MARCO

SPECIALTY STEEL

General Lines Catalog

QUALITY | SPEED | RELIABILITY

Wire Cloth - Perforated Metal - Bar Grating
Safety Grating - Fiberglass Grating - Expanded Metal








TOC

45,000 sq. ft. facility on 9+ acres

MARCO
SPECIALTY STEEL

Total solutions provider

For over 23 years, Marco Specialty Steel has been specializing in Wire Cloth, Perforated Metal, Expanded Metal, Bar Grating, Fiberglass Grating, Hex Metal and Safety Grating (Grip Strut®, Perfo Grip®, Tread Grip® and Grate-Lock®).

Our centrally located 45,000 sf. warehouse maintains a wide range of very diverse and extensive inventory, designed to meet the challenging daily needs of our customer base. We have a custom manufacturing and fabrication shop that can provide complete projects from design to ready-to-install.

We believe that extra effort, care and attention to detail will favorably set us apart from other potential suppliers. Call today and our friendly and knowledgeable sales personnel will help you with items from our ever-expanding inventory, or with your specific application requirements.

When quality counts...
Make it Marco!

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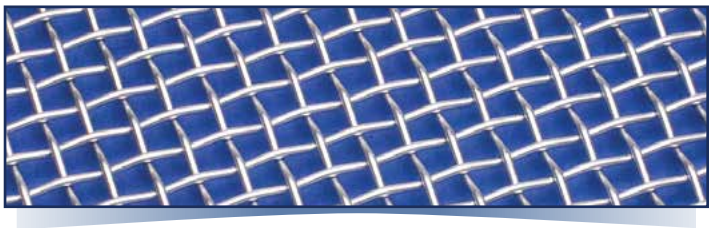
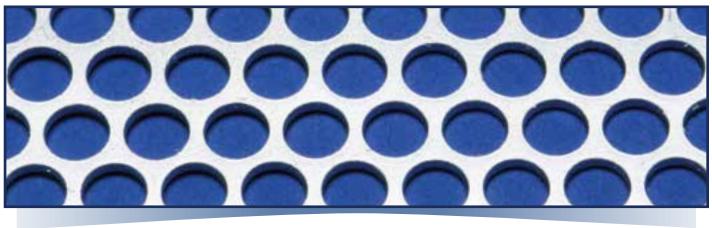
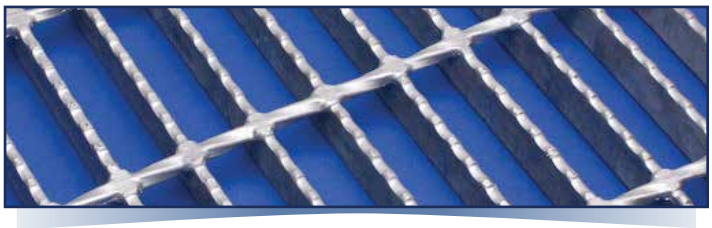
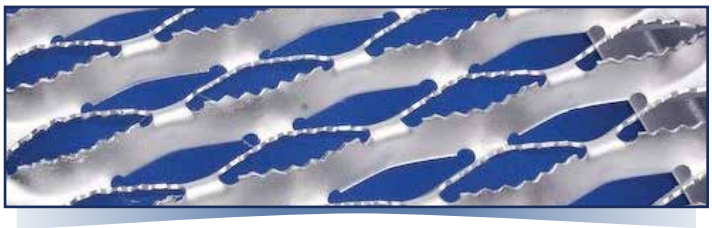
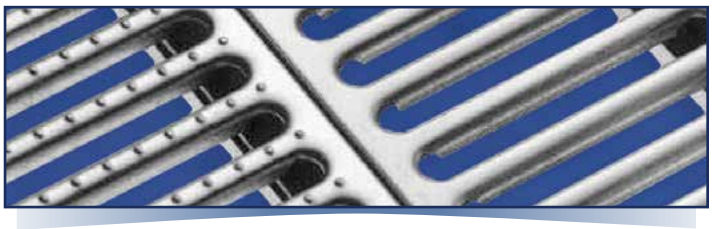
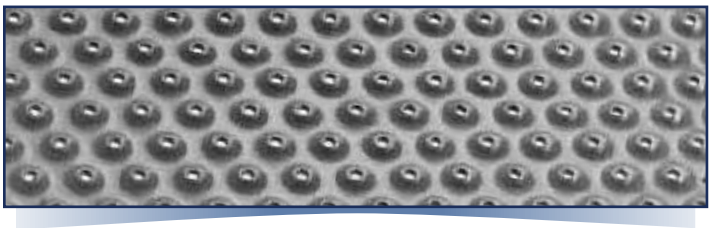


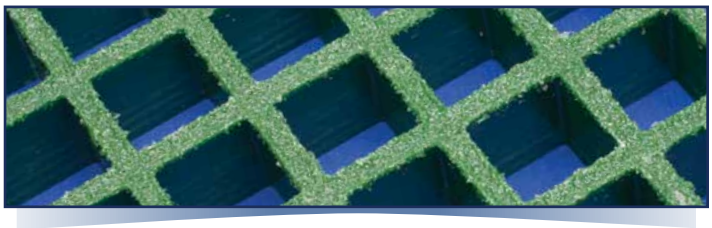


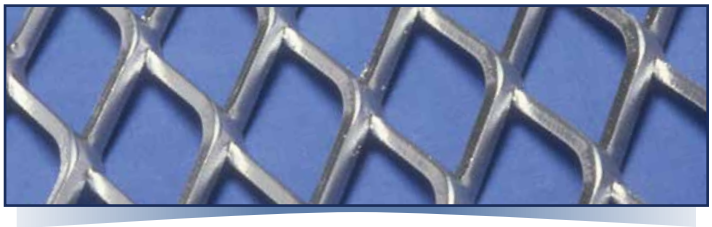












WIRE CLOTH

Common Wire Cloth Materials

Wire cloth or wire mesh can be manufactured from any metal or alloy that can be drawn into wire that is suitable for weaving. The most commonly utilized materials in wire cloth weaving are listed below:

Carbon Steel: Low, High, Oil Tempered

Stainless Steel: Non-Magnetic Types 304, 304L, 309, 310, 316, 316L, 317, 321, 330, 347; Magnetic Types 410, 430

Copper and Copper Alloys: Copper, Brass, Bronze, Phosphor Bronze

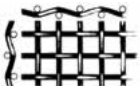
Aluminum and Aluminum Alloys: 1350-H19

Nickel and Nickel Alloys: Nickel, Monel® 400, Hastelloy B, Hastelloy C, Inconel® 600, Incoloy® 800, Nichrome I, Nichrome V

Standard Sizes of Round Wire Drawn To Industrial Wire Cloth Gauge Diameters (Dimensions are approximate)				
Diameter (Inches)	Diameter (Decimal)	Gauge/ Wire No.	Actual Wire Sizes	Feet per Pound
5/16	.307	0		4.00
9/32	.283	1		4.70
17/64	.263	2		5.45
1/4	.244	3		6.33
7/32	.225	4		7.45
13/64	.207	5		8.81
3/16	.192	6		10.23
11/64	.177	7		12.05
5/32	.162	8		14.36
n/a	.148	9		17.24
9/64	.135	10		20.70
1/8	.120	11		26.17
7/64	.105	12		34.24
3/32	.092	13		44.64
5/64	.080	14		59.17
n/a	.072	15		72.99
1/16	.063	16		95.23
n/a	.054	17		129.53
3/64	.047	18		170.94
n/a	.041	19		224.71
n/a	.035	20		308.66
1/32	.032	21		369.00

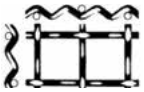
Wire Cloth Weave Styles

Plain Crimp / Double



Standard type of weave
- Square openings
- Wire sizes the same in both directions
- Each warp wire passes alternately over and under
- Fill wires at right angles, both directions

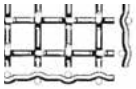
Intercrimped / Intermediate



- Similar to Plain Crimp
- Only odd intersections are used

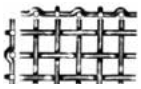
(i.e.: 3rd, 5th, 7th crimp or pocket)

Lockcrimp



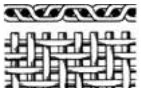
- More modern and versatile crimp style
- Formed by a straight section of wire weaved with distinct crimp or pockets at wire intersections
- Yields a truly tight, dimensionally stable mesh
- Aesthetically pleasing

Flat Top / Smooth Top



- Top surface of wires all lie in same plane, results in irregular crimped surface on underside
- Flat surface improves flow of materials over screen panels by reducing friction

Twilled Weave



- Each warp wire and fill wire pass successively over two and under the next adjacent pair of wires
- More pliable weave
- Commonly used for filtration of fine particles

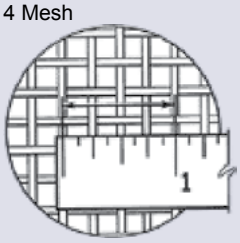
Measuring Wire Cloth

There is a distinct difference between “mesh” and “opening”:

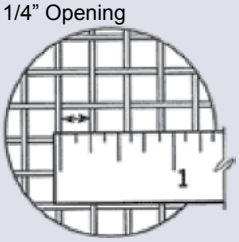
Mesh: designates the number of openings per lineal inch. To determine the mesh, measure from the center of a wire to a point 1” distant, and count the number of openings. The diagram shows four openings in 1” and illustrates a 4 mesh wire. Mesh may also be expressed in inches, i.e.: wire 1/4” from center to center is a 1/4” mesh.

Opening: the measurement of the clear open space between the parallel wires. The diagram illustrates 1/4” clear opening.

4 Mesh



1/4” Opening



Hardware Cloth (hot dipped galvanized after) Available in PVC coated & stainless		
Mesh	Wire Dia.	Width
1/2” Mesh	19 Ga (.041”)	24”,36”,48”
1/4” Mesh	23 Ga (.025”)	24”,36”,48”
1/8” Mesh	27 Ga (.017”)	24",36", 48"
Poultry Netting (hot dipped galvanized after) Available in PVC coated & stainless		
Mesh	Wire Dia.	Width
1/2” Hex	22 Ga (.041”)	24”,36”, 48”
1” Hex	20 Ga (.025")	24”,36”, 48”
3 Mesh	.032	24”,36”, 48”
Galvanized Welded Utility Mesh (galvanized before welded)		
Mesh	Wire Ga.	Width
4” x 2”	12.5, 14	24”,36”,48”
2” x 1”	14	36”, 48”,60”
2” x 2”	12,12.5,14,16	48”,60”
1” x 1/2”	16	24”,36”,48”
1” x 1”	14,16	24”,36”,48”

Insect Screen

Mesh	Wire Diameter	Width	lbs. per sq. ft.	Metal Type
16x16	.011	36”, 48”	.14	Copper
18x16	.011	36”, 48”	.05	Aluminum
18x14	.011	36”, 48”	.14	Bronze
18x14	.009	36”, 48”	.09	304 SS
18x14	.009	36”, 48”	.09	Epoxy Coated

Diam. of Wire	Width of Opening	Percent Of Open Area %	Weight Per CSF
1" Mesh			
.25"	.75"	56.30%	412.4
.225"	.775"	60.10%	332.1
.192"	.808"	65.30%	240.3
.177"	.823"	67.70%	203.7
.148"	.852"	72.60%	141.7
.135"	.865"	74.80%	117.7
.120"	.88"	77.40%	92.8
.105"	.895"	80.10%	71.0
.092"	.908"	82.40%	54.4
.080"	.920"	84.60%	41.1
.072"	.928"	86.10%	33.3
.063"	.937"	87.80%	25.5
3/4" Mesh			
.25"	.5"	44.40%	562.3
.225"	.525"	49.00%	451.0
.192"	.558"	55.30%	324.8
.177"	.573"	58.30%	274.7
.135"	.615"	67.20%	158.1
.120"	.63"	70.50%	124.4
.105"	.645"	73.90%	95.0
.092"	.658"	76.90%	72.8
.080"	.67"	79.80%	54.9
.072"	.678"	81.70%	44.5
.063"	.687"	83.90%	34.0
5/8" Mesh			
.25"	.375"	36.00%	689.4
.225"	.4"	41.00%	551
.192"	.433"	48.00%	395
.177"	.448"	51.40%	333.5
.135"	.49"	61.50%	191
.12"	.505"	65.30%	150.2
.105"	.52"	69.20%	114.5
.092"	.533"	72.70%	87.9
.08"	.545"	76.00%	66.1
.072"	.553"	78.30%	53.5
.063"	.562"	80.90%	40.9
2 Mesh			
.135"	.365"	53.30%	241.7
.12"	.38"	57.80%	189.6
.105"	.395"	62.40%	144.2
.092"	.408"	66.60%	110.2
.08"	.42"	70.60%	83.0
.063"	.437"	76.40%	51.2
.047"	.453"	82.10%	28.4
2- 1/2 Mesh			
.135"	.265"	43.90%	307.8
.12"	.28"	49.00%	240.6
.105"	.295"	54.40%	182.4
.092"	.308"	59.30%	139.0
.08"	.32"	64.00%	104.4
.072"	.328"	67.20%	84.3
.063"	.337"	71.00%	64.3
.054"	.346"	74.80%	47.1
3 Mesh			
.135"	.198"	35.30%	377.6
.12"	.213"	40.80%	293.9
.105"	.228"	46.80%	222.0
.092"	.241"	52.30%	168.7
.08"	.253"	57.60%	126.4
.072"	.261"	61.30%	101.9
.063"	.27"	65.60%	77.6
.054"	.279"	70.10%	56.7
.047"	.286"	73.60%	42.8
4 Mesh			
.135"	.115"	21.20%	503.8
.12"	.13"	27.00%	388.6
.105"	.145"	33.60%	306.2
.092"	.158"	39.90%	231
.08"	.17"	46.20%	172.1
.072"	.178"	50.70%	138.2
.063"	.187"	56.00%	104.8
.054"	.196"	61.50%	76.4
.047"	.203"	65.90%	57.6
.041"	.209"	69.90%	43.6
.035"	.215"	74.00%	31.7
.032"	.218"	76.00%	26.4
5 Mesh			
.105"	.095"	22.60%	378.7
.092"	.108"	29.20%	283.4
.08"	.12"	36.00%	220.6
.072"	.128"	41.00%	176.4
.063"	.137"	46.90%	133.2
.054"	.146"	53.30%	96.7
.047"	.153"	58.50%	72.6
.041"	.159"	63.20%	54.9
.035"	.165"	68.10%	39.8
.032"	.168"	70.60%	33.2
6 Mesh			
.08"	.087"	27.20%	259.1
.072"	.095"	32.50%	216.9
.063"	.104"	38.90%	163
.054"	.113"	46.00%	117.7
.047"	.12"	51.80%	88.2
.041"	.126"	57.20%	66.5
.035"	.132"	62.70%	48.1
.032"	.135"	65.60%	40
.028"	.139"	69.60%	30.5
.025"	.142"	72.60%	24.3
.023"	.144"	74.70%	20.5
.02"	.147"	77.80%	15.5
8 Mesh			
.063"	.062"	24.60%	216.3
.047"	.078"	38.90%	120.9
.041"	.084"	45.20%	90.6
.035"	.09"	51.80%	65.1
.032"	.093"	55.40%	54.1
.028"	.097"	60.20%	41.1
.025"	.100"	64.00%	32.6
.023"	.102"	66.60%	27.5
.020"	.105"	70.60%	20.7
.017"	.108"	74.60%	14.9
10 Mesh			
.054"	.046"	21.20%	201.5
.047"	.053"	28.10%	148.4
.041"	.059"	34.80%	116.3
.035"	.065"	42.30%	83.1
.032"	.068"	46.20%	68.8
.028"	.072"	51.80%	52.1
.025"	.075"	56.30%	41.2
.023"	.077"	59.30%	34.7
.018"	.082"	67.20%	21.1
.016"	.084"	70.60%	16.6
.015"	.085"	72.30%	14.6
12 Mesh			
.047"	.036"	18.70%	185.1
.041"	.042"	25.40%	136.7
.035"	.048"	33.20%	102.1
.032"	.051"	37.50%	84.3
.028"	.055"	43.60%	63.5
.025"	.058"	48.40%	50.1
.023"	.060"	51.80%	42.2
.018"	.065"	60.80%	25.5
.017"	.066"	62.70%	22.7
.015"	.068"	66.60%	17.6
14 Mesh			
.032"	.039"	29.80%	100.5
.028"	.043"	36.20%	75.5
.025"	.046"	41.50%	59.3
.023"	.048"	45.20%	49.8
.02"	.051"	51.00%	37.2
.018"	.053"	55.10%	29.9
.014"	.057"	63.70%	17.9
16 Mesh			
.035"	.028"	9.40%	136.6
.032"	.031"	3.80%	111.9
.028"	.035"	30.50%	83.6
.025"	.038"	36.00%	68.9
.023"	.04"	39.90%	57.7
.02"	.043"	46.20%	43
.018"	.045"	50.70%	34.5
.016"	.047"	55.40%	27.1
.011"	.052"	67.90%	12.6
.01"	.053"	70.60%	10.4
.0095"	.053"	71.90%	9.4
18 Mesh			
.032"	.024"	18.00%	129.4
.028"	.028"	24.70%	96.1
.025"	.031"	30.30%	75
.023"	.033"	34.40%	66
.02"	.036"	41.10%	49
.018"	.038"	45.80%	39.2
.017"	.039"	48.30%	34.8
.016"	.04"	50.80%	30.7
.014"	.042"	56.10%	23.3
.0135"	.042"	57.40%	21.6
.013"	.043"	58.80%	20
.011"	.045"	64.40%	14.2
.009"	.047"	70.40%	9.5
20 Mesh			
.025"	.025"	25.00%	85
.023"	.027"	29.20%	70.8
.02"	.03"	36.00%	55.2
.018"	.032"	41.00%	44.1
.016"	.034"	46.20%	34.4
.015"	.035"	49.00%	30.10
.014"	.036"	51.80%	26.1
.013"	.037"	54.80%	22.4
.01"	.04"	64.00%	13.1
.009"	.041"	67.20%	10.5
24 Mesh			
.023"	.019"	20.10%	88.2
.017"	.025"	35.10%	48
.016"	.026"	38.00%	42.1
.015"	.027"	41.10%	36.7
.014"	.028"	44.20%	31.8
.0135"	.028"	45.80%	29.4
.013"	.029"	47.40%	27.2
.012"	.03"	50.80%	23
.011"	.031"	54.30%	19.2
.01"	.032"	57.90%	15.8
.0095"	.032"	59.70%	14.2
.009"	.033"	61.60%	12.7
.0075"	.034"	67.40%	8.8
30 Mesh			
016"	.017"	26.90%	51.8
.015"	.018"	30.10%	47.4
.014"	.019"	33.50%	40.8
.013"	.02"	37.10%	34.8
.012"	.021"	40.80%	29.4
.011"	.022"	44.80%	24.5
.01"	.023"	48.90%	20
.0095"	.024"	51.00%	18
.009"	.024"	53.10%	16.1
.0065"	.0268"	64.80%	8.4
40 Mesh			
.0135"	.012"	21.20%	53
.013"	.012"	23.00%	48.8
.01"	.015"	36.00%	27.6
.0095"	.016"	38.40%	24.7
.009"	.016"	41.00%	22
.0085"	.017"	43.60%	19.5
.0065"	.0185"	54.80%	11.3
45 Mesh			
.0075"	.015"	43.8%	7.0
50 Mesh			
.011"	.009"	20.30%	42
.009"	.011"	30.30%	28.4
.0085"	.012"	33.10%	25.1
.008"	.012"	36.00%	22.1
.0075"	.013"	39.10%	19.2
.0055"	.0145"	52.60%	10.1
60 Mesh			
.011"	.006"	11.70%	52.9
.009"	.008"	21.30%	33.5
.0075"	.009"	30.50%	23.7
.007"	.01"	33.90%	20.4
.0065"	.01"	37.50%	17.4
.006"	.011"	41.20%	14.7
.0045"	.0122"	53.30%	8.1
70 Mesh			
.009"	.005"	13.80%	40.7
.0085"	.006"	16.50%	35.8
.008"	.006"	19.40%	31.3
.0075"	.007"	22.70%	27.1
.007"	.007"	26.10%	23.3
.0065"	.008"	29.80%	20.8
.006"	.008"	33.80%	17.5
.0037"	.0106"	54.90%	6
80 Mesh			
.0075"	.005"	16.00%	31.9
.007"	.006"	19.40%	27.4
.0065"	.006"	23.00%	23.2
.006"	.007"	27.00%	20.4
.0055"	.007"	31.40%	16.9
.005"	.008"	36.00%	13.8
.0037"	.0088"	49.60%	6.9
100 Mesh			
.005"	.005"	25.00%	17
.0045"	.006"	30.30%	14.2
.004"	.006"	36.00%	11
.0035"	.0074"	2.30%	8.3
.003"	.007"	49.00%	6
.0022"	.0078"	60.80%	-
120 Mesh			
.0035"	.005"	33.20%	10.2
.004"	.003"	26.60%	4.8
.0026"	.0056"	46.00%	-
145 Mesh			
.0022"	.0048"	46.40%	-
150 Mesh			
.0026"	.0041"	37.80%	7.2
165 Mesh			
.0019"	.0041"	47.10%	-
180" Mesh			
.0018"	.0038"	46.00%	-
200" Mesh			
.0023"	.0027"	29.20%	7.3
.0021"	.0029"	33.60%	6.3
.0016"	.0035"	46.20%	-
230 Mesh			
.0014	.0028"	46.00%	-
250 Mesh			
.0016"	.0024"	36.00%	4.3
270 Mesh			
.0014"	.0022"	38.00%	-
325 Mesh			
.0014"	.0017"	30.50%	4.3
.0011"	.002"	42.00%	-

