



Designation: ~~F1267-07~~ Designation: **F1267 - 12**

Standard Specification for Metal, Expanded, Steel¹

This standard is issued under the fixed designation F1267; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope*

1.1 This specification covers expanded metal.

1.1.1 Expanded metal covered by this specification is intended for a variety of applications.

1.2 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only and may be approximate.

1.3 The following precautionary caveat pertains only to the test methods portion, Section 10.11, of this specification. *This standard does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*²

A123/A123M Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products

A167 Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip

A176 Specification for Stainless and Heat-Resisting Chromium Steel Plate, Sheet, and Strip

A240/A240M Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications

A666 Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar

A700 Practices for Packaging, Marking, and Loading Methods for Steel Products for Shipