

EXPANDED METAL & GRATING

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* Available in Aluminum & Stainless Steel





Expanded Metals

Carbon Steel Regular
Raised

Style Designation	Weight per 100 Sq. Ft.	Stock Sizes in Ft.	Size of Opening in Inches	
			Width	Length
1/4" – No. 20	86	4 x 8	.125	.687
1/4" – No. 18	117	4 x 8	.125	.687
1/2" – No. 20	43	4 x 8	.375	.875
1/2" – No. 18	70	4 & 6 x 8 & 10	.375	.950
1/2" – No. 16	87	4 & 6 x 8 & 10	.375	.890
1/2" – No. 13	146	4 & 6 x 6 & 8	.350	.900
3/4" – No. 16	54	4 & 6 x 6 & 8	.700	1.640
3/4" – No. 13	80	4 & 6 x 8 & 10	.734	1.640
3/4" – No. 10	119	4 x 8	.675	1.563
3/4" – No. 9	180	4 & 6 x 8 & 10	.600	1.450
1" – No. 16	47	4 x 8	.875	1.937
1 1/2" – No. 16	40	4 x 8	1.180	2.600
1 1/2" – No. 13	60	4 & 6 x 8 & 10	1.200	2.600
1 1/2" – No. 10	79	4 & 6 x 8 & 10	1.156	2.520
1 1/2" – No. 9	119	4 & 6 x 8 & 10	1.140	2.430

Specifying - Sheet Size

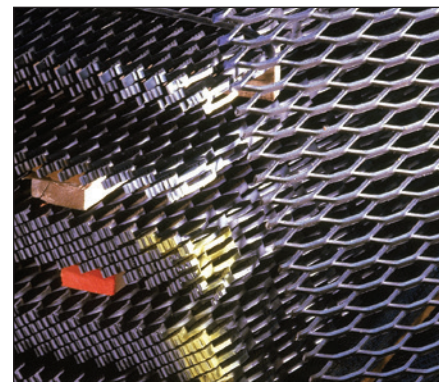
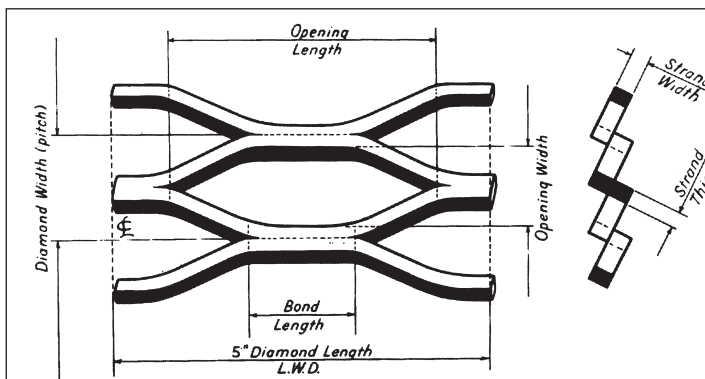
Width of sheet measure Short Way of Diamond (SWD)

Length of sheet measure Long Way of Diamond (LWD)

Example 1/2" No.18 Expanded Metal SWD x 8' LWD.

Expanded Metal is also available in Aluminum & Stainless Steel.

Detailed engineering information available on request.





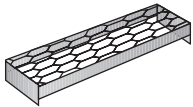
Flattened Expanded Metals

Carbon Steel Regular

Style Designation	Weight per 100 Sq. Ft.	Stock Sizes in Ft.	Size of Opening in Inches	
			Width	Length
1/4" – No. 20	83	4 x 8	.088	.700
1/4" – No. 18	113	4 x 8	.088	.700
1/2" – No. 20	41	3 & 4 x 8	.313	.938
1/2" – No. 18	66	3 & 4 x 8 & 10	.289	1.000
1/2" – No. 16	82	3 & 4 x 8 & 10	.301	1.000
1/2" – No. 13	138	3 & 4 x 8	.259	.970
3/4" – No. 16	51	3 & 4 x 8 & 10	.650	1.750
3/4" – No. 14	64	3 & 4 x 8	.642	1.750
3/4" – No. 13	76	3 & 4 x 8 & 10	.642	1.750
3/4" – No. 9	171	3 & 4 x 8 & 10	.529	1.630
1" – No. 16	46	3 & 4 x 8	.780	2.060
1 1/2" – No. 16	29	3 & 4 x 8	1.140	2.680
1 1/2" – No. 14	53	3 & 4 x 8	1.070	2.680
1 1/2" – No. 13	57	3 & 4 x 8 & 10	1.070	2.880
1 1/2" – No. 9	113	3 & 4 x 8 & 10	1.000	2.620

Expanded Metal Accessories — U-Edging etc. in stock.

