0.01	0.02	0.03	0.04	0.06	0.07	0.09	0.11	0.13	0.15	0.17	0.20	0.22					
6" x 3/8"	39.09	212	U	139,211	61,871	34,803	22,274	15,468	11,364	8,701	6,875	5,568	4,602	3,867	3,295	2,841	2,475	2,175	10.441	30.017
D _u	0.00	0.01	0.01	0.02	0.03	0.04	0.06	0.07	0.09	0.11	0.13	0.15	0.18	0.20	0.23					
C	69,605	46,404	34,803	27,842	23,202	19,887	17,401	15,468	13,921	12,656	11,601	10,709	9,944	9,281	8,701					
D _c	0.00	0.01	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.09	0.10	0.12	0.14	0.16	0.18					

Spans and loads in red exceed a deflection of 1/4" for uniform loads of 100 lbs./sq. ft. Experience has shown that 1/4" deflection is the maximum deflection to give pedestrian comfort, but can be exceeded for other types of loads at the discretion of the specifying professional.

38HW4 (in)

# of Bars	2	3	4	5	6	7	8	9	10	11
1/4" Bars	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
3/8" Bars	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
# of Bars	12	13	14	15	16	17	18	19	20	21
1/4" Bars	26-3/8	28-3/4	31-1/8	33-1/2	35-7/8	38-1/4	40-5/8	43	45-3/8	47-3/4
3/8" Bars	26-1/2	28-7/8	31-1/4	33-5/8	36	38-3/8	40-3/4	43-1/8	45-1/2	47-7/8