Refinery Specialist

Marco Specialty Steel routinely works with Refineries, Petrochemical Plants and Vessel Fabricators to supply Catalyst Support Grids in a variety of Material Grades and Meshes. We have the most extensive inventory of specialty items specifically for these applications in the World.

We also offer "Aluminizing" or "Alonizing" for longer screen life. We offer very competitive prices, short lead times, and a process that's approved by Chevron, UOP, Shell, Unocal, Arco, and Exxon. For more information visit our website, or contact a Marco Sales Rep.

Wire Cloth - Square Space Cloth

MARCO SPECIALTY STEEL

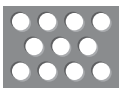
Clear Opening or Space Inch	Diameter Of Rod Or Wire Inch	Steel Weight Pounds Per sq. Foot	Open Area
4	1.000	13.06	64.0%
4	0.750	7.68	70.9%
4	0.688	6.53	72.8%
4	0.625	5.46	74.8%
4	0.563	4.47	76.9%
4	0.500	3.58	79.0%
4	0.438	2.77	81.3%
4	0.375	2.07	83.6%
4	0.313	1.45	86.0%
4	0.283	1.20	87.2%
4	0.263	1.04	88.0%
4	0.250	0.94	88.6%
3-1/2	1.000	14.57	60.5%
3-1/2	0.750	8.60	67.8%
3-1/2	0.688	7.32	69.9%
3-1/2	0.625	6.13	72.0%
3-1/2	0.563	5.03	74.3%
3-1/2	0.500	4.03	76.6%
3-1/2	0.438	3.13	79.0%
3-1/2	0.375	2.33	81.6%
3-1/2	0.313	1.65	84.3%
3-1/2	0.283	1.36	85.6%
3-1/2	0.263	1.18	86.5%
3-1/2	0.250	1.07	87.1%
3-1/2	0.225	.87	88.3%
3-1/2	0.207	.74	89.1%
3	1.000	16.50	56.3%
3	0.750	9.79	64.0%
3	0.688	8.35	66.2%
3	0.625	7.00	68.5%
3	0.563	5.76	70.9%
3	0.500	4.62	73.5%
3	0.438	3.59	76.2%
3	0.375	2.68	79.0%
3	0.313	1.90	82.0%
3	0.283	1.57	83.5%
3	0.263	1.36	84.5%
3	0.250	1.23	85.2%
3	0.225	1.01	86.5%
3	0.207	0.86	87.5%
3	0.192	0.74	88.3%
3	0.177	0.63	89.2%
3	0.162	0.53	90.0%
2-1/2	1.000	19.02	51.0%
2-1/2	0.750	11.37	59.2%
2-1/2	0.688	9.71	61.5%
2-1/2	0.625	8.16	64.0%
2-1/2	0.563	6.72	66.6%
2-1/2	0.500	5.41	69.4%
2-1/2	0.438	4.22	72.4%
2-1/2	0.375	3.16	75.6%
2-1/2	0.313	2.24	79.0%
2-1/2	0.283	1.85	80.7%
2-1/2	0.263	1.61	81.9%
2-1/2	0.250	1.46	82.6%
2-1/2	0.225	1.19	84.2%
2-1/2	0.207	1.02	85.3%
2-1/2	0.192	0.88	86.2%
2-1/2	0.177	0.75	87.2%
2-1/2	0.162	0.63	88.2%
2-1/2	0.148	0.53	89.1%
2-1/4	1.000	20.61	47.9%
2-1/4	0.750	12.37	56.2%
2-1/4	0.688	10.58	58.7%
2-1/4	0.625	8.90	61.2%
2-1/4	0.563	7.34	64.0%
2-1/4	0.500	5.91	66.9%
2-1/4	0.438	4.62	70.1%
2-1/4	0.375	3.46	73.4%
2-1/4	0.375	2.46	77.1%
2-1/4	0.283	2.04	78.9%
2-1/4	0.263	1.77	80.2%
2-1/4	0.250	1.61	81.0%
2-1/4	0.225	1.31	82.6%
2-1/4	0.207	1.12	83.9%
2-1/4	0.192	0.97	84.9%
2-1/4	0.177	0.83	85.9%
2-1/4	0.162	0.70	87.0%
2-1/4	0.148	0.59	88.0%

Clear Opening or Space Inch	Diameter Of Rod Or Wire Inch	Steel Weight Pounds Per sq. Foot	Open Area
2-1/4	0.135	0.49	89.0%
2	1.000	22.49	44.4%
2	0.750	13.57	52.9%
2	0.688	11.62	55.4%
2	0.625	9.79	58.0%
2	0.563	8.09	60.9%
2	0.500	6.53	64.0%
2	0.438	5.11	67.3%
2	0.375	3.84	70.9%
2	0.313	2.73	74.8%
2	0.283	2.26	76.7%
2	0.263	1.97	78.1%
2	0.250	1.79	79.0%
2	0.225	1.46	80.8%
2	0.207	1.25	82.1%
2	0.192	1.08	83.2%
2	0.177	0.92	84.4%
2	0.162	0.78	85.6%
2	0.148	0.65	86.7%
2	0.135	0.55	87.8%
2	0.120	0.44	89.0%
1-3/4	1.000	24.76	40.5%
1-3/4	0.750	15.03	49.0%
1-3/4	0.688	12.90	51.6%
1-3/4	0.625	10.88	54.3%
1-3/4	0.563	9.01	57.3%
1-3/4	0.500	7.29	60.5%
1-3/4	0.438	5.71	64.0%
1-3/4	0.375	4.30	67.8%
1-3/4	0.313	3.07	71.9%
1-3/4	0.283	2.55	74.1%
1-3/4	0.263	2.22	75.6%
1-3/4	0.250	2.02	76.6%
1-3/4	0.225	1.65	78.5%
1-3/4	0.207	1.41	80.0%
1-3/4	0.192	1.22	81.2%
1-3/4	0.177	1.04	82.5%
1-3/4	0.162	0.88	83.8%
1-3/4	0.148	0.74	85.0%
1-3/4	0.135	0.62	86.2%
1-3/4	0.120	0.49	87.6%
1-1/2	1.000	27.57	36.0%
1-1/2	0.750	16.86	44.4%
1-1/2	0.688	14.50	47.0%
1-1/2	0.625	12.27	49.8%
1-1/2	0.563	10.18	52.8%
1-1/2	0.500	8.25	56.3%
1-1/2	0.438	6.48	59.9%
1-1/2	0.375	4.90	64.0%
1-1/2	0.313	3.50	68.5%
1-1/2	0.283	2.91	70.8%
1-1/2	0.263	2.54	72.4%
1-1/2	0.250	2.31	73.4%
1-1/2	0.225	1.89	75.6%
1-1/2	0.207	1.62	77.2%
1-1/2	0.192	1.40	78.6%
1-1/2	0.177	1.20	80.0%
1-1/2	0.162	1.02	81.5%
1-1/2	0.148	0.85	82.8%
1-1/2	0.135	0.72	84.2%
1-1/2	0.120	0.57	85.7%
1-1/4	0.750	19.22	39.1%
1-1/4	0.688	16.57	41.6%
1-1/4	0.625	14.06	44.4%
1-1/4	0.563	11.70	47.5%
1-1/4	0.500	9.51	51.0%
1-1/4	0.438	7.50	54.8%
1-1/4	0.375	5.69	59.2%
1-1/4	0.313	4.08	64.0%
1-1/4	0.283	3.40	66.5%
1-1/4	0.263	2.97	68.3%
1-1/4	0.250	2.70	69.4%
1-1/4	0.225	2.22	71.8%
1-1/4	0.207	1.90	73.6%
1-1/4	0.192	1.65	75.1%
1-1/4	0.177	1.42	76.7%
1-1/4	0.162	1.20	78.4%
1-1/4	0.148	1.01	79.9%
1-1/4	0.135	0.85	81.5%

Clear Opening or Space Inch	Diameter Of Rod Or Wire Inch	Steel Weight Pounds Per sq. Foot	Open Area
1-1/4	0.120	0.68	83.2%
1-1/4	0.105	0.52	85.1%
1	0.750	22.38	32.6%
1	0.688	19.37	35.1%
1	0.625	16.49	37.9%
1	0.563	13.78	41.0%
1	0.500	11.25	44.4%
1	0.438	8.91	48.4%
1	0.375	6.79	52.9%
1	0.313	4.90	58.0%
1	0.283	4.09	60.8%
1	0.263	3.58	62.7%
1	0.250	3.26	64.0%
1	0.225	2.69	66.6%
1	0.207	2.31	68.6%
1	0.192	2.01	70.4%
1	0.177	1.72	72.2%
1	0.162	1.46	74.0%
1	0.148	1.23	75.9%
1	0.135	1.04	77.6%
1	0.120	0.83	79.7%
1	0.105	0.64	81.9%
1	0.092	0.50	83.9%
1	0.080	0.38	85.7%
7/8	0.625	18.06	34.0%
7/8	0.563	15.13	37.0%
7/8	0.500	12.38	40.5%
7/8	0.438	9.84	44.4%
7/8	0.375	7.52	49.0%
7/8	0.313	5.44	54.3%
7/8	0.283	4.55	57.1%
7/8	0.263	3.99	59.1%
7/8	0.250	3.64	60.5%
7/8	0.225	3.01	63.3%
7/8	0.207	2.58	65.3%
7/8	0.192	2.25	67.2%
7/8	0.177	1.93	69.2%
7/8	0.162	1.64	71.2%
7/8	0.148	1.38	73.5%
7/8	0.135	1.17	75.1%
7/8	0.120	0.93	77.3%
7/8	0.105	0.72	79.7%
7/8	0.092	0.56	81.9%
7/8	0.080	0.43	83.9%
3/4	0.625	19.98	29.7%
3/4	0.563	16.79	32.6%
3/4	0.500	13.79	36.0%
3/4	0.438	11.00	39.9%
3/4	0.375	8.44	44.4%
3/4	0.313	6.13	49.8%
3/4	0.283	5.15	52.7%
3/4	0.263	4.52	54.8%
3/4	0.250	4.12	56.3%
3/4	0.225	3.41	59.2%
3/4	0.207	2.93	61.4%
3/4	0.192	2.56	63.4%
3/4	0.177	2.20	65.5%
3/4	0.162	1.87	67.6%
3/4	0.148	1.58	69.8%
3/4	0.135	1.33	71.8%
3/4	0.120	1.07	74.3%
3/4	0.105	0.83	76.9%
3/4	0.092	0.65	79.3%
3/4	0.080	0.50	81.7%
5/8	0.563	18.87	27.7%
5/8	0.500	15.57	30.9%
5/8	0.438	12.47	34.6%
5/8	0.375	9.61	39.1%
5/8	0.313	7.03	44.4%
5/8	0.283	5.91	47.4%
5/8	0.263	5.20	49.5%
5/8	0.250	4.76	51.0%
5/8	0.225	3.94	54.0%
5/8	0.207	3.40	56.4%
5/8	0.192	2.97	58.5%
5/8	0.177	2.58	60.7%
5/8	0.162	2.18	63.1%
5/8	0.148	1.85	65.4%
5/8	0.135	1.56	67.6%

Clear Opening or Space Inch	Diameter Of Rod Or Wire Inch	Steel Weight Pounds Per sq. Foot	Open Area
5/8	0.120	1.25	70.3%
5/8	0.105	0.98	73.4%
5/8	0.092	0.76	76.0%
5/8	0.080	0.58	78.6%
5/8	0.072	0.48	80.4%
5/8	0.063	0.37	82.5%
1/2	0.500	16.96	25.0%
1/2	0.438	14.42	28.4%
1/2	0.375	11.19	32.7%
1/2	0.313	8.24	37.9%
1/2	0.283	6.96	40.8%
1/2	0.263	6.14	42.9%
1/2	0.250	5.62	44.4%
1/2	0.225	4.68	47.5%
1/2	0.207	4.04	49.8%
1/2	0.192	3.54	52.2%
1/2	0.177	3.06	54.5%
1/2	0.162	2.61	57.1%
1/2	0.148	2.22	59.5%
1/2	0.135	1.88	62.0%
1/2	0.120	1.51	65.0%
1/2	0.105	1.18	68.3%
1/2	0.092	0.93	71.3%
1/2	0.080	0.71	74.3%
1/2	0.072	0.58	76.4%
1/2	0.063	0.45	78.9%
3/8	0.375	13.20	25.0%
3/8	0.313	9.99	29.7%
3/8	0.283	8.48	32.5%
3/8	0.263	7.51	34.5%
3/8	0.250	6.89	36.0%
3/8	0.225	5.77	39.0%
3/8	0.207	5.00	41.5%
3/8	0.192	4.39	43.8%
3/8	0.177	3.82	46.1%
3/8	0.162	3.27	48.7%
3/8	0.148	2.79	51.4%
3/8	0.135	2.37	54.1%
3/8	0.120	1.92	57.4%
3/8	0.105	1.51	61.0%
3/8	0.092	1.18	64.5%
3/8	0.080	0.91	67.9%
3/8	0.072	0.75	70.4%
3/8	0.063	0.59	73.3%
3/8	0.054	0.44	76.4%
5/16	0.263	8.46	29.5%
5/16	0.250	7.78	30.9%
5/16	0.225	6.53	33.8%
5/16	0.207	5.68	36.2%
5/16	0.192	5.00	38.4%
5/16	0.177	4.36	40.8%
5/16	0.162	3.74	43.4%
5/16	0.148	3.20	46.0%
5/16	0.135	2.72	48.8%
5/16	0.120	2.21	52.2%
5/16	0.105	1.74	46.0%
5/16	0.092	1.37	59.6%
5/16	0.080	1.07	63.4%
5/16	0.072	0.88	66.1%
5/16	0.063	0.69	69.3%
5/16	0.054	0.51	72.7%
1/4	0.250	8.95	25.0%
1/4	0.225	7.55	27.7%
1/4	0.207	6.59	29.9%
1/4	0.192	5.82	32.0%
1/4	0.177	5.08	34.3%
1/4	0.162	4.38	36.8%
1/4	0.148	3.76	39.4%
1/4	0.135	3.21	42.2%
1/4	0.120	2.62	45.6%
1/4	0.105	2.07	49.6%
1/4	0.092	1.64	53.4%
1/4	0.080	1.28	57.4%
1/4	0.072	1.06	60.3%
1/4	0.063	0.83	63.8%
1/4	0.054	0.62	67.6%
1/4	0.047	0.48	70.9%

PERFORMATED METAL - SPECIFICATIONS



Round Holes Staggered Pattern

Carbon Steel

Hole	Centers	Gauge/Plate Thick.	Open Area
.020 RD	.043" STG	26	20%
1/32" RD	1/16" STG	22	23%
3/64" RD	5/64" STG	24	33%
3/64" RD	3/32" STG	22 THRU 18	23%
1/16" RD	3/32" STG	22 THRU 16	40%
1/16" RD	7/64" STG	20 THRU 16	30%
1/16" RD	1/8" STG	26 THRU 16	23%
5/64" RD	1/8" STG	22 THRU 16	35%
3/32" RD	5/32" STG	24 THRU 14	33%
3/32" RD	3/16" STG	24	23%
.117" RD	5/32" STG	18	51%
1/8" RD	3/16" STG	24 THRU 11	40%
1/8" RD	7/32" STG	14 THRU 12	30%
9/64" RD	3/16" STG	18	51%
5/32" RD	3/16" STG	22 THRU 16	63%
5/32" RD	1/4" STG	20THRU10	35%
3/16" RD	7/32" STG	22 THRU 16	67%
3/16" RD	1/4" STG	224 THRU 12	51%
3/16" RD	5/16" STG	10, 3/16"	33%
3/16" RD	3/8" STG	14 THRU 10	23%
1/4" RD	5/16" STG	20 THRU 16	58%
1/4" RD	3/8" STG	26 THRU 1/4"	40%
5/16" RD	7/16" STG	20 THRU 1/4"	46%
3/8" RD	1/2" STG	20 THRU 1/4"	46%

Hole	Centers	Gauge/Plate Thick.	Open Area
1/2" RD	11/16" STG	20 THRU 1/4"	48%
3/4" RD	1" STG	16 THRU 1/4"	51%
1" RD	1-3/8" STG	10 THRU 1/4"	48%
1-1/4" RD	1-5/8" STG	3/16",1/4"	54%
1-1/2" RD	2" STG	3/16",1/4"	51%
2" RD	2-1/2" STG	3/16",1/4"	58%
2-1/2" RD	3" STG	3/16",1/4"	63%
3" RD	3-1/2" STG	3/16",1/4"	67%
3-1/2" RD	4" STG	1/4"	70%
4" RD	4-1/2" STG	10 THRU 1/4"	72%
2-1/2" RD	3" Stag	3/16"	63%
3" RD	3-1/2" Stag	3/16"	67%
4" RD	4-1/2" Stag	10	72%

G-90 Galvanized Steel

.037 RD	.055" STG	26	36%
5/64" RD	1/8" STG	20,18	35%
3/32" RD	5/32" STG	22 THRU 18	33%
3/32" RD	3/16" STG	22 THRU 18	23%
1/8" RD	3/16" STG	20 THRU 16	40%
3/16" RD	1/4" STG	20 THRU 16	51%
1/4" RD	5/16" STG	20	58%
5/16" RD	7/16" STG	16	46%
3/8" RD	1/2" STG	16	46%
5/16" RD	7/16" Stag	16	46%
3/8" RD	1/2" Stag	16	51%

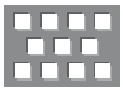
Hole	Centers	Gauge/Plate Thick.	Open Area
.020 RD	.045" STG	30	18%
1/32 RD	1/16" STG	26	23%
3/64" RD	3/32" STG	24	23%
.050" RD	5/64" STG	26, 24	37%
1/16" RD	3/32" STG	22, 20	40%
1/16" RD	7/64" STG	26, 22	30%
1/16" RD	1/8" STG	26 THRU 18	23%
5/64" RD	1/8" STG	22, 20	35%
3/32" RD	5/32" STG	22 THRU 14	33%
1/8" RD	3/16" STG	26 THRU 11	40%
5/32" RD	3/16" STG	20 THRU 16	63%
3/16" RD	1/4" STG	24 THRU 14	51%
3/16" RD	5/16" STG	11	33%
1/4" RD	5/16" STG	22 THRU 16	58%
1/4" RD	3/8" STG	20 THRU 3/16"	40%
5/16" RD	7/16" STG	16 THRU 1/4"	46%
3/8" RD	9/16" STG	16 THRU 1/4"	40%
1/2" RD	11/16" STG	20 THRU 1/4"	48%
3/4" RD	1" STG	16 THRU 1/4"	51%
1" RD	1-1/4" STG	11	58%

Stainless Steel - Type 304/L and 316 /L

Additional Inventory and Services

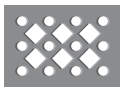
Our Stock List details the most comprehensive inventory of perforated metals, ON THE FLOOR in the United States! In addition to our most popular items listed above, we have hundreds of other patterns and sheet sizes in stock. If you desire a specific hole, pattern, sheet size or thickness not indicated, just call and we will gladly assist in providing products designed to meet your specific needs.

1. Custom punching
2. Shearing
3. Rolling
4. Powder Coating



Square Holes Straight Line Pattern

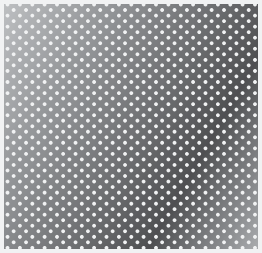
Hole	Centers	Gauge/Plate Thick.	Open Area
Carbon Steel			
1/8" SQ	5/32" STR	24, 22	
.200" SQ	1/4" STR	20	64%
1/4" SQ	5/16" STR	20	63%
1/4" SQ	1/2" STR	14	25%
5/16" SQ	7/16" STR	18	51%
3/8" SQ	1/2" STR	16	56%
1/2" SQ	5/8" STR	16	64%
3/4" SQ	1" STR	16	56%
Aluminum			
.200" SQ	1/4" STR	20	64%
Stainless			
.200" SQ	1/4" STR	22	64%



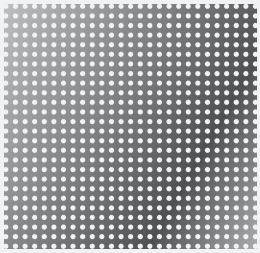
Ornamental Pattern

Hole	Centers	Gauge/Plate Thick.	Open Area
Carbon Steel			
CLOVERLEAF	STG	22	50%
GRECIAN	STR	22	35%
MARIETTA	STR	22	45%
MOIRE	STG	22	41%
OCTAGON	STR	22	35%
HEX	1/4" STG	22	79%
Aluminum - Alloy 3003-H14			
GRECIAN	3/16" STG	20	40%
WINDSOR	3/16" STG	20	63%
HEX	1/4" STG	20	79%
Stainless			
HEX	1/4" STG	20	79%

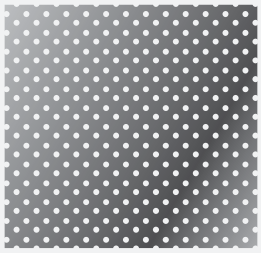
.020" Dia .043" Ctrs
20% Open Area



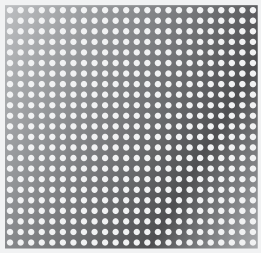
.027" Dia .050" Ctrs
26% Open Area



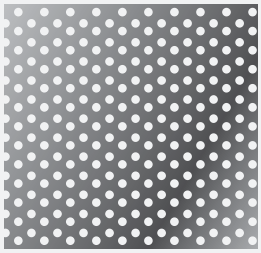
1/32" Dia 1/16" Ctrs
23% Open Area



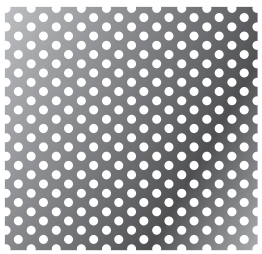
.033" Dia .055" Ctrs
33% Open Area



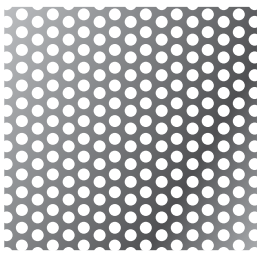
.045" Dia .066" Ctrs
30% Open Area



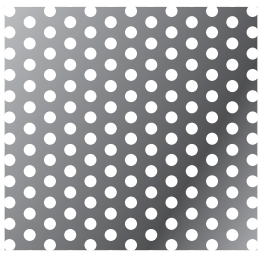
3/64" Dia 3/32" Ctrs
23% Open Area



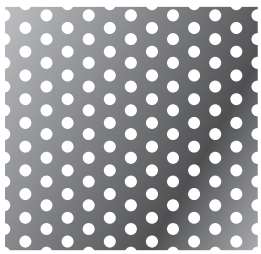
1/16" Dia 3/32" Ctrs
40% Open Area



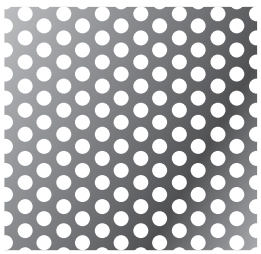
1/16" Dia 7/64" Ctrs
30% Open Area



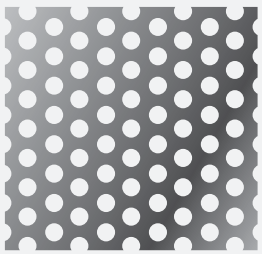
1/16" Dia 1/8" Ctrs
23% Open Area



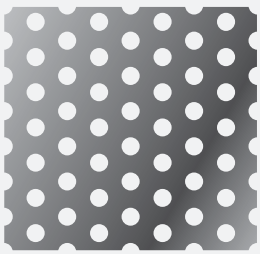
5/64" Dia 1/8" Ctrs
35% Open Area



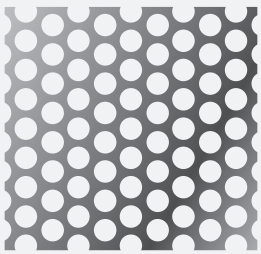
3/32" Dia 5/32" Ctrs
33% Open Area



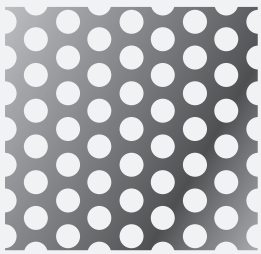
3/32" Dia 3/16" Ctrs
23% Open Area



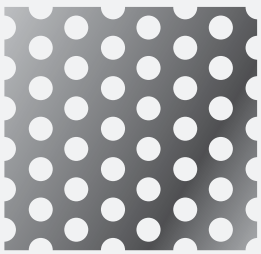
.117" Dia 5/32" Ctrs
51% Open Area



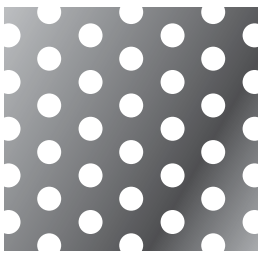
1/8" Dia 3/16" Ctrs
40% Open Area



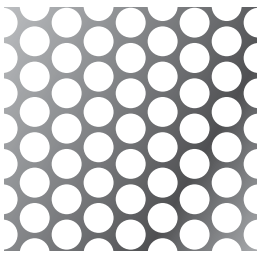
1/8" Dia 7/32" Ctrs
30% Open Area



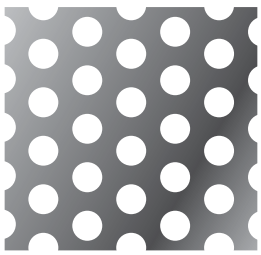
1/8" Dia 1/4" Ctrs
23% Open Area



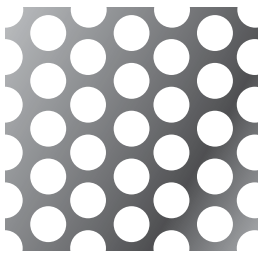
5/32" Dia 3/16" Ctrs
63% Open Area



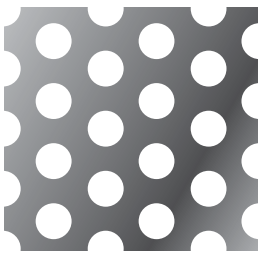
5/32" Dia 1/4" Ctrs
35% Open Area



3/16" Dia 7/32" Ctrs
51% Open Area

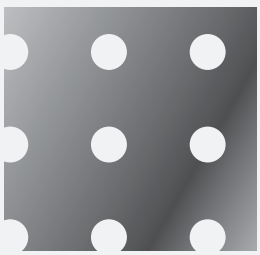


3/16" Dia 5/16" Ctrs
33% Open Area

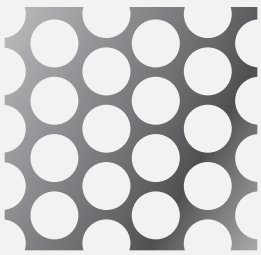


3/16" Dia 3/8" Ctrs
23% Open Area

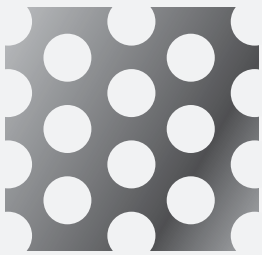
3/16" Dia 1/2" Ctrs
11% Open Area



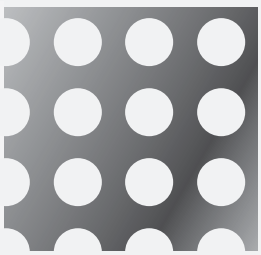
1/4" Dia 5/16" Ctrs
58% Open Area



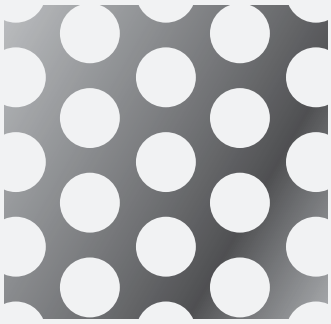
1/4" Dia 3/8" Ctrs
40% Open Area



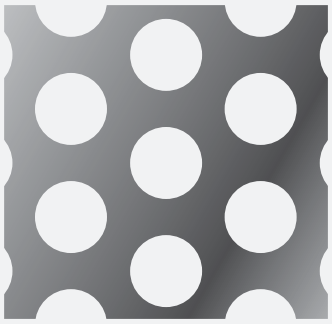
1/4" Dia 3/8" Ctrs
35% Open Area



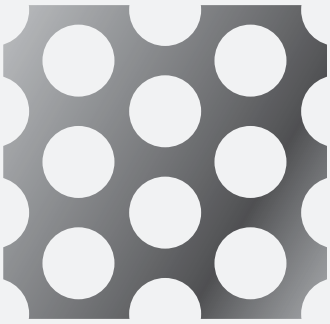
5/16” Dia 7/16” Ctrs
50% Open Area



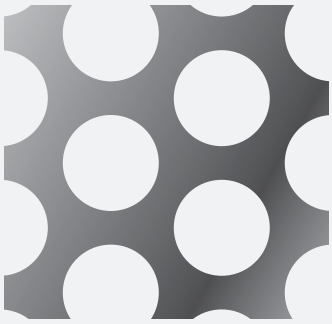
3/8” Dia 9/16” Ctrs
40% Open Area



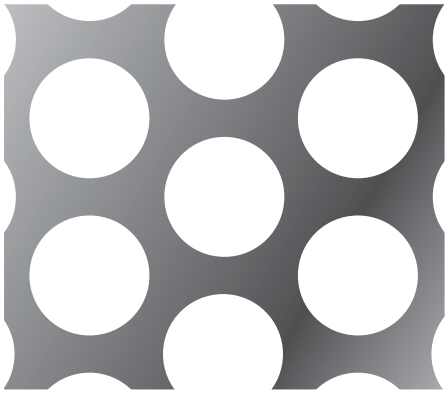
3/8” Dia 1/2” Ctrs
52% Open Area



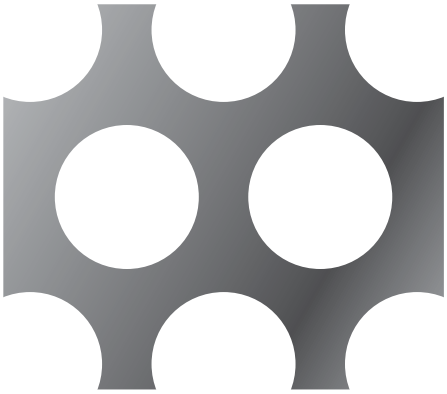
1/2” Dia 11/16” Ctrs
48% Open Area



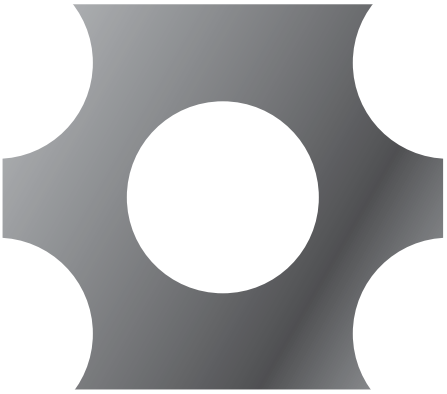
/8” Dia 7/8” Ctrs
46% Open Area



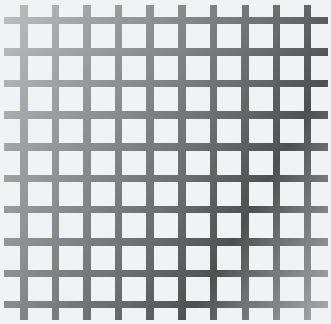
3/4” Dia 1” Ctrs
51% Open Area



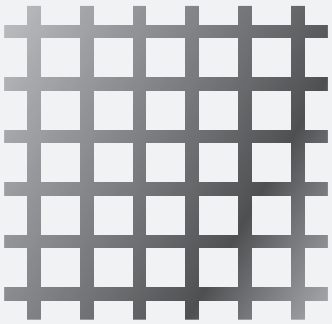
1” Dia 1-3/8” Ctrs
48% Open Area



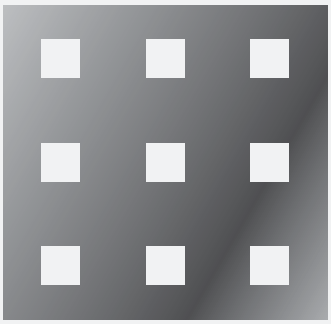
1/8” Sq 5/32” Ctrs
64% Open Area



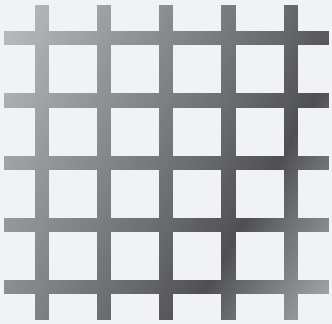
.200” Sq 1/4” Ctrs
64% Open Area



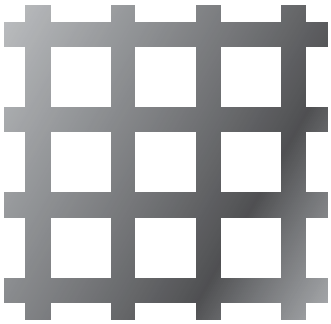
.200” Sq 1/2” Ctrs
16% Open Area



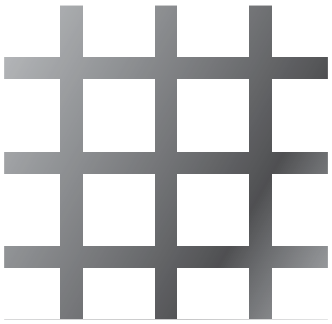
1/4” Sq 5/16” Ctrs
64% Open Area



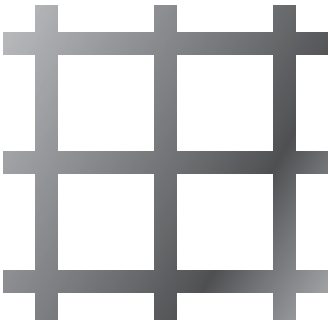
5/16” Sq 7/16” Ctrs
51% Open Area



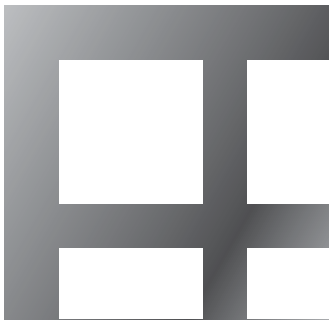
3/8” Sq 1/2” Ctrs
56% Open Area



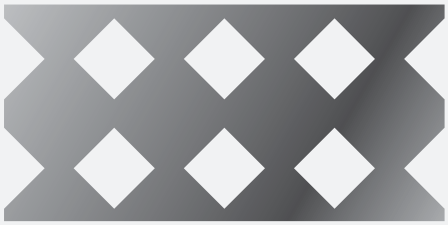
1/2” Sq 5/8” Ctrs
64% Open Area



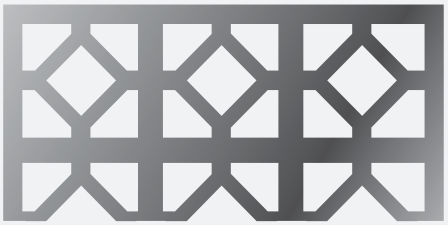
3/4” Sq 1” Ctrs
56% Open Area



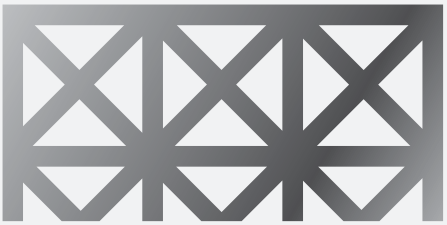
Diamond Cane
19% Open



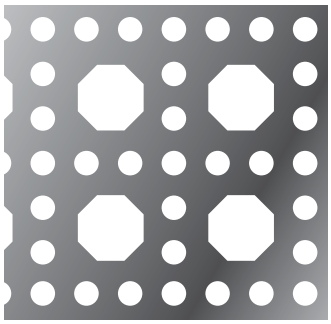
Marietta
45% Open



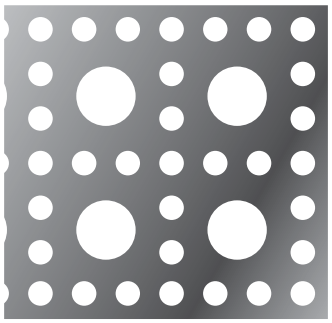
Grecian
35% Open



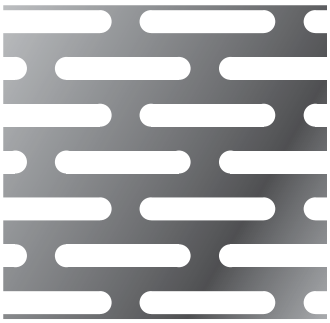
Standard Octagon
35% Open Area



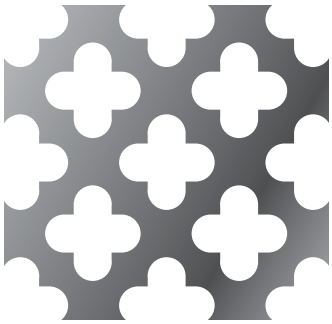
Rounded Cane
38% Open



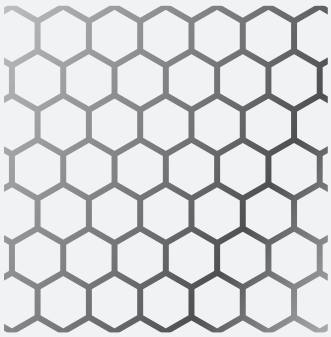
Moire 1/8" x 3/4"
41% Open Area



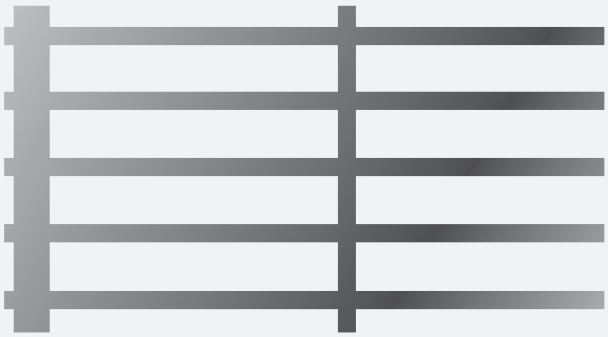
Full Cloverleaf
50% Open



1/4" Hex
79% Open Area



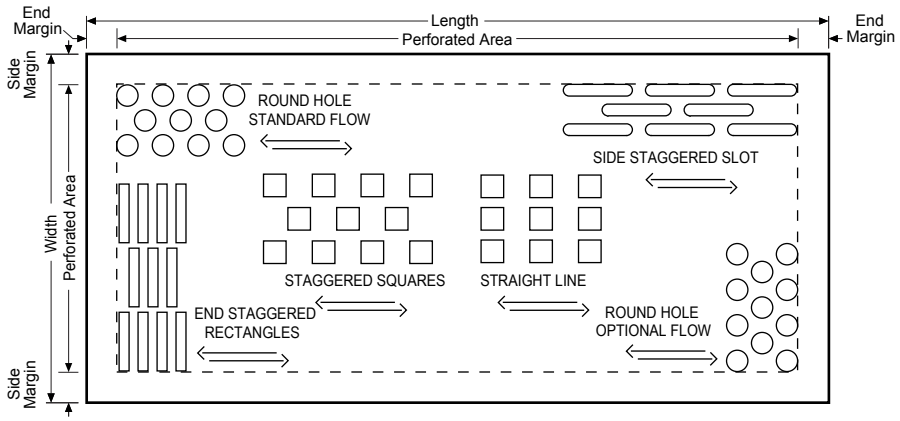
Max Flow 1/4" x 1-1/2" 68% Open Area, In Rows Across Width of Sheet. Vertical Bars 3/32" Wide, With Every Third Bar 3/16"

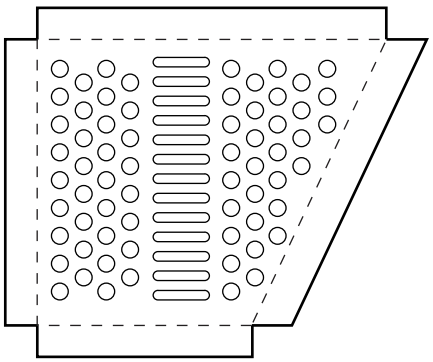


Custom Perforating

Marco is also your one-stop service center for custom perforated metals. If our vast inventory of materials and patterns does not suit your exact needs just call. We will gladly provide custom perforated metals of all description with special margins configurations and open area. Secondary fabrication such as shearing, coping, forming and finishing are readily available. Simply provide your drawings and we will promptly quote to your exact specifications.

Pattern Orientation

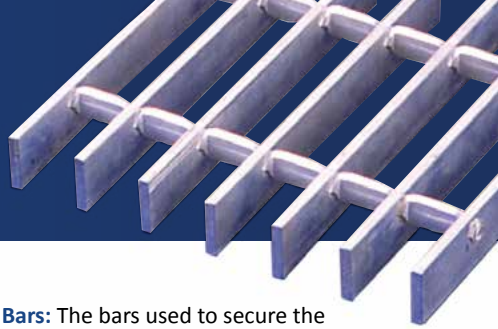




Round Hole Standard Flow: Straight rows parallel to length of sheet
Round Hole - Optional Flow: Straight rows parallel to width of sheet
Side Staggered Slots: Parallel to length of sheet

End Staggered Rectangles: Parallel to length of sheet
Straight Line: Squares, slots or rounds
Staggered Square: Parallel to length of sheet

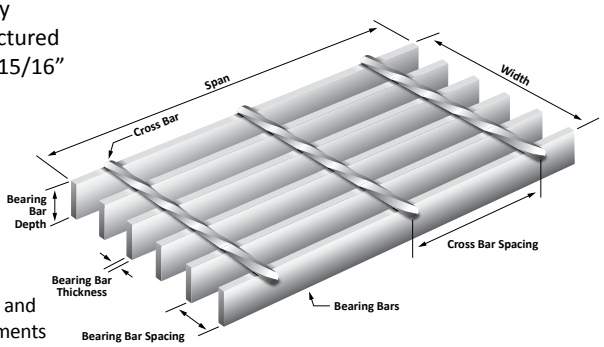
BAR GRATING



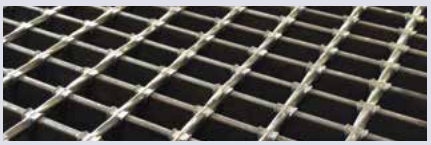
Metal Bar Grating can be defined as a series of metal bars positioned vertically, placed an equal distance apart and joined by cross members to form a rectangular or reticuline pattern. Typically manufactured from carbon steel, aluminum and stainless steel, bar gratings are also available in specialty metal alloys to suit nearly any application.

Bearing Bars: The vertically positioned bars are designated as the bearing bars. These bars range in size from 3/4" x 1/8" for light pedestrian traffic to 7" x 1/2" for extreme vehicular loads. Typically, the spacing of the bearing bars is indicated in sixteenths of an inch, measured from the center of one bar to the center of the adjacent bar. This center-to-center or on center spacing ranges from 7/16" to 19/16" (1-3/16") on standard grating products. Standard gratings are also available with wider spacings providing even greater open area, but should not be specified without consulting the manufacturer. Heavy Duty grating products are commonly manufactured with bearing bar spacings ranging from 15/16" to 38/16" (2-3/8") on center.

Cross Bars: The bars used to secure the position of the bearing bars are commonly designated as the cross bars. Cross bar profiles vary according to the method of assembly and material selected. As with bearing bars, cross bar spacing is measured as on center spacing. The customary cross bar spacing is 4" on center. On special order, 2" on center and other special spacings are also available.

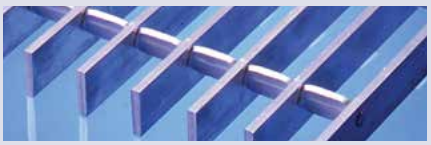


Methods of Assembly



Welded Grating – Manufactured by welding the cross bar/bearing bar intersection, typically by automated forge welding machines. Provides a secure welded connection and is ideal for most industrial applications.

Riveted Grating – Bearing bars are permanently riveted to reticulated cross bars to form our most rigid and durable products. Extremely well suited to absorb shock and impact loads from cart and dolley traffic.



Swaged Pressure Locked – Cross bars are inserted into pre-punched holes in the bearing bars and hydraulically swaged to lock the bars in place. Most effective for the manufacture of aluminum, stainless steel, and close mesh gratings.

Pressure Locked – Assembled by inserting punched bearing and cross bars into an "eggcrate" configuration and deforming the cross bars under hydraulic pressure. Excellent for the manufacture of architectural gratings.

Specific Considerations

Proper specification of bar gratings includes a determination of load conditions, effective unsupported clear span, flooring surface, trim and finish. Appropriate consideration of these elements plus any features unique to their particular application will allow the specifying authority to select products that will provide years of continuing service.

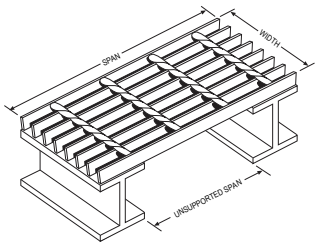
Span: In grating nomenclature, span serves a dual role in defining two significant features. First, unsupported span indicates the clear distance between effective points of support for the grating. Once the specifier has established the design load and acceptable deflection criteria, grating selection will be dictated by determining the maximum unsupported span and consulting the load tables on the pages that follow. Secondly, span indicates the overall finished length of the grating panels (parallel to the bearing bars) as they are supplied to the customer.

Width: The overall dimension of the grating panel measured perpendicular to the bearing bar span is designated as the panel width. Commonly manufactured and stocked in 24" and 36" nominal widths, grating panels can easily be supplied in a variety of widths to suit the needs of any application. Additionally, custom widths can be shop fabricated to hold any specific tolerance.

Serrated Surface: The excellent drainage and self-cleaning characteristics of plain surface grating make it suitable for the majority of applications. In the presence of materials which could cause the top surface of the bars to become slippery, the optional serrated surface should be considered. When serrated surfaces are specified, the bearing bar depth must be increased 1/4" greater than the sizes shown in the load tables and selection guides to provide the equivalent strength of non-serrated bars.

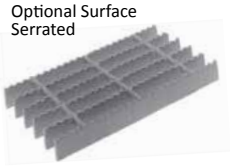
Banding: To enhance architectural appearance or to provide additional transverse stiffness, the open ends of the grating panels can be banded. This is achieved by welding a flatbar, similar in size to the bearing bars, to the cut ends of the grating panel. Banding can reduce impact stresses by transferring loads to adjacent bars that are not directly subjected to service loads. Trim banding should always be considered when the grating panels are designed to be removable on even an infrequent basis. Additionally, banding should always be specified when the ends of the bearing bars are unsupported or the grating is designed to service vehicular loads. Further banding descriptions and welding standards can be found on our website.

Finishes: Steel grating products are usually shipped with one of three standard finishes, bare steel, painted with one coat of the manufacturers red or black paint, or hot dip galvanized after fabrication in accordance with ASTM Standard A-123. Aluminum products are commonly supplied as mill finished, but are also available with optional anodized finishes. Stainless steel products as produced typically require secondary finishing such as chemical cleaning, abrasive blasting or electropolishing. All of our grating products can additionally be supplied with specialty custom finishes such as enamel or epoxy coatings. When considering such finishes, careful evaluation of the specified material and consultation with the coating manufacturer is essential.



Optional End

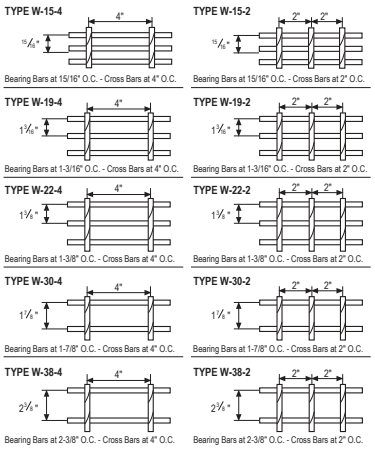
Optional Surface Serrated



Welded Steel Grating should be considered first when selecting a bar grating product because it is usually the most economical and provides a comfortable walking surface with nearly 80 percent open area. This, combined with the positive welded cross bar/bearing bar intersection, make these products our most popular. Manufactured from ASTM A-1011 carbon steel, welded gratings are recommended for nearly all industrial flooring applications.

First, specify the type of grating from the adjacent table. In the instance of standard welded grating, the "W" indicates the assembly of the grating shall be Welded construction, the "19" indicates that the bearing bars shall be 19/16's (1-3/16) inches on center, and the "4" indicates that the cross bars shall be spaced at 4 inches on center. Second, consult the load table below to select the appropriate bearing bar size for the loads and spans to be serviced. Proper designation for standard welded grating with 1" x 3/16" bearing bars is indicated 1" x 3/16" (W-19-4).

Spacings Available



Type W-19-4

Type W-11-4

Steel Bar Grating Load Table

19-4 / 19-2 Load Table

More load chart information available at www.marcospecialtysteel.com

Bearing Bar Size		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"	Weight Per sq. ft. (lbs.) 19-4	19-2	15-4	15-2	11-4	11-2	7-4	7-2
3/4 x 1/8	U	355	227	158	116	89	70								4.0	4.8	4.9	5.7	6.4	7.2	9.7	10.7
	D	.099	155	223	304	397	503															
	C	355	284	237	203	178	158															
	D	.079	424	479	.244	318	402															
3/4 x 3/16	U	533	341	237	174	133	105								5.6	6.4	6.9	7.7	9.2	10.0	14.5	16.0
	D	.099	155	223	304	397	503															
	C	533	426	353	305	266	237															
	D	3079	124	179	243	318	402															
1 x 1/8	U	632	404	281	206	156	125	101	84	70					5.1	5.9	6.2	7.1	8.2	9.0	12.9	14.2
	D	074	415	468	228	.298	377	.466	563	.670												
	C	632	505	421	361	316	281	253	230	211												
	D	.060	.093	434	182	.238	302	.372	.451	.336												
1 x 3/16	U	947	606	421	309	237	187	152	125	105					7.4	8.4	9.2	10.2	12.1	13.1	19.4	21.3
	D	.074	.116	168	228	.298	377	466	.563	.670												
	C	947	758	632	541	474	421	379	344	316												
	D	.060	.093	.134	182	.238	302	372	.451	.536												
1-1/4 x 1/8	U	987	632	430	322	247	195	158	130	110	93	81			6.4	7.4	7.8	8.8	10.3	11.3	15.8	12.1
	D	.960	.093	434	482	.238	302	.372	451	.536	.629	.730										
	C	987	780	658	564	493	430	395	359	329	304	282										
	D	.048	.074	407	440	191	241	298	.360	.429	.504	584										
1-1/4 x 3/16	U	1480	947	124	483	370	292	237	196	164	140	121			9.0	10.0	11.2	12.2	14.9	15.9	23.8	25.7
	D	060	093	987	482	238	.302	372	.451	.536	.629	.730										
	C	1480	084	107	846	740	658	595	538	493	455	424										
	D	.048	.074	658	146	.191	.241	798	360	.429	.504	584										
1-1/2 x 1/8	U	1421	909	632	464	355	281	277	188	158	135	116	89	70	7.4	8.4	9.2	10.2	12.1	13.1	18.8	20.0
	D	050	038	115	452	.199	.251	.310	376	447	.524	.608	.794	1.006								
	C	1421	025	945	812	711	.632	568	317	474	437	406	455	316								
	D	040	302	089	122	.159	.201	.248	.300	358	.420	.487	.636	.804								
1-1/2 x 3/16	U	2132	1364	147	698	533	421	341	282	237	202	174	133	105	11.1	12.5	13.7	15.1	18.1	19.6	28.1	30.1
	D	050	.078	412	152	499	.251	310	.326	.447	524	.608	794	1.006								
	C	2132	1705	1421	.218	1066	947	853	775	711	656	609	533	474								
	D	.040	.062	.089	022	459	.201	.248	.300	.358	.420	.487	.636	804								
1-3/4 x 3/16	U	2961	1837	1289	347	725	573	464	384	322	275	227	181	143	12.7	14.1	15.7	17.1	20.9	22.3	32.5	34.4
	D	043	067	096	430	120	215	.266	322	.383	.450	.521	681	.862								
	C	7901	2321	1934	1658	1451	1289	1161	1055	567	893	829	225	645								
	D	.034	053	.077	104	436	.172	213	257	.306	.360	.417	.543	.689								
2 x 3/16	U	3789	2425	1684	1237	947	794	606	501	421	359	309	237	487	14.3	15.7	17.8	19.2	23.7	25.1	36.9	38.8
	D	.037	038	084	114	149	189	233	282	335	393	456	596	.754								
	C	3789	3632	2525	2165	1895	1684	1316	1378	1263	1166	1083	047	842								
	D	.030	.047	.067	.090	.119	.151	.186	.225	.268	.315	.365	.477	.603								
2-1/4 x 3/16	U	4796	3069	2132	1566	1199	917	716	634	533	454	392	300	237	15.9	17.4	19.8	21.2	26.5	27.9	41.3	43.2
	D	033	052	074	401	137	168	207	.250	398	350	406	530	.670								
	C	4796	3869	1167	2741	2397	2132	1918	1744	1599	1476	1370	1199	1066								
	D	.026	.041	.060	4081	406	131	043	.200	.209	280	324	424	530								
2-1/2 x 3/16	U	5921	3739	2032	1933	1480	1120	947	783	658	561	483	320	292	17.5	19.0	21.8	28.8	29.2	30.7	45.6	47.5
	D	030	047	067	.091	119	151	186	225	268	315	.365	477	603								
	C	5921	4737	3947	3383	2961	2632	2368	2153	1974	1822	1692	1489	1316								
	D	.024	037	.054	.073	.095	.121	.149	.180	.215	.252	.292	.381	.483								

Loads and deflections are theoretical values based on 18,000 psi unit stress. For pedestrian comfort deflections in excess of 1/4" are not recommended.

U = Safe Uniform Load (lbs./sq. ft.)
C = Safe Concentrated Mid-span Load (lbs./ft. of grating width)
D = Deflection (inches)

Note: When gratings with serrated bearing bars are selected, the depth of grating required to service a specified load will be 1/4" greater than that shown in the tables above.