Flattened Expanded Metal is also available in Aluminum & Stainless Steel.



Expanded Metal Grating

Carbon Steel Grate-X

Style (Wt. per Sq. Ft.)	Opening Size in Inches	Strand Size in Inches	Overall Depth in inches	Sheet Size	
				SWD in Ft.	LWD in Ft.
3.0 lb.	1.09 x 3.31	.223 x .23	1/2	6'	8', 10'
4.0 lb.	1.02 x 3.25	.223 x .30	5/8	4, 5, 6*	8'
5.0 lb.	.72 x 2.88	.223 x .31	5/8	4	5', 8', 10'
6.25 lb.	.781 x 3.125	.284 x .380	47/64	4	8'
7.0 lb.	.70 x 2.75	.284 x .40	3/4	4	4' - 2" 8' - 4"

* Also Available in 5' wide or 10' long.

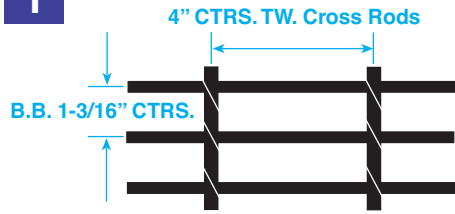
GRATE-X, combining lightweight with unusual strength, is the ideal material for industrial walkways and stair treads. GRATE-X offers many unique advantages. It is higher in unit tensile strength, lighter, has safer tread surfaces and permits maximum passage of light and air.

GRATE-X Stair Tread

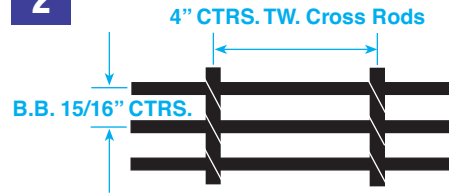
GRATE-X prefabricated Stair Treads are available in two styles, No. 4A (4#) and No. 5A (5#). They are made in lengths from 16" to 48" and in all standard tread widths.

Electroformed Grating

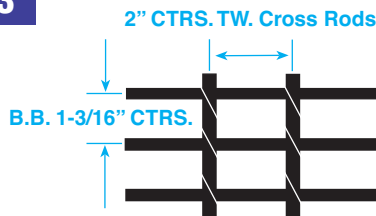
TYPE 1 21 Bar – Cross Bars 4" Centers



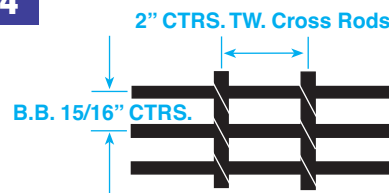
TYPE 2 27 Bar – Cross Bars 4" Centers



TYPE 3 21 Bar – Cross Bars 2" Centers

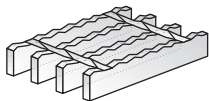


TYPE 4 27 Bar – Cross Bars 2" Centers



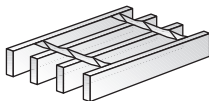
Electroformed Grating Panel Width in Inches

No. of Bars	2	3	4	5	6	7	8	9	10	11	12	13	14
Standard 21 Bar	1 3/8	2 9/16	3 3/4	4 15/16	6 1/8	7 5/16	8 1/2	9 11/16	10 7/8	12 1/16	13 5/16	14 1/2	15 11/16
Close Mesh 27 Bar	1 1/8	2	2 15/16	3 7/8	4 3/4	5 11/16	6 5/8	7 1/2	8 7/16	9 3/8	10 1/4	11 3/16	12 1/8
Special Close Mesh 36 Bar	7/8	1 9/16	2 1/4	2 15/16	3 5/8	4 5/16	5	5 5/8	6 5/16	7	7 11/16	8 3/8	9 1/16
No. of Bars	15	16	17	18	19	20	21	22	23	24	25	26	27
Standard 21 Bar	16 7/8	18 1/16	19 1/4	20 7/16	21 5/8	22 13/16	24	25 3/16	26 3/8	27 9/16	28 3/4	29 15/16	31 1/8
Close Mesh 27 Bar	13	13 15/16	14 13/16	15 3/4	16 11/16	17 9/16	18 1/2	19 7/16	20 5/16	21 1/4	22 3/16	23 1/16	24
Special Close Mesh 36 Bar	9 3/4	10 3/8	11 1/16	11 3/4	12 7/16	13 1/8	13 15/16	14 1/2	15 1/8	15 13/16	16 1/2	17 3/16	17 7/8
No. of Bars	28	29	30	31	32	33	34	35	36	37	38	39	40
Standard 21 Bar	32 5/16	33 1/2	34 11/16	36									
Close Mesh 27 Bar	24 15/16	25 13/16	26 3/4	27 11/16	28 9/16	29 1/2	30 7/16	31 5/16	32 1/4	33 3/16	34 1/16	35	36
Special Close Mesh 36 Bar	18 9/16												



Serrated Bearing Bars

This grating is particularly suited for installations where extreme hazardous conditions, such as oily or slippery surfaces, exist.



Plain Bearing Bars

This grating has proven highly satisfactory for industrial applications. It provides strength, safety and economy.

Electroforged Grating Table of Safe Loads

21 Bar Type Only – Bearing Bars: 1³/₁₆" Centers
 Electroforged 11 Bar (2³/₈" c.c. of Bearing Bar) – Multiply by .52
 Electroforged 14 Bar (1¹³/₁₆" c.c. of Bearing Bar) – Multiply by .66
 Electroforged 27 Bar (1⁵/₁₆" c.c. of Bearing Bar) – Multiply by 1.28
 Electroforged 36 Bar (1¹/₁₆" c.c. of Bearing Bar) – Multiply by 1.71