Conversion: The loads shown above are for type 19-4 and 19-2 gratings. To determine the load carrying capacity for alternative bar spacings, multiply the loads given by the following conversion factors (DEFLECTION REMAINS CONSTANT):

- For types 15-4 and 15-2: 1.26
- For types 11-4 and 11-2: 1.72
- For types 7-4 and 7-2: 2.71

Selection Guide: 19-4 Plain Surface Grating

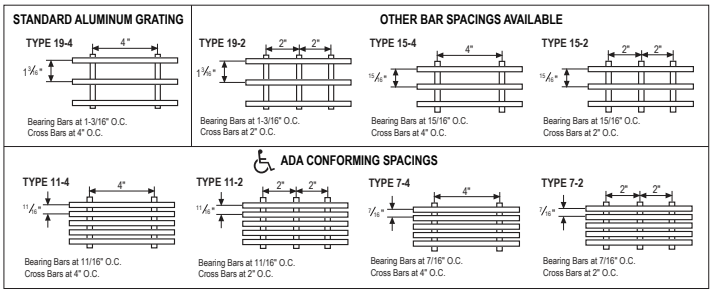
For deflection of not more than 1/4" when subjected to the severest of the following: (1) the uniform loads below; (2) under concentrated mid-span loads of 300 lbs. up to 6'-0" span; or (3) 400 lbs. for spans 6'-0" and over.

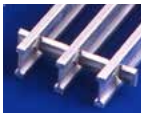
Safe Uniform Load lbs./sq. ft.	2'-6	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	8'-0"	9'-0"
50	1 x 1/8	1 x 1/8	1 x 1/8	1 x 1/8	1 x 3/16	1-1/4 x 1/8	1-1/4 x 3/16	1-1/2 x 3/16	1-3/4 x 3/16	1-3/4 x 3/16	2 x 3/16	2-1/4 x 3/16
75	1 x 1/8	1 x 1/8	1 x 1/8	1 x 1/8	1 x 3/16	1-1/4 x 1/8	1-1/4 x 3/16	1-1/2 x 3/16	1-3/4 x 3/16	1-3/4 x 3/16	2 x 3/16	2-1/4 x 3/16
100	1 x 1/8	1 x 1/8	1 x 1/8	1 x 1/8	1 x 3/16	1-1/4 x 1/8	1-1/4 x 3/16	1-1/2 x 3/16	1-3/4 x 3/16	1-3/4 x 3/16	2-1/4 x 3/16	2-1/2 x 3/16
125	1 x 1/8	1 x 1/8	1 x 1/8	1 x 1/8	1-1/4 x 1/8	1-1/4 x 3/16	1-1/2 x 1/8	1-1/2 x 3/16	1-3/4 x 3/16	2 x 3/16	2-1/4 x 3/16	-
150	1 x 1/8	1 x 1/8	1 x 1/8	1 x 3/16	1-1/4 x 1/8	1-1/4 x 3/16	1-1/2 x 3/16	1-3/4 x 3/16	1-3/4 x 3/16	2 x 3/16	2-1/2 x 3/16	-
200	1 x 1/8	1 x 1/8	1 x 1/8	1-1/4 x 1/8	1-1/4 x 3/16	1-1/2 x 3/16	1-3/4 x 3/16	1-3/4 x 3/16	2 x 3/16	2-1/4 x 3/16	-	-
300	1 x 1/8	1 x 3/16	1 x 3/16	1-1/4 x 3/16	1-1/2 x 3/16	1-3/4 x 3/16	2 x 3/16	2 x 3/16	2-1/4 x 3/16	2-1/2 x 3/16	-	-

Aluminum Grating products are light in weight, resistant to atmospheric corrosion, non-sparking and offer an attractive appearance. These characteristics make aluminum grating especially suitable for water and sewage treatment facilities, marine environments, food processing and petro-chemical installations. Manufactured from 6061 and 6063 alloys, the most popular and economical method of assembly for aluminum gratings is pressure locking by the swaging process. This versatile manufacturing system allows us to offer three distinct profiles: Standard Rectangular Bar, Flush-Top Rectangular Bar and I-Bar.

First, specify the type of grating that is indicated by designating one of the three profiles shown combined with the bearing bar/cross bar spacings Illustrated in the adjacent table. Second, consult the load table below to select the appropriate bearing bar size for the loads and spans to be served. Example: A-19-4 for Rectangular Bar Gratings.

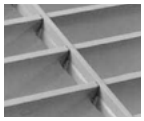
Spacings Available





I-Bar Profile "AI": Lighter, extruded I-beams with a standard skid resistant, fluted surface have essentially the same load carrying capacity as rectangular bar products of equal depth.

Rectangular Bar Profile "A": Rectangular bearing bars available with plain or serrated surface are swaged with the cross bar below the walking surface and fully secured within the bearing bar.



Flush Top Profile "AF": Similar to Profile "A" except the special extruded cross bar is swaged flush with the top surface of the bearing bars providing a more comfortable walking surface.

Aluminum Grating Load Table

19 - 4/19 - 2 Load Table

More load chart information available at www.marcospecialtysteel.com

Bearing Bar Size		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"	Weight Per sq. ft. (lbs.) 19-4	19-2	15-4	15-2	11-4	11-2	7-4	7-2
1 x 1/8	U	421	269	187	137	105	83								1.8	2.2	2.2	2.6	2.9	3.3	4.4	4.7
	D	.144	225	.324	.441	.576	.729															
	C	421	337	281	241	211	187															
	D	.115	.180	.259	.353	461	.583															
1 x 3/16 or 1" 1-BAR	U	632	404	281	206	158	125								2.6	2.9	3.2	3.5	4.2	4.5	6.4	6.7
	D	.144	.225	.324	.441	.576	729															
	C	632	505	421	361	316	281															
	D	115	180	259	.353	461	.583															
1-1/4 x 1/8	U	658	421	292	215	164	130	105	87	73					2.2	2.5	2.7	3.0	3.6	3.9	5.4	5.7
	D	115	.180	259	.353	.461	.583	.720	.871	1.037												
	C	658	526	439	376	329	292	263	239	219												
	D	.092	.144	207	282	.369	467	.576	.697	.829												
1-1/4 x 3/16 or 1-1/4" 1-BAR	U	087	632	439	322	247	195	158	130	110	93	81			3.1	3.5	3.9	4.2	5.2	5.5	7.9	8.3
	D	115	180	259	.353	.461	.583	.720	.871	1037	1.217	1.411										
	C	982	789	658	564	493	439	395	359	329	304	282										
	D	.092	.144	207	.282	.369	.467	.576	697	.829	.973	1.129										
1-1/2 x1/8	U	947	606	421	309	237	187	152	125	105	90	77	67	59	2.6	2.9	3.2	3.5	4.2	4.5	6.4	6.7
	D	.096	.150	.216	294	.384	.486	.600	.726	.866	1.014	1.176	1.350	1.536								
	C	947	758	632	541	474	421	379	344	.316	291	271	253	237								
	D	.077	.120	.173	.235	.307	.389	.480	.581	.691	811	.941	1.080	1.229								
1-1/2 x 3/16 or 1-1/2" 1-BAR	U	1421	909	632	464	355	281	227	188	158	135	116	101	89	3.7	4.0	4.6	4.9	6.1	6.5	9.4	9.8
	D	096	.150	216	294	.384	.486	.600	726	.864	1.014	1.176	1.350	1.536								
	C	1421	1137	.947	812	211	632	568	517	474	432	406	379	355								
	D	.077	.129	.173	.235	.307	389	480	.581	691	811	.941	1.080	1.229								
1-3/4 x 3/16 or 1-3/4" 1-BAR	U	1934	1238	860	632	484	382	309	256	215	183	158	138	121	4.2	4.6	5.3	5.6	7.1	7.4	10.9	11.3
	D	082	.129	185	252	.329	.417	.514	622	.741	.869	1.008	1.157	1.317								
	C	1934	1547	1289	1105	967	860	774	703	645	.595	553	516	.484								
	D	.066	.103	.148	.202	.263	.333	.411	498	.592	.695	806	.926	1.053								
2 x 3/16 or 2" 1-BAR	U	2526	1617	1123	825	632	499	404	334	281	239	206	180	158	4.8	5.1	6.0	6.3	8.0	8.4	12.4	12.8
	D	072	113	.162	221	288	365	450	.545	.648	.761	.882	1.013	1.152								
	C	2526	2021	1684	1444	1263	1123	1011	919	842	777	722	674	632								
	D	.058	.090	.130	176	.230	.292	.360	.436	.518	.608	.706	.810	922								
2-1/4 x 3/16 or 2-1/4" 1-BAR	U	3197	2046	1421	1044	299	632	.512	423	355	303	261	227	200	5.4	5.7	6.7	7.0	9.0	9.3	14.0	14.3
	D	064	100	144	.196	.256	324	.400	.484	.576	.676	.784	.900	1.024								
	C	3197	2558	2132	1827	1599	1421	1279	1163	1066	984	914	853	799								
	D	.051	.080	.115	.157	.205	.259	.420	.387	.461	.541	.627	.720	.819								
2-1/2 x 3/16 or 2-1/2" 1-BAR	U	3947	2526	1754	1289	987	780	632	522	439	374	322	281	247	5.9	6.3	7.4	7.7	10.0	10.3	15.5	15.8
	D	.058	.090	130	.176	.230	292	.360	436	.518	.608	.706	.810	.922								
	C	3947	3158	2632	2256	1974	1754	1579	1435	1316	1215	1128	1053	287								
	D	.046	.072	.104	.141	.184	.233	.288	.348	.415	.487	.564	.648	.737								

Loads and deflections are theoretical values based on 18,000 psi unit stress. For pedestrian comfort deflections in excess of 1/4" are not recommended.

U = Safe Uniform Load (lbs./sq. ft.)
C = Safe Concentrated Mid-span Load (lbs./ft. of grating width)
D = Deflection (inches)

Note: When gratings with serrated bearing bars are selected, the depth of grating required to service a specified load will be 1/4" greater than that shown in the tables above.

Conversion: The loads shown above are for type 19-4 and 19-2 gratings. To determine the load carrying capacity for alternative bar spacings, multiply the loads given by the following conversion factors (DEFLECTION REMAINS CONSTANT):

- For types 15-4 and 15-2: 1.26
- For types 11-4 and 11-2: 1.72
- For types 7-4 and 7-2: 2.71

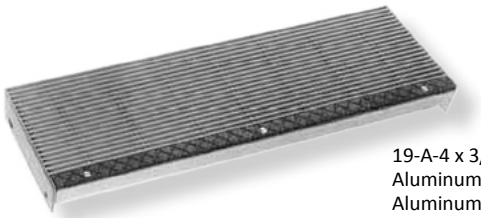
Selection Guide: 19-4 Plain Surface Grating

For deflection of not more than 1/4" when subjected to the severest of the following: (1) the uniform loads below; (2) under concentrated mid-span loads of 300 lbs. up to 6'-0" span; or (3) 400 lbs. for spans 6'-0" and over.

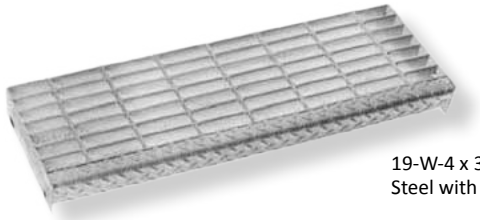
Safe Uniform Load lbs./sq. ft.	2'-0	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"
50	1 x 1/8	1 x 1/8	1x3/16	1 x 3/16	1 x 3/16	1-1/4 x 3/16	1-1/2 x 3/16	1-3/4 x 3/16	2 x 3/16	2-1/4 x 3/16	2-1/2 x 3/16
75	1 x 1/8	1 x 1/8	1x3/16	1 x 3/16	1-1/4 x 3/16	1-1/4 x 3/16	1-1/2 x 3/16	1-3/4 x 3/16	2 x 3/16	2-1/4 x 3/16	2-1/2 x 3/16
100	1 x 1/8	1 x 1/8	1x3/16	1 x 3/16	1-1/4 x 3/16	1-1/2 x 3/16	1-3/4 x 3/16	1-3/4 x 3/16	2 x 3/16	2-1/4 x 3/16	2-1/2 x 3/16
125	1 x 1/8	1 x 1/8	1x3/16	1-1/4 x 3/16	1-1/4 x 3/16	1-3/4 x 3/16	1-3/4 x 3/16	2 x 3/16	2-1/4 x 3/16	2-1/2 x 3/16	-
150	1 x 1/8	1 x 1/8	1x3/16	1-1/4 x 3/16	1-1/2 x 3/16	1-3/4 x 31/16	1-3/4 x 3/16	2 x 3/16	2-1/4 x 3/16	2-1/2 x3/16	-
200	1 x 1/8	1 x 1/8	1x3/16	1-1/4 x 3/16	1-1/2 x 3/16	1-3/4 x 3/16	2 x 3/16	2-1/4 x 3/16	2-1/2 x 3/16	-	-
300	1 x 1/8	1 x 3/16	1-1/4x3/16	1-1/2 x 3/16	1-3/4 x 3/16	2 x 3/16	2-1/4 x 3/16	2-1/2 x 3/16	-	-	-

Fabricated Stair Treads

Fabricated Stair Treads are manufactured in the full range of products offered in this catalog. Carbon steel, aluminum and stainless steel treads are manufactured with a variety of defined, visible nosings, and pre-punched end or carrier plates, ready for bolting to the stair stringers.

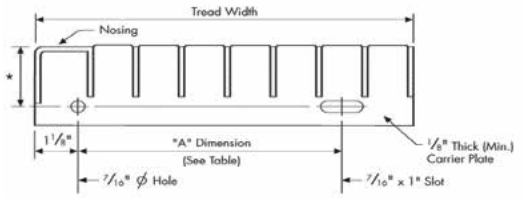


19-A-4 x 3/16
Aluminum with Corrugated Aluminum Nosing



19-W-4 x 3/16
Steel with Checker Plate Nosing

Carrier Plates & Tread Widths

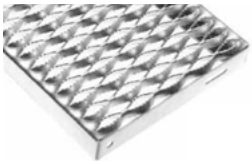


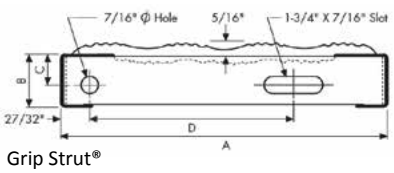
- Steel Treads
  3/4" - 1-1/4" bearing bars = 1-3/4"
  1-1/2" - 2" bearing bars = 2-1/4"
- Aluminum Treads
  All sizes = 2-1/4"

Stair Tread Widths

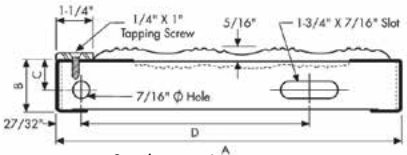
1-3/16" O.C. Bearing Bars			15/16" O.C. Bearing Bars		
Nominal Tread Width	Number of Bearing Bars	Standard "A" Dimension	Nominal Tread Width	Number of Bearing Bars	Standard "A" Dimension
6-1/4"	5	2-1/2"	6-1/8"	6	2-1/2"
7-3/8"	6	4-1/2"	7-1/8"	7	4-1/2"
8-1/2"	7	4-1/2"	8"	8	4-1/2"
9-3/4"	8	7"	9"	9	4-1/2"
10-15/16"	9	7"	9-7/8"	10	7"
12-1/8"	10	7"	10-7/8"	11	7"

Standard Grip Strut® Stair Treads





Grip Strut®



Grip Strut® w/ Cast Abrasive Nosing

Standard Sizes & Recommended Spans

Steel			Standard Stair Treads	Stair Treads w/ Abrasive Nosing
Span In.	Gauge	Channel Depth In.	Size In.	Size In.
Up to 30	14	1-1/2	2-Dia-3/4 3-Dia 4-Dia-9-1/2 5-Dia-11-3/4	- 3-Dia-8-1/8 4-Dia-10-1/2 -
Up to 36	14	1-1/2	2-Dia-3/4 3-Dia 4-Dia-9-1/2 5-Dia-11-3/4	- 3-Dia-8-1/8 4-Dia-10-1/2 -
36 to 42	14	1-1/2	2-Dia-3/4 3-Dia 4-Dia-9-1/2 5-Dia-11-3/4	- 3-Dia-8-1/8 4-Dia-10-1/2 -
42 to 48	14	2	2-Dia-3/4 3-Dia 4-Dia-9-1/2 5-Dia-11-3/4	- 3-Dia-8-1/8 4-Dia-10-1/2 -
Aluminium				
Up to 42	.080"	2	2-Dia-3/4 3-Dia 4-Dia-9-1/2 5-Dia-11-3/4	- 3-Dia-8-1/8 4-Dia-10-1/2 -
Up to 48	.100"	2	2-Dia-3/4 3-Dia 4-Dia-9-1/2 5-Dia-11-3/4	- 3-Dia-8-1/8 4-Dia-10-1/2 -
Stainless Steel				
Up to 30	Type 316l 16Ga	2	4-Dia-9-1/2 5-Dia-11-3/4	- -
Up to 36	Type 304l 16Ga	2	4-Dia-9-1/2 5-Dia-11-3/4	- -

(1) Recommendations are based on approx. Min. Loads of 300 lb. Uniform. Specific performance criteria may vary by municipality/building code body and should be locally checked prior to finalizing specifications. *Available on special order

Grip Strut® Carrier Plate Specifications

Standard				With Abrasive Nosing			
A	B	C	D	A	B	C	D
4-3/4" (2-Dia.)	1-1/2" 2"	3/4" 1"	2-5/8" 2-5/8"	-	-	-	-
7" (3-Dia.)	1-1/2" 2"	3/4" 1"	3-3/8" 3-3/8"	8-1/8" (3- Dia.)	1-1/2" 2"	3/4" 1"	4-1/2" 4-1/2"
9-1/2" (4-Dia.)	1-1/2" 2"	3/4" 1"	5-7/8" 5-7/8"	10-1/2" (4-Dia.)	1-1/2" 2"	3/4" 1"	6-7/8" 6-7/8"
11-3/4" (5-Dia.)	1-1/2" 2"	3/4" 1"	8-1/8" 8-1/8"	-	-	-	-

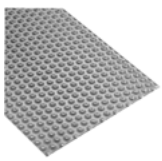
Perfo Grip® & Tread Grip® Stair Treads

Recommended Sizes & Spans

Span In.	Material / Gauge	Channel Dept In.	Width
up to 30"	Steel 13 ga.	1-1/2	5", 7", 10", 12"
31 to 48"	Steel 11 ga.	2	5", 7", 10", 12"
up to 42"	Aluminum .125	2	5", 7", 10", 12"

Perfo Grip®

Perfo Grip® with Tread Grip® Nosing



Tread Grip®

GRIP STRUT® SAFETY GRATING

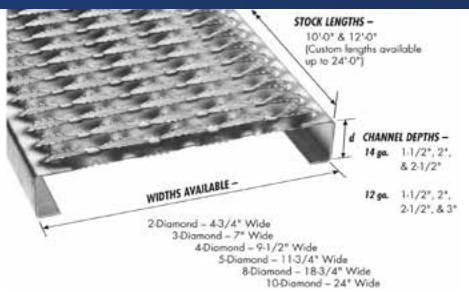
Grip Strut® Grating provides a safer, serrated surface because it grips soles securely in all directions and practically every place. These non-slip surfaces are ideal for inside or outside locations where mud, ice, snow, oil and detergents can create hazardous walking conditions. Standard Serrated Surface meets anti-slip values set forth in Federal Specification RR-G-1602A. Grip Strut®'s maintenance-Free open design permits quick drainage of fluids, chips, grease and mud, as well as allows convenient access for cleaning with brush, liquid or air spray to minimize overall maintenance. Any ice accumulation shears easily under normal foot pressure and the openings are small enough to catch most falling tools and other dangerous objects.

High strength-to-weight performance is achieved through depth of section and structural design. Bridged struts with integral side channels form a plank that can support loads with minimum transverse and longitudinal deflection. This sturdy construction provides the advantages of heavy load-carrying capacity with minimal deflection; rugged durability with longer-lasting performance.

Grip Strut® is economical with its low material cost and nominal erection cost as well as saves with its long-lasting, rust resisting materials and finishes. Standard mill-galvanized finish resists corrosion to provide lasting surfaces. High-strength aluminum and Types 304 and 316L stainless steel are available to provide maximum corrosion resistance. Black unpainted steel is available for installations requiring hot dipped galvanized finish after fabrication. These lightweight but brawny panels permit substantial reduction in structural steel requirements.

Grip Strut® comes in a variety of standard widths and channel heights, and numerous non-standard shapes and sizes to meet almost any requirement of strength, size, durability, weight, finish, appearance and application. It combines safety and durability with ease of fabrication and versatility. One piece construction minimizes the need for plant fabrication. Special shapes and forming can be accomplished to suit unusual requirements. It's simple and economical to apply finish coatings because all surfaces are accessible to brush or spray. Grip Strut® may be hot dipped galvanized after fabrication, anodized, plated, plastic-coated or otherwise finished to suit job requirements.

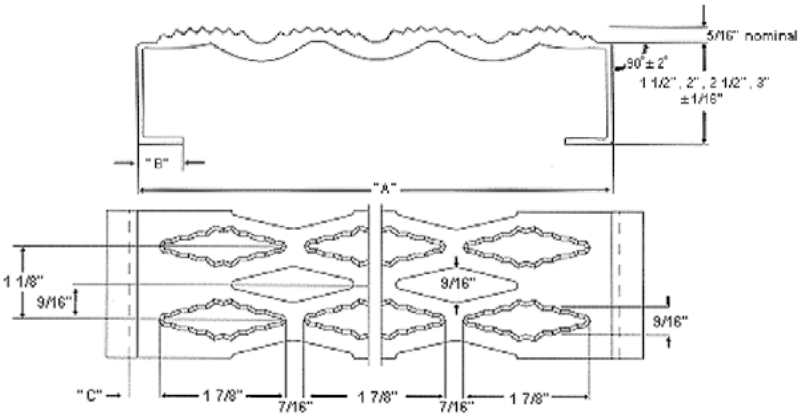
Standard Grip Strut® planks are available in materials and sizes to meet most load/span requirements and may be used as is or banded, cut, welded, or punched to suit requirements. They were tested by an independent laboratory for slip resistance according to standards and methods established by Federal Specification RR-G-1602D, Grip Strut® proved its superiority by exceeding all requirements of this specification. The standards were exacting – five shoe sole materials tested in three directions under five conditions: dry, greasy, muddy, soapy and icy. Grip Strut® tested 10% to 180% more slip-resistant than similar materials, depending on shoe materials and surface conditions. Fewer accidents, with resultant lower insurance costs and reduced workman's compensation losses, should be the logical reason for specifying Grip Strut® for walking-working surfaces and stair treads. Values determined in accordance with standards for slip-resistance established by Federal Specification RR-G-1602D.



Installation is simple and quick due to light and easy-to-handle planks that can be handled by one person. Most sections are rapidly bolted, clamped or welded into place, easily field-cut at virtually any angle, or fabricated to adapt to field conditions. Several attachment devices permit fastening to most existing surfaces allowing for fast installation or disassembly.

Materials

- Pre-Galvanized Steel ASTM A-924-G90 14 & 12 gauge
- HRPO Uncoated Steel ASTM A-569 14 & 12 gauge
- 5052-H32 Aluminum 72 gauge (.080) or 10 gauge (.100) ASTM B-209
- 304 or 316l Stainless Steel 16 gauge



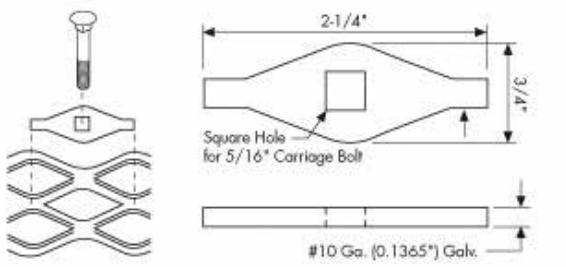
Standard Grip Strut® Fasteners

All gratings must be firmly anchored in place. Welding the planks to the supporting structure provides a superior, permanent installation. In areas where welding is not practical or installations where the planks must be removable, the diamond anchors or anchor clamp assemblies illustrated can provide a suitable alternative.

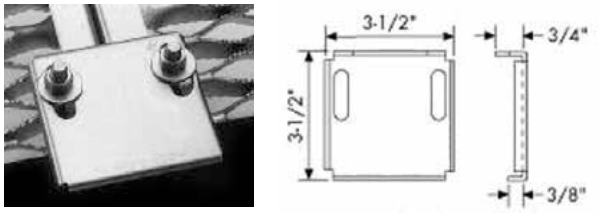
Diamond Anchor - shaped to fit in the Diamond opening. Punched to receive 5/16" carriage head bolt with square shank. Does not include bolts, nuts or washers.

Anchor and Clamp Assembly - clamp prevents grating from shifting on supports. Holds pieces together with or without clearance between panels. All bolts are below top surface of grating. No holes are drilled in supporting members. Assembly consists of anchors plate, 2 J-bolts, nuts and washers; all electro zinc plated. Option: anchoring device can be cadmium plated on special order.

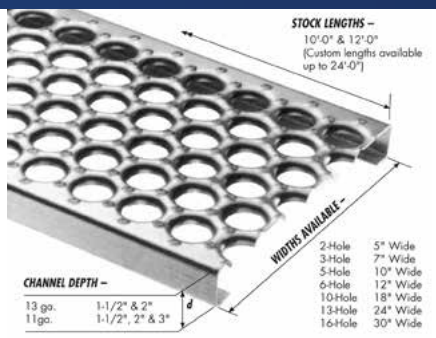
Diamond Anchor



Anchor and Clamp Assembly



PERFO GRIP® SAFETY GRATING



Perfo Grip® Grating has a unique surface of large debossed and perforated buttons provides maximum slip protection and performance under practically all conditions and in every direction. The resilient surface cushions the impact of foot-falls thereby lessening worker fatigue and increasing efficiency. Perfo Grip® Grating is one of your best safety buys. It cuts costs and helps Improve plant productivity.

Perfo Grip® Grating grips soles securely and in all directions providing a slip resistant surface that is ideal for inside or outside locations where mud, ice, snow, oil and detergents can create hazardous walking conditions. Light flow ice accumulation shears easily under normal foot pressure. The circular openings are 38% of surface area depending on product size and are small enough to catch most falling tools and other dangerous objects. Its self-cleaning open design permits quick drainage of fluids chips grease and mud while permitting ventilation. If desired it allows convenient access for cleaning with brush, liquid or air spray.

Perfo Grip® Grating high load capacity and long-life high strength-to-weight performance is achieved through depth of section and structural design. Formed struts with integral side channels form a plank that can support loads with minimum transverse and longitudinal deflection. This sturdy construction provides the advantages of heavy load-carrying capacity with minimal deflection rugged durability with longer-lasting performance.

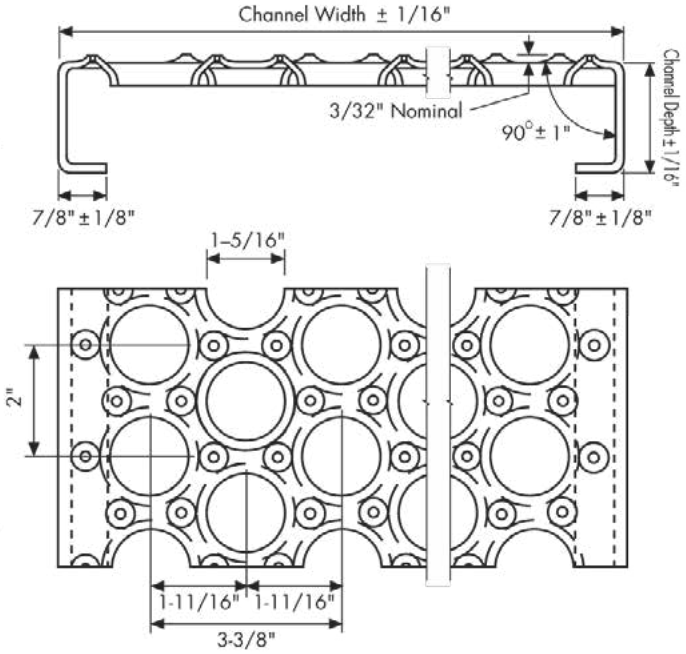
Installation is simple and quick due to light and easy-to-handle planks that can be handled by one person. Most sections are rapidly bolted, clamped or welded into place easily field cut at virtually and angle or fabricated to adapt to field conditions.

Perfo Grip® Grating is economical with its low material cost and nominal erection cost as well as saves with its long-lasting, rust resisting materials and finishes. Standard mill galvanized finish resists corrosion to provide lasting surfaces. High-strength aluminum, Type 316-2D and Type 304-2D stainless steels are available to provide maximum corrosion resistance. Black unpainted steel available for those installations requiring paint. Lightweight but brawny panels permit substantial reduction in structural steel requirements.

Perfo Grip® comes in a variety of standard widths and channel heights that are available as well as numerous non-standard shapes and sizes to meet almost any requirements of strength size durability weight finish appearance and application. It combines safety and durability with ease while minimizing the need for field fabrication. Special shapes and forming can be accomplished to suit unusual requirements. Perfo Grip® Grating may be hot dipped galvanized after fabrication anodized placed. Plastic-coated or other wise finished to suit job requirements. Standard Perfo Grip® Plank is available in materials and sizes to meet most load/span requirements and may be used as is or banded, cut, welded or notched to suit requirements.

Materials

- Pre-Galvanized Steel ASTM A-924-G90 13 & 11 gauge
- HRPO Uncoated Steel ASTM A-569 13 & 11 gauge
- 5052-H32 Aluminum .125 gauge
- 304 Stainless Steel 16 & 14 gauge



Perfo Grip® Fasteners

Bolt Seats - provide a secure anchor of the grating to structural supports. The standard bolt seal features oblong holes specifically designed to ensure a vertical anchor (with a 3/8" both even it the hole is off concentrically by as much as ¼" Perfo Grip® Double Bolt Seats are available to maximize the attachment location flexibility by providing approximately 2" of longitudinal adjustment Available in galvanized steel aluminum and stainless steel. Hardware is not provided.

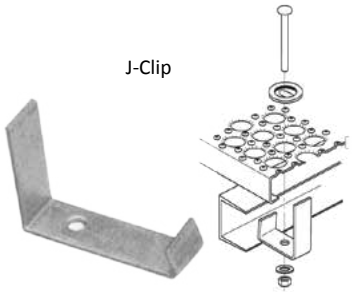
Mid-Clip - Midsupport clips can used at midspan to increase load carving capacities of individual channels by fastening several planks together to form an integral section. The Midsupport Clip is manufactured from galvanized steel and includes two bolts.

J-Clip - fasten the grating securely to the supporting steel without drilling holes. Standard finish is galvanized Hardware is not provided.

Bolt Seats

Mid-Clip

J-Clip



GRATE-LOCK® INTERLOCKING SAFETY GRATING

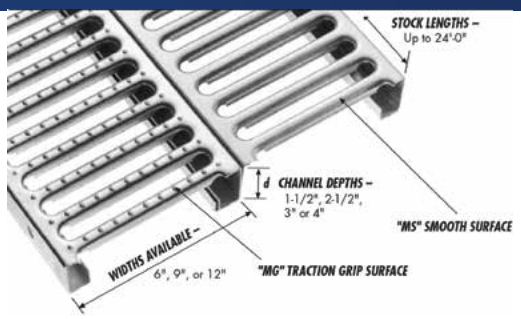
Grate-Lock® Grating is an easy-to-install system of interlocking grating planks, treads and accessories that provides safe, sturdy footing for mezzanine floors, platforms, walkways and other applications where nonslip performance is required. Hundreds of sole-gripping dimples insure a safe surface in all kinds of weather and environments. The grating is available textured for safer working surfaces, non-textured for wheeled traffic or rack decking.

The unique design of Grate-Lock® Grating gives you more design options at less cost than other grating systems. Increased load performance (see charts) has been achieved through interlocking planks, stronger rung design and an expanded selection of leg heights and material gauges. Grate-Lock® Grating lets you specify lighter gauge steel for substantial material saving.

Grate-Lock® Grating provides the broadest line products of any manufacturer. Available in three plank widths, four plank heights, three gauges and lengths to 24'. Interlocking sections provide the strength you need for extra-wide designs.

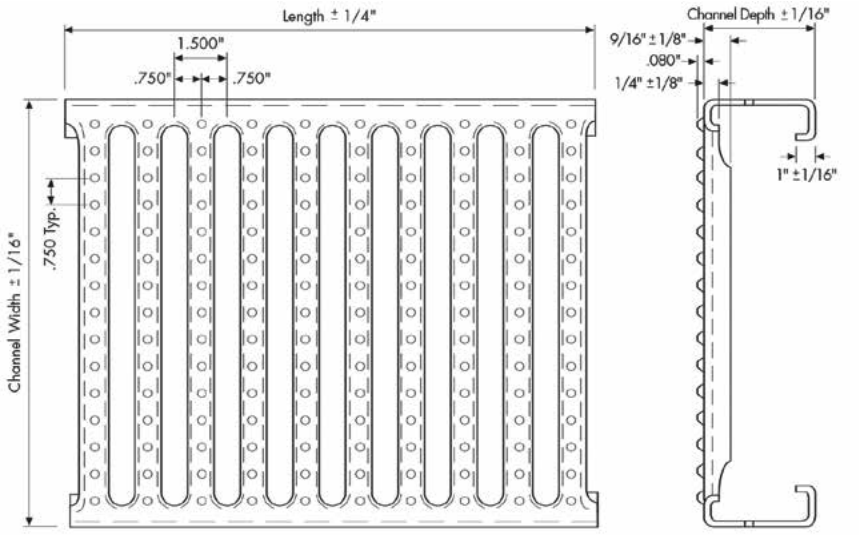
Bolt-together slotted assemblies saves time in the field. Kickplates and plank sections are pre-punched. For additional ease, planks can be straight, curved or angle cut with hand tools. Our line includes kickplates, hold-down clamps, attachment hardware and stair treads for complete job design.

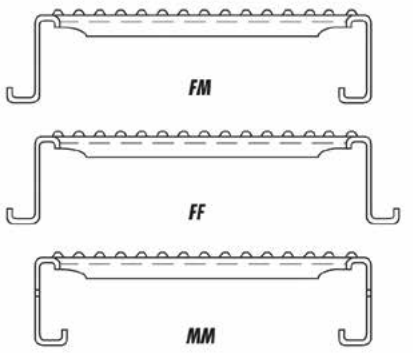
We have constructed our load tables using the most stringent interpretation of the AISI standards: Our safe allowable loads guard against harmful local distortion as well as failure. Some manufacturers have prepared allowable load tables guarding against failure only.



Materials

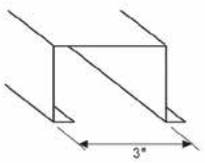
- Pre-Galvanized Steel ASTM A-924-G90 14, 16 & 18 gauge
- HRPO Uncoated Steel ASTM A-569 14, 16 & 18 gauge





Solid Filler Plank

Solid surface 3" wide plank In male/female profile. Ideal for closing non-incremental Platform widths.

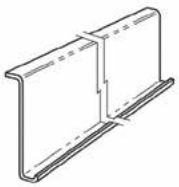


System Components

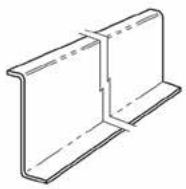
Item	Height
Side Kickplate (14 Ga.) 12-Ft. Lengths	6-1/2" 7" 8"
End Kickplate (14 Ga.) 12-Ft. Lengths	6-1/2" 7" 8"
Kickplate Clip	--
Hold-Down Clamp	2-1/2" 3" 4"
J-Bolt	2-1/2"
Tapscrew (self-drilling)	1"
3/8" Hex Head Bolt with Nut & Washer	1"

Grate-Lock® Fasteners

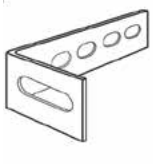
Side Kick Plate



End Kick Plate

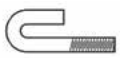


Kick Plate Clip



Hold Down Clamp

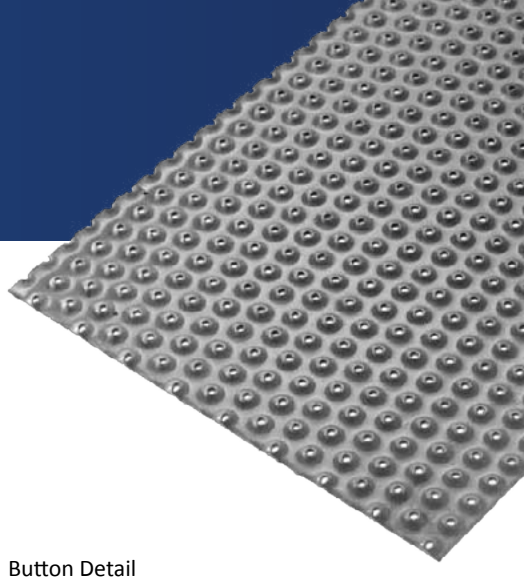
J-Bolt



Tap Screw (self drilling)

Hex Head Bolt

SAFETY FLOORING AND LADDER RUNGS



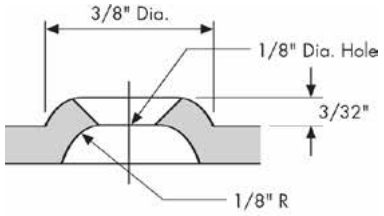
Tread Grip® Flooring

Tread Grip® Flooring features a surface with hundreds of perforated buttons that provide slip resistance in all directions making it a practical choice for industrial applications. It is also appropriate for commercial applications where pedestrian traffic is a consideration, perfectly suited for ADA-compliant requirements. It is easily adapted for a multitude of applications, offering a safe walking-working surface for walkways, ramp, stair treads and equipment platforms. Tread Grip® is ideal for the manufacture of special and fabricated products, and is often used as reconditioning material over existing surfaces that do not provide slip-resistance. Tread Grip® Flooring is readily available in 3'-0" x 10'-0" stock sheets designed for secondary fabrication requirements.