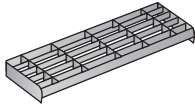
Bearing Bar Size		2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	8'-0"						
8G21 1/4" x 1/8" Wt. per sq. ft. 4.00 lbs.	U	386	247	172	126	96	76	U – Safe uniform load in pounds per square foot. C – Safe concentrated load in pounds per foot of grating width. D – Deflection in inches. Loads and deflections given in this table are theoretical, and are based on a unit stress of 18,000 psi. Note: Grating for spans to the left of the heavy line have a deflection less than 1/4" for uniform loads of 100 lbs. per sq. ft. This is the maximum deflection to afford pedestrian comfort and can be exceeded for other types of load at the discretion of the engineer.											
	D	.095	.151	.216	.295	.374	.486												
	C	386	308	258	220	194	171												
	D	.076	.119	.173	.234	.308	.389												
G21 3/4" x 3/16" Wt. per sq. ft. 5.68 lbs.	U	578	370	258	188	144	115												
	D	.098	.151	.216	.295	.374	.486												
	C	578	462	386	331	289	257												
	D	.076	.119	.173	.234	.308	.389												
8J21 1" x 1/8" Wt. per sq. ft. 5.10 lbs.	U	686	439	304	224	171	135							109	91	76			
	D	.072	.111	.159	.219	.288	.366							.451	.547	.673			
	C	686	549	457	392	343	305							275	250	228			
	D	.057	.090	.129	.176	.231	.293							.360	.434	.518			
J21 1" x 3/16" Wt. per sq. ft. 7.36 lbs.	U	1029	659	459	338	257	203	164	135	114									
	D	.072	.111	.159	.219	.288	.366	.451	.547	.673									
	C	1029	824	686	587	514	458	412	375	343									
	D	.057	.090	.129	.176	.231	.293	.360	.434	.518									
8L21 1 1/4" x 1/8" Wt. per sq. ft. 6.20 lbs.	U	1072	686	476	350	268	212	172	142	119	101	87							
	D	.057	.090	.129	.176	.231	.291	.358	.433	.520	.608	.704							
	C	1072	858	716	613	536	477	430	390	358	330	306							
	D	.046	.072	.104	.141	.183	.233	.288	.349	.416	.487	.565							
L21 1 1/4" x 3/16" Wt. per sq. ft. 9.04 lbs.	U	1608	1028	716	526	403	318	258	213	179	152	131							
	D	.057	.090	.129	.176	.231	.291	.358	.433	.520	.608	.704							
	C	1608	1285	1073	918	803	716	644	585	536	495	459							
	D	.046	.072	.104	.141	.183	.233	.288	.349	.416	.487	.565							
8N21 1 1/2" x 1/8" Wt. per sq. ft. 7.36 lbs.	U	1544	987	686	505	387	306	248	205	172	149	128	96						
	D	.047	.075	.106	.147	.192	.243	.300	.365	.433	.506	.587	.774						
	C	1544	1235	1029	883	722	687	619	563	515	475	441	386						
	D	.038	.059	.087	.117	.154	.195	.241	.289	.347	.406	.470	.614						
N21 1 1/2" x 3/16" Wt. per sq. ft. 11.08 lbs.	U	2321	1485	1031	758	581	458	371	307	260	222	191	145						
	D	.047	.075	.106	.147	.192	.243	.300	.365	.433	.506	.587	.774						
	C	2321	1856	1547	1325	1159	1031	928	844	773	714	663	581						
	D	.038	.059	.087	.117	.154	.195	.241	.289	.347	.406	.470	.614						
O21 1 3/4" x 3/16" Wt. per sq. ft. 12.76 lbs.	U	3151	2016	1401	1029	788	622	505	416	351	299	259	197						
	D	.042	.064	.092	.126	.165	.208	.258	.310	.371	.435	.506	.664						
	C	3151	2521	2100	1800	1575	1400	1260	1145	1049	969	899	786						
	D	.033	.052	.074	.101	.132	.167	.206	.249	.297	.347	.403	.527						
P21 2" x 3/16" Wt. per sq. ft. 14.44 lbs.	U	4116	2633	1829	1344	1029	813	659	546	460	393	339	258						
	D	.036	.056	.081	.111	.144	.183	.226	.273	.325	.384	.447	.580						
	C	4116	3292	2745	2351	2058	1828	1646	1496	1370	1266	1175	1027						
	D	.029	.045	.064	.088	.115	.145	.180	.217	.259	.303	.353	.460						
Q21 2 1/4" x 3/16" Wt. per sq. ft. 16.02 lbs.	U	5209	3332	2314	1670	1302	1028	835	689	583	496	428	327						
	D	.032	.050	.072	.098	.127	.162	.199	.241	.287	.338	.393	.512						
	C	5209	4167	3473	2916	2604	2314	2082	1892	1733	1601	1487	1301						
	D	.026	.039	.057	.079	.102	.129	.160	.194	.230	.270	.314	.410						
R21 2 1/2" x 3/16" Wt. per sq. ft. 17.69 lbs.	U	6432	4115	2858	2099	1609	1271	1029	850	720	613	529	405						
	D	.028	.044	.064	.088	.116	.145	.180	.217	.260	.305	.354	.465						
	C	6432	5147	4286	3673	3214	2858	2571	2338	2141	1977	1836	1607						
	D	.023	.036	.051	.071	.092	.116	.144	.173	.207	.242	.282	.369						

Electroformed Grating Types & Weights

Main Bar Size	Standard 21 Bar Grating				Close Mesh 27 Bar Grating				Special Close Mesh 36 Bar Grating	
	Type 1	Wt. Lbs. Per Sq. Ft.	Type 3	Wt. Lbs. Per Sq. Ft.	Type 2	Wt. Lbs. Per Sq. Ft.	Type 4	Wt. Lbs. Per Sq. Ft.	Type 5	Wt. Lbs. Per Sq. Ft.
3/4 x 1/8	8G21	4.00	8GS21	4.64	8G27	4.96	8GS27	5.60	8G36	6.40
3/4 x 3/16	G21	5.68	GS21	6.32	G27	7.12	GS27	7.76	G36	9.28
1 x 1/8	8J21	5.10	8JS21	5.74	8J27	6.38	8JS27	7.02	8J36	8.29
1 x 3/16	J21	7.36	JS21	8.00	J27	9.28	JS27	9.92	J36	12.16
1 1/4 x 1/8	8L21	6.20	8LS21	6.84	8L27	7.79	8LS27	8.43	8L36	10.18
1 1/4 x 3/16	L21	9.04	LS21	9.68	L27	11.44	LS27	12.08	L36	15.04
1 1/2 x 1/8	8N21	7.36	8NS21	8.00	8N27	9.28	8NS27	9.92	8N36	12.16
1 1/2 x 3/16	N21	11.08	NS21	12.07	N27	13.96	NS27	14.95	N36	18.28
1 3/4 x 3/16	O21	12.76	OS21	13.75	O27	16.12	OS27	17.11	O36	21.16
2 x 3/16	P21	14.44	PS21	15.43	P27	18.28	PS27	19.27	P36	24.04
2 1/4 x 3/16	Q21	16.01	QS21	17.01	Q27	20.30	QS27	21.30	Q36	26.74
2 1/2 x 3/16	R21	17.69	RS21	18.69	R27	22.46	RS27	23.46	R36	29.62

Chapin & Bangs has in stock **Type 1 – 3' x 20' panels**

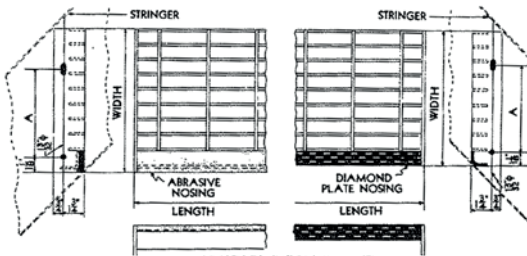
1/8 x 1 ■ 3/16 x 1 ■ 3/16 x 1 1/4 ■ 3/16 x 1 1/2



Electroformed Steel Stair Treads

Electroformed Stair Treads are designed for tremendous strength against impact. They are usually manufactured using a diamond plate nosing. This nosing is made to withstand abuse, particularly that given to treads when buildings are under construction. It defines the edge of each tread because of the very definite contrast between the diamond plate nosing and the grating. For particularly slippery conditions, serrated treads can be furnished.

Electroformed treads can be manufactured in low alloy steels and certain types of stainless steel.



Standard Sizes and Specifications of Stair Treads – 21 Bar Type

Abrasive	Diamond Plate	Type "J" – 13/16" Bars		
		Min. Length	Suggested Max. Length	A
6 3/16"	6 1/8"	16"	3'0"	2 1/2"
7 3/8"	7 3/8"	16"	3'0"	4 1/2"
8 9/16"	8 1/2"	16"	3'6"	4 1/2"
9 3/4"	9 11/16"	16"	3'6"	7"
10 15/16"	10 7/8"	16"	3'6"	7"
7 3/8"	7 5/16"	20"	4'0"	4 1/2"
8 9/16"	8 1/2"	20"	4'0"	4 1/2"
9 3/4"	9 11/16"	20"	4'0"	7"
10 15/16"	10 7/8"	20"	4'6"	7"
12 1/8"	12 1/16"	20"	4'6"	7"

Chapin & Bangs offers job estimating services and custom fabrication of grating to fit your special requirements.

Also available – Aluminum Grating and Stair Treads in standard and close rectangular mesh types.

Serrated Grating Grip Strut®

Code Number	Width in Inches	Depth in Inches	Gauge	Number of Diamonds	Lengths in Ft.
21514	4 ³ / ₄	1 ¹ / ₂	#14	2	10 & 12
31514	7	1 ¹ / ₂	#14	3	10 & 12
41514	9 ¹ / ₂	1 ¹ / ₂	#14	4	10 & 12
41512	9 ¹ / ₂	1 ¹ / ₂	#12	4	10 & 12
51514	11 ³ / ₄	1 ¹ / ₂	#14	5	10 & 12
51512	11 ³ / ₄	1 ¹ / ₂	#12	5	10 & 12
52012	11 ³ / ₄	2	#12	5	10 & 12
81514	18 ³ / ₄	1 ¹ / ₂	#14	8	10 & 12
81512	18 ³ / ₄	1 ¹ / ₂	#12	8	10 & 12
82012	18 ³ / ₄	2	#12	8	10' & 12
102014	24	2	#14	10	10 & 12
102012	24	2	#12	10	10 & 12
103012	24	3	#12	10	10 & 12
104514 U	24	4 ¹ / ₂	#14	10	10 & 12
104512 U	24	4 ¹ / ₂	#12	10	10 & 12

Additional Sizes Available – Inquire