Stock List

Thickness	Weight / Sf.
HPRO Carbon Steel	
11 gauge 13 gauge 16 gauge	5.0 3.8 2.5
Pre-Galvanized Steel	
11 gauge 13 gauge 16 gauge	5.0 3.8 2.5
Aluminum Alloy 5052 – H-32	
.125	1.6
304 Stainless Steel	
16 gauge	2.7

Button Detail



Materials

- 11, 13 or 16 gauge HRPO
- 11, 13 or 16 gauge Pre-Galvanized Carbon Steel
- 125 Aluminum Alloy 5052-H32
- 304 Stainless Steel
- Standard Sheet Size 36" x 120" (or cut to order)

Custom Surface Variation Designs

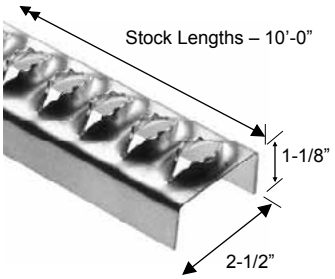
Star Pattern

In-Line Pattern

Chevron Pattern

Safety Grating Ladder Rungs

Grip Strut® Ladder Rungs



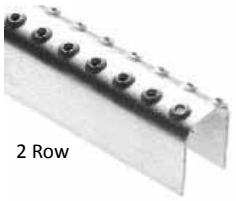
Materials

- 14 gauge Pre-Galvanized
- HRPO Steel
- Weight 1.13 lbs./ft.

Load Data - Safety Factor 1.5						
Span						
	16"	18"	20"	24"	30"	36"
C D	528 0.58	469 .074	422 .092	352 .132	281 .206	234 .297

C – Concentrated Load (lb.), D – Deflection (in.)
Values are based on concentrated load placed at mid-span

Tread Grip® Ladder Rungs



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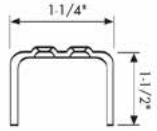

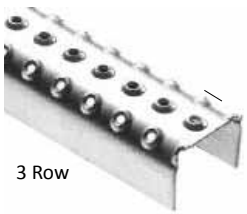

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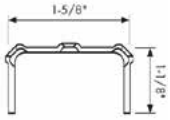

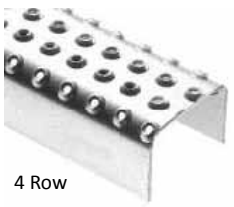

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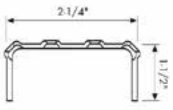


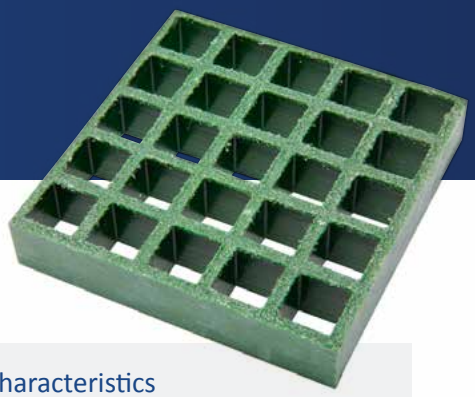
Materials

- 13 gauge HPRO Carbon Steel
- 3 gauge Pre-Galvanized
- .125 5052 – h-32 Aluminum
- 304 Stainless Steel
- Stock Lengths 60" (or cut to length)

Stock List

Width	Weight / Sf.
HPRO Carbon Steel	
1-1/4" (2 row) 1-5/8" (3 row) 2-1/4" (4 row)	1.2 1.3 1.5
Pre-Galvanized Steel	
1-1/4" (2 row) 1-5/8" (3 row) 2-1/4"" (4 row)	1.2 1.3 1.5
Aluminum Alloy 5052 – H-32	
1-1/4" (2 row) 1-5/8" (3 row) 2-1/4" (4 row)	0.5 0.5 0.7
304 Stainless Steel	
1-5/8" (3 row) 2-1/4" (4 row)	1.0 1.1

MOLDED FIBERGLASS GRATING



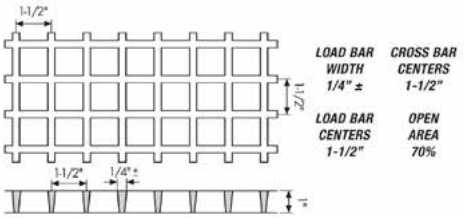
Molded Fiberglass Grating is designed to provide the ultimate in reliable performance, even in the most demanding conditions. This advanced grating is proven superior in applications requiring bidirectional strength, corrosion resistance and long, maintenance free life. Available in either standard concave or optional grit top walking surfaces.

Molded Grating offers out-standing skid-resistance for added worker safety. Molded grating is available in either square or rectangular mesh, providing optimal customer selection. A premium product. Molded grating combines fiberglass rovings with thermosetting resin to form a strong, one piece molded panel. Significantly lighter than metallics. Molded Grating is easy to install. The square mesh pattern of molded grating allows efficient cutting of the panels so that a variety of flooring layouts can be accommodated with a minimum of grating waste. Rectangular mesh molded is often used for walkways and trench covers in many industrial applications.

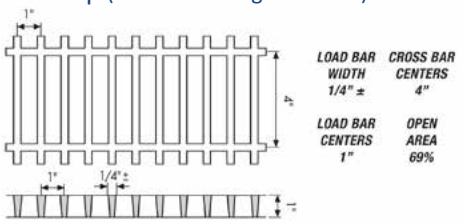
Characteristics

- Corrosion Resistant
- Impact Resistant
- Maintenance Free
- Lightweight
- Skid Resistant
- Long Service Life
- UV Resistant
- Non Conductive
- Easy to Install
- Easy to Fabricate
- UL Classified

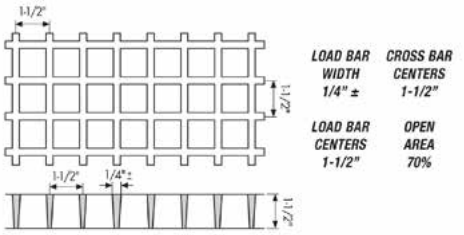
1” Deep (1-1/2” x 1-1/2” Square Mesh)



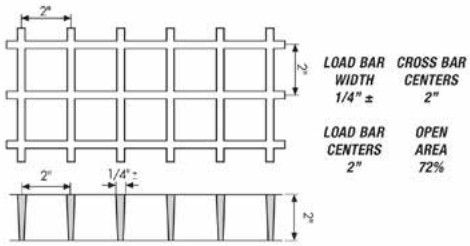
1” Deep (1” x 4” Rectangular Mesh)



1 - 1/2” Deep (1-1/2” x 1-1/2” Square Mesh)



2” Deep (2” x 2” Square Mesh)



Resin Systems

V.E. (Orange or Gray) - A superior resin, V.E. was developed for reliable performance in the toughest environments. This resin system formulation is the most chemically-resistant available today, offering outstanding resistance to a wide range of highly corrosive environments, ranging from caustic to acidic,. In fact, no other resin system can match V.E. performance in highly acidic environments. Offers an ASTM E-84 flame spread rating of 1.5 or less.

ISO (Green) - ISO is designed for industrial and chemical processing applications where corrosion resistance is important. This isophthalic polyester resin formulation offers a flame spread rating of 20 or less per ASTM E-84.

FGI (Light Gray) - USDA - accepted for food processing applications, this isophthalic polyester resin system meets the unique requirements of the food and beverage industry. FGI carries a flame spread rating of 20 or less.

GP (Yellow, Green or Gray) - An economical polyester grating. GP outperforms a number of competitive fiberglass products and meets the requirements for corrosion resistance found in light industrial and water/ wastewater applications. This grating also offers a low flame spread rating of 25 or less.

Phenolic (Reddish -Brown) - Best choice for applications where fire resistance, low smoke, and low toxic fume emissions are critical. Typical applications include: offshore & onshore oil refineries, tunnels, ships, and train decks.

Clip Assemblies

We offer specially designed attachments and clips that both fasten panels together and to secure them to support structures. All clips are made of type 316 Stainless Steel and are available in 1”, 1-1/2” and 2” sizes.

Type M Hold Down Clips - used to secure panels to a support using two adjacent grating bars for a secure fit.

Type L Hold Down Clips - for use in securing grating panels to support frames.

Type G Hold Down Clips - designed to attach grating to any structural member flange, 3/4” or smaller in thickness, with no drilling required.

Type C End Panel Clips - provides a simplified method for joining side bars of panels that are butted end to end.

Type W - designed to secure covered grating or FiberPlate to a structure.

Type M

Type L

Type G

Type C

Type W

PULTRUDED FIBERGLASS GRATING

Pultruded Fiberglass Grating provides performance far exceeding that of alternative products with a comparable installed cost. This advanced fiberglass grating is designed for use in a wide range of applications that require strength and corrosion resistance. It is manufactured with a high percentage of glass within the laminate. Pultruded grating combines durability with the highest strength and stiffness available in fiberglass grating. Pultruded grating can be used with confidence in applications where wide support spans are required. Using both a mechanical and chemical lock, pultruded grating is manufactured with a two-piece cross bar configuration which increase the panels support and stability under load. The standard grit-top walking surface provides sure footing and a protective synthetic veil, covering the exterior surface of the load bearing bars allows the grating to reliably withstand constant exposure to ultraviolet rays.

Resin Systems

Pultruded Grating is available in two resin formulations for an accurate match of product characteristics with the application. Both resin systems provide corrosion resistance that is superior to that offered by metal grating.

ISOFR (Yellow) - This isophthalic polyester resin formulation provides a low flame spread rating of 25 or less and is designed for applications where there is moderate exposure to corrosive elements.

VEFR (Gray) - With a flame spread of 25 or less, this vinyl ester resin system provides dependable resistance to both acidic and alkaline environments.

Phenolic (Reddish brown) - Best choice for applications where fire resistance, low smoke, and low toxic fume emissions are critical. Typical applications: offshore & onshore oil refineries, tunnels, ships, and train decks.

Characteristics

- High Stiffness
- Maintenance Free
- Non Conductive
- Corrosion Resistant
- Skid Resistant
- Lightweight
- UV Resistant

Stock Panel Sizes

	Style No.	Grating Depth	Weight Lbs./ Sq. Ft.	Width of Top Flange	Width of Open Area	% Open Aera	Resins / (Color) Available
Industrial Duty "I" Series							
	I-6010	1"	2.4	0.6"	.900"	60%	ISOFR (Yellow) & VEFR (Gray)
	I-4010	1"	3.5	0.6"	.400"	40%	ISOFR (Yellow) & VEFR (Gray)
	I-6015	1-1/2"	2.9	0.6"	.900"	60%	ISOFR (Yellow) & VEFR (Gray)
	I-4015	1-1/2"	4.2	.06"	.400"	40%	ISOFR (Yellow) & VEFR (Gray)
Industrial Duty "T" Series							
	T-5020	2"	3.1	1.0"	1.00"	50%	ISOFR (Yellow) & VEFR (Gray)
	T-3320	2"	4.0	1.0"	.500"	33%	ISOFR (Yellow) & VEFR (Gray)
Light Duty "T" Series							
	T-1210	1"	2.6"	1.5"	.214"	12.5%	ISOFR (Light Gray)
	T-2510	1"	2.3	1.5"	.500"	25%	ISOFR (Gray)
	T-3810	1"	1.9	1.5"	.900"	38%	ISOFR (Gray)
	T-5010	1"	1.6	1.0"	1.00"	50%	VEFR (Gray)
	T-5015	1-1/2"	1.9	1.0"	1.00"	50%	VEFR (Gray)

To properly specify "I" and "T" series pultruded grating, simply add "-I" for ISOFR resin or "-V" VEFR resin to the catalog numbers shown above examples: I-6015-V, T-3320-I

"I" Series

"T" Series

Light Duty "T" Series

Clip Fasteners

Type M Hold Down Clamps - 316 stainless steel clips used to secure panels to a support using two adjacent grating bars for a secure fit.

Type G Hold Down Clamps - stainless steel clips designed to attach grating to any structural member flanges, 3/4" or smaller in thickness. (no drilling required)

Type T Hold Down Clamps - for below the pultruded fiberglass grating surface attachment and should be specified in pairs as shown.

Type J Hold Down Clamps - specified to hold one fiberglass grating load bar to the support for lighter duty loads.

Type M

Type G

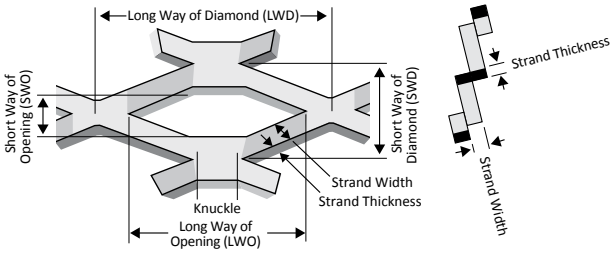
Type T

Type J

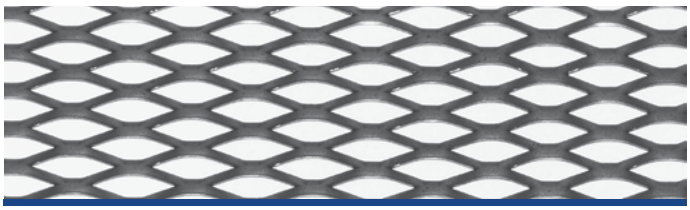
EXPANDED METAL

Regular Expanded Metal

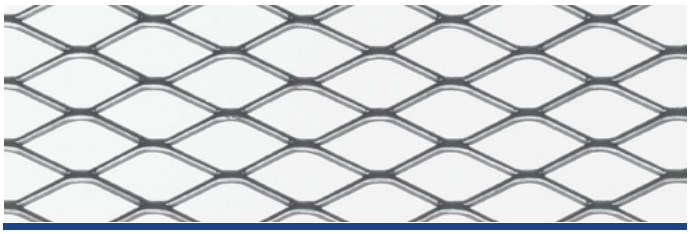
Regular Expanded Metal is an open mesh, finished product that is simultaneously die-cut and expanded as it moves through progressive dies on a press. In the expanding process, the metal can be expanded up to ten times its original size, lose up to 80% of its original weight per square foot, and still retain form and rigidity. (Also referred to as "Raised" or "Standard" Expanded Metal.)



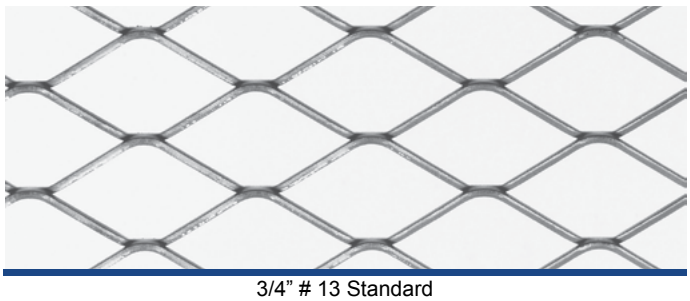
Pattern shown is actual size:



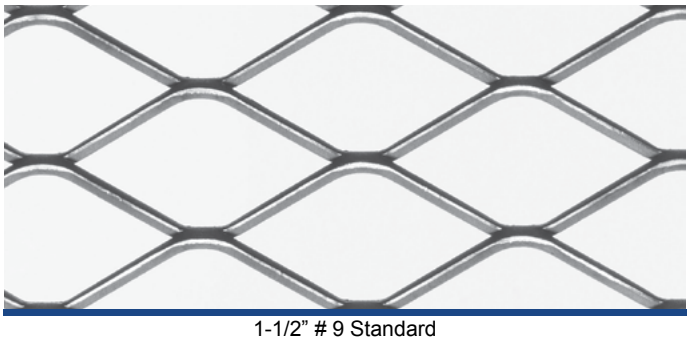
1/4" # 18 Standard



1/2" # 16 Standard



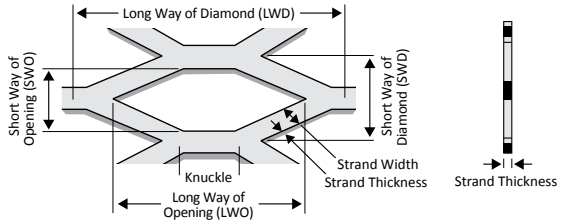
3/4" # 13 Standard



1-1/2" # 9 Standard

Flattened Expanded Metal

Flattened Expanded Metal is Regular Expanded Metal that has been passed through flattening rolls (cold rolled). This rolling process reduces the thickness of the sheet, stretches the pattern of the sheet, and provides a smooth flat finish that is about five percent lighter.



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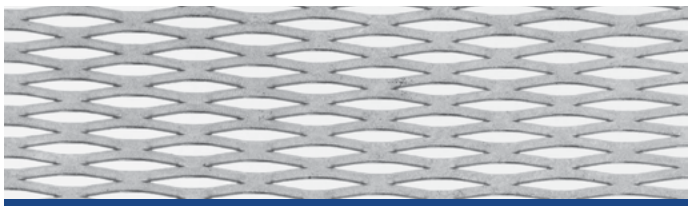
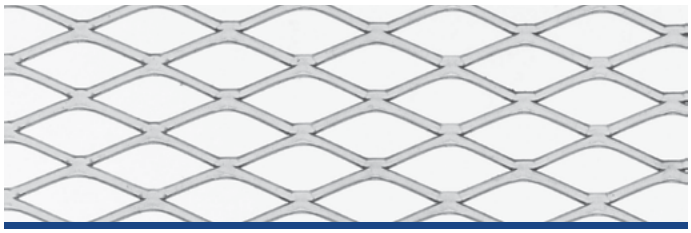
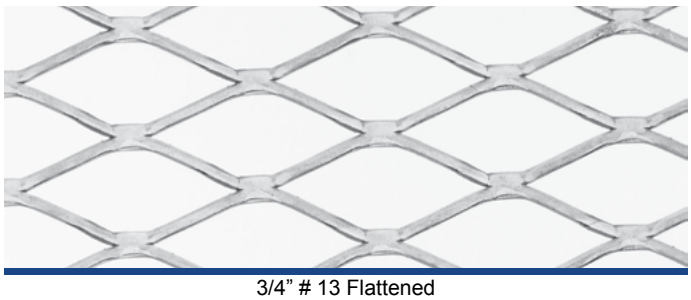


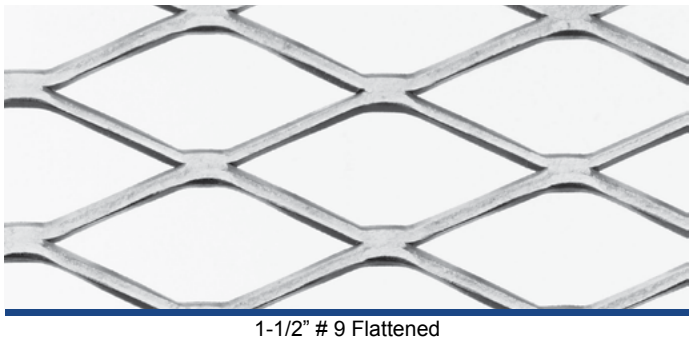
1/4" # 18 Flattened



1/2" # 16 Flattened



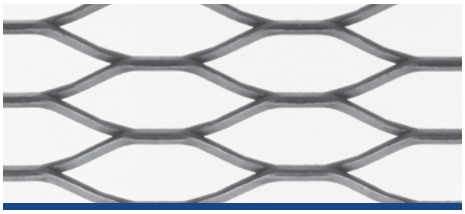
3/4" # 13 Flattened



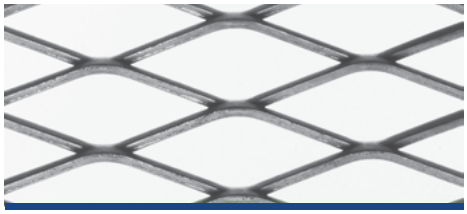
1-1/2" # 9 Flattened

Style No.	Weight Per Sq. Ft. (Pounds)	Design Size Center-to-Center (Inches)		Size of Opening (Inches)		Strand Size (Inches)		Gauge Used	Overall Thickness (Inches)	Percent Open Area
		SWD	LWD	SWO	LWO	THICKNESS	WIDTH			
Carbon Steel - Regular										
1/4" - #20 R	0.86	0.255	1.000	11/64	23/32	0.036	0.073	20	0.125	45%
1/4" - #18 R	1.14	0.255	1.000	11/64	23/32	0.048	0.073	18	0.125	45%
1/2" - #20 R	0.48	0.500	1.200	7/16	15/16	0.036	0.070	20	0.124	60%
1/2" - #18 R	0.70	0.500	1.200	3/8	15/16	0.048	0.088	18	0.155	71%
1/2" - #10 R	0.86	0.500	1.200	23/64	15/16	0.060	0.088	16	0.157	71%
1/2" - #13 R	1.46	0.500	1.200	11/32	15/16	0.090	0.093	13	0.182	58%
3/4" - #16 R	0.54	0.920	2.000	13/16	1-3/4	0.060	0.092	16	0.186	85%
3/4" - #13 R	0.80	0.925	2.000	3/4	1-11/16	0.090	0.096	13	0.195	78%
3/4" - #10 R	1.20	0.925	2.000	3/4	1-3/8	0.090	0.144	13	0.282	77%
3/4" - #9 R	1.80	0.925	2.000	3/4	1-1/2	0.134	0.148	10	0.300	68%
1-1/2" - #16 R	0.40	1.330	3.000	1-1/4	2-5/8	0.060	0.108	16	0.211	89%
1-1/2" - #13 R	0.60	1.330	3.000	1-3/16	2-1/2	0.090	0.107	13	0.215	86%
1-1/2" - #9 R	1.20	1.330	3.000	1-3/16	2-1/2	0.090	0.140	10	0.295	75%
1-1/2" - #6 R	2.45	1.330	3.000	1-1/16	2-1/4	0.200	0.200	3/16	0.425	63%
Carbon Steel - Flattened										
1/4" - #20 F	0.84	0.258	1.050	3/32	25/32	0.030	0.086	20	0.030	35%
1/4" - #18 F	1.12	0.258	1.050	3/32	25/32	0.040	0.085	18	0.040	35%
1/2" - #20 F	0.40	0.500	1.250	3/8.	1	0.030	0.074	20	0.029	65%
1/2" - #18 F	0.66	0.500	1.250	9/32	1	0.040	0.095	18	0.039	60%
1/2" - #16 F	0.80	0.500	1.250	1/4	1	0.050	0.100	16	0.050	60%
1/2" - #13 F	1.38	0.500	1.250	1/4	1	0.070	0.120	13	0.070	57%
3/4" - #16 F	0.50	0.925	2.100	3/4	1-3/4	0.048	0.112	16	0.048	74%
3/4 "- #14 F	0.65	0.925	2.100	11/16	1-13/16	0.063	0.115	14	0.061	73%
3/4" - #13 F	0.75	0.925	2.100	11/16	1-25/32	0.070	0.120	13	0.070	73%
3/4" - #10 F	1.14	0.923	2.100	5/8	1-3/4	0.070	0.160	13	0.700	68%
3/4" - #9 F	1.70	0.923	2.100	5/8	1-11/16	0.118	0.160	10	0.110	65%
1-1/2" - #16 F	0.38m	1.330	3.200	1.063	2-3/4	0.048	0.123	16	0.048	82%
1-1/2" - #13 F	0.57	1.330	3.200	1.063	2-3/4	0.070	0.138	13	0.070	80%
1-1/2" - #9 F	0.42	1.080	2.560	7/8	2-1/4	0.048	0.115	16	0.048	78%
1-1/2" - #16 F	0.37	1.330	3.200	1-1/16	2-3/4	0.050	0.120	16	0.048	82%
1-1/2" - #13 F	0.56	1.330	3.200	1-1/16	2-3/4	0.070	0.130	13	0.070	80%
1-1/2" - #9 F	1.12	1.330	3.200	1.00	2-5/8	0.110	0.165	10	0.110	77%
2" - #9 F	0.81	1.330	4.360	1.45	3-11/16	0.134	0.150	10	0.280	83%
Aluminum - Regular										
1/2" - .051 R	0.26	0.500	1.200	3/8	15/16	0.050	0.050	16B&S	0.158	70%
1/2" - .081 R	0.46	0.500	1.200	3/8	15/16	0.080	0.080	12B&S	0.186	60%
3/4" - .051 R	0.17	0.920	2.000	13/16	1-3/4	0.050	0.050	16B&S	0.200	90%
3/4" - .081 R Lt	0.32	0.920	2.000	3/4	1-11/16	0.080	0.080	12B&S	0.220	76%
3/4" - .080 R Hw	0.41	0.920	2.000	3/4	1-11/16	0.080	0.080	12B&S	0.300	74%
3/4" - .125 R	0.65	0.920	2.000	11/16	1-11/16	0.125	0.125	8B&S	0.305	66%
1-1/2" - .081 R	0.16	1.330	3.000	13/16	2-1/2	0.063	0.063	14B&S	0.240	87%
1-1/2" - .125 R	0.42	1.330	3.000	13/16	2-1/2	0.125	0.125	8B&S	0.300	78%
Aluminum - Flattened										
1/2" - .051 F	0.26	0.500	1.250	5/16	1.00	0.040	0.100	16B&S	0.048	64%
1/2" - .081 F	0.40	0.500	1.250	5/16	1.00	0.060	0.108	12B&S	0.060	59%
3/4" - .051 F	0.16	0.920	2.130	3/4	1-13/16	0.040	0.130	16B&S	0.040	76%
3/4" - .081 F Lt	0.30	0.920	2.130	11/16	1-3/4	0.070	0.140	12B&S	0.070	72%
3/4" - .080 F Hw	0.38	0.920	2.130	11/16	1-3/4	0.070	0.180	12B&S	0.070	65%
3/4" - .125 F	0.62	0.920	2.130	5/8	1-3/4	0.095	0.198	8B&S	0.095	63%
1-1/2" - .081 F	0.20	1.330	3.135	1-1/16	2-3/4	0.058	0.168	12B&S	0.060	77%
1-1/2" - .125 F	0.40	1.330	3.135	1.00	2-3/4	0.080	0.218	8B&S	0.080	70%
Stainless Steel - Regular										
1/4" - #18 S	1.47	0.250	1.000	1/8	5/8	0.050	0.087	18	0.300	30%
1/2" - #18 S	0.75	0.500	1.200	7/16	15/16	0.050	0.088	19	0.164	77%
1/2" - #16 S	0.94	0.500	1.200	7/16	15/16	0.062	0.088	16	0.164	70%
1/2" - #13 S	1.88	.0500	1.200	5/16	7/8	0.093	0.120	13	0.225	58%
3/4" - #16 S	0.62	0.925	2.000	13/16	1-3/4	0.062	0.108	16	0.200	85%
3/4" - #13 S	0.93	0.925	2.000	3/4	1-1/16	0.093	0.110	13	0.200	78%
3/4" - #9 S	2.05	0.925	2.000	11/16	1-1/2	0.140	0.160	10	0.300	67%
1-1/2" - #16 S	0.45	1.335	3.000	1-1/4	2-3/4	0.062	0.116	16	0.220	89%
1-1/2" - #9 S	1.37	1.330	3.000	1-1/4	3-5/8	0.140	0.155	10	0.280	75%
Stainless Steel - Flattened										
1/4" - #18 F	1.43	0.250	1.000	5/64	21/32	0.047	0.090	18	0.047	29%
1/2" - #18 F	0.70	0.500	1.275	5/16	1.00	0.040	0.099	18	0.040	68%
1/2" - #16 F	0.88	0.500	1.275	5/16	1.00	0.050	0.099	16	0.050	60%
1/2" - #13 F	1.78	.0500	1.275	1/4	1.00	0.080	0.099	13	0.080	56%
3/4" - #18 F	0.48	0.925	2.100	3/4	1-13/16	0.050	0.126	16	0.050	75%
3/4" - #13 F	0.59	0.925	2.100	5/8	1-3/4	0.080	0.120	13	0.080	74%
3/4" - #9 F	0.88	0.925	2.100	5/8	1-5/8	0.130	0.170	10	0.119	64%
1-1/2" - #16 F	0.43	1.335	3.150	1-1/16	2-3/4	0.050	0.128	16	0.050	83%
1-1/2" - # 13 F	0.68	1.335	3.150	1.00	2-5/8	0.080	0.126	13	0.080	79%
1-1/2" - # 9 F	1.35	1.335	3.150	1.00	2-1/2	0.130	0.170	10	0.119	76%

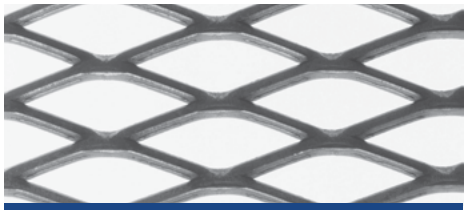
Grating Styles



2.0 lb., 3.0 lb., 4.0 lb., 5.0 lb., 6.25 lb., 7.0 lb.



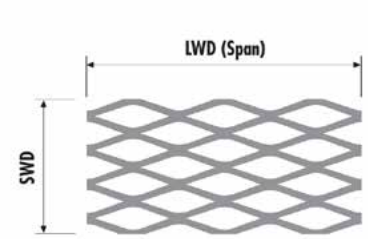
3.14 lb.



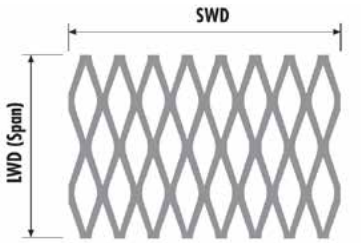
4.27 lb.

Expanded Metal Catwalk Grating

When considering lightweight economical catwalk alternatives consider reverse flow Expanded Metal Catwalk Grating. Manufactured with the LWD spanning the width (short dimension) of the sheet Catwalk Grating is commonly stocked 2'-0. 2'-6 and 4'-0 wide sheets. These products can often be installed on walkways without waste or additional shearing charges.



STANDARD FLOW EXPANDED METAL GRATING



REVERSE FLOW EXPANDED METAL CATWALK GRATING

Expanded Metal Grating Load Table

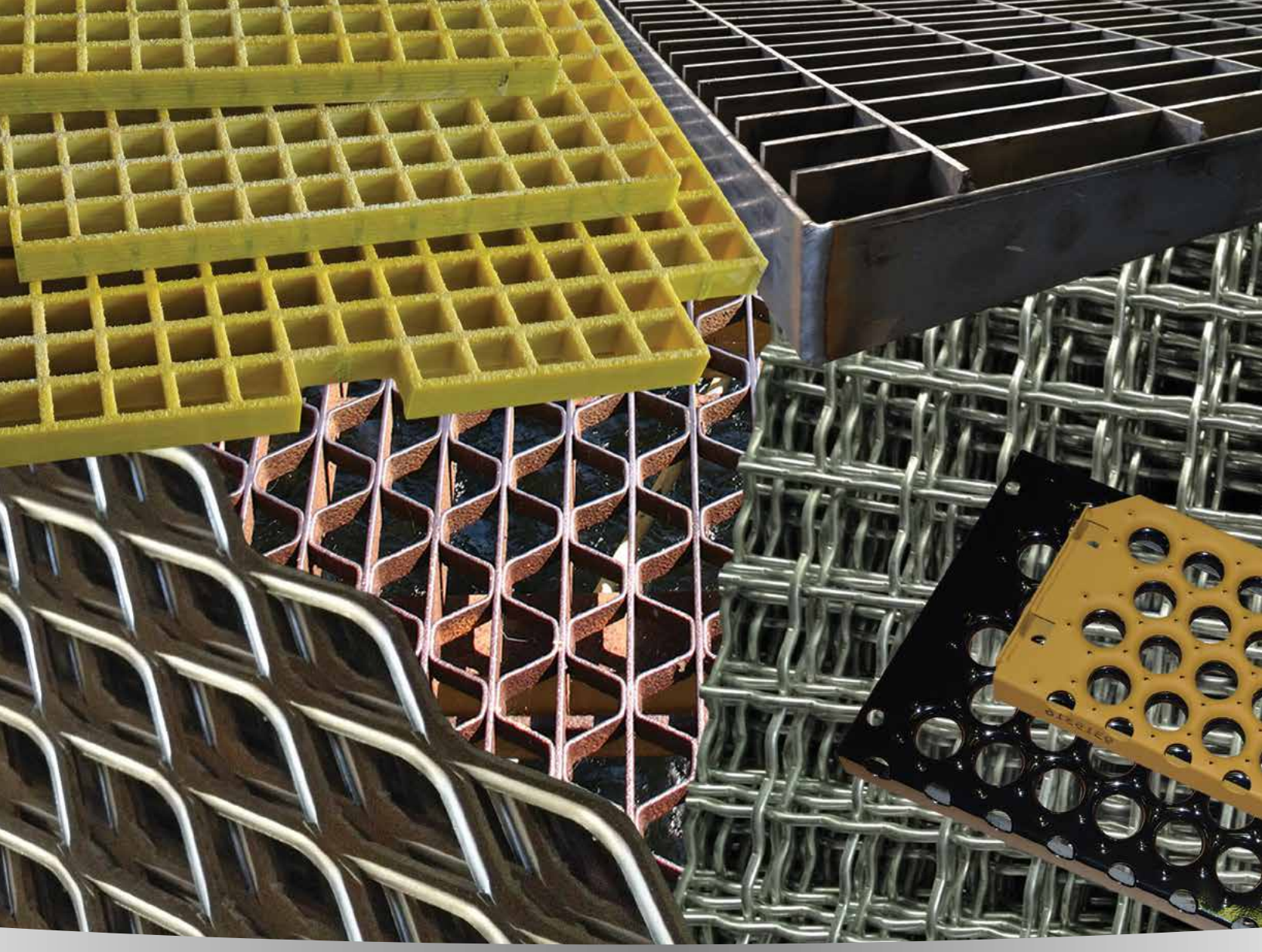
Grating Style	Clear Span	Load Cond.	Load In Pounds 50	100	200	300	500
3.0# Carbon Steel	2'-0"	U	.076	.146	.293	.440	
		C	.068	.132	.263	.395	
	2'-6"	U	.155	.311			
		C	.116	.228			
	3'-0"	U	.330	.660			
		C	.192	.380			
3.14# Carbon Steel	2'-0"	U	.057	.115	.230	.346	
		C	.049	.094	.187	.280	
	2'-6"	U	.129	.259	.517		
		C	.099	.198	.395		
	3'-0"	U	.315	.626			
		C	.180	.357			
4.0# Carbon Steel	2'-0"	U	.37	.073	.147	.222	.370
		C	.031	.064	.128	.192	.320
	2'-6"	U	.068	.135	.274	.110	
		C	.060	.120	.240	.360	
	3'-0"	U	.180	.358			
		C	.101	.205			
4.27# Carbon Steel	2'-0"	U	.038	.079	.160	.210	.400
		C	.038	.078	.156	.235	.395
	2'-6"	U	.078	.156	.312	.470	
		C	.081	.163	.327	.491	
	3'-0"	U	.186	.373			
		C	.124	.250			

Grating Style	Clear Span	Load Cond.	Load In Pounds 50	100	200	300	500
5.0# Carbon Steel	2'-0"	U	.025	.050	.100	.150	.250
		C	.023	.047	.093	.140	.234
	3'-0"	U	.133	.265	.526		
		C	.078	.154	.305		
	4'-0"	U	.355	.708			
		C	.155	.306			
6.25# Carbon Steel	2'-0"	U	.017	.035	.072	.110	.181
		C	.015	.030	.060	.090	.150
	3'-0"	U	.002	.184	.368	.552	
		C	.054	.108	.216	.324	
	4'-0"	U	.285	.576			
		C	.117	.236			
7.0# Carbon Steel	2'-0"	U	.039	.079	.157	.236	.392
		C	.030	.061	.121	.382	.303
	3'-0"	U	.085	.170	.336	.501	
		C	.051	.101	.201	.301	
	4'-0"	U	.210	.420			
		C	.095	.190			
2.0# Aluminum	2'-0"	U	.047	.094	.189	.253	
		C	.016	.092	.181	.277	
	3'-0"	U	.108	.216			
		C	.092	.181			
	4'-0"	U	.213	.430			
		C	.125	.255			

Loads and values are based upon physical testing conducted by an independent testing laboratory. Clear span is the distance between supporting members measured from the inside point of support of one member to the inside point support of the next supporting member. Load Conditions: U = Uniform Load per square foot. C = Concentrated Load per foot width perpendicular to SWD. Values indicated represent detection based upon load conditions, clear span and indicated.

Expanded Metal Grating Specifications

Grating Style	Weight Per Sq. Ft. (Pounds)	Design Size Center-to-Center (Inches) SWD	LWD	Size of Opening (Inches) SWO	LWO	Strand Size (Inches) THICKNESS	WIDTH	Overall Thickness (Inches)	Percent Open Area
Carbon Steel Expanded Metal Grating									
3.0#	3.00	1.33	5.33	0.94	3.44	0.183	0.264	0.540	73%
3.14#	3.14	2.00	6.00	1.63	4.88	0.250	0.312	0.656	74%
4.0#	4.00	1.33	5.33	0.94	3.44	0.215	0.300	0.618	65%
4.27#	4.27	1.41	4.00	1.00	2.88	0.250	0.300	0.625	58%
5.0#	5.00	1.33	5.33	0.81	3.38	0.215	0.375	0.655	52%
6.25#	6.25	1.41	5.33	0.81	3.38	0.312	0.350	0.715	55%
7.0#	7.00	1.41	5.33	0.81	3.38	0.312	0.388	0.750	60%
Carbon Steel Expanded Metal Catwalk Grating									
3.0#	3.00	1.33	5.33	0.94	3.44	0.183	0.264	0.540	73%
Aluminum Alloy 5052-H32 Expanded Metal Grating									
2.0#	2.00	1.33	5.33	0.94	3.44	0.250	0.387	0.730	77%
Stainless Steel Type 304 Expanded Metal Grating									
4.5#	4.50	1.4	4.00	1	2.88	0.250	0.300	0.630	58%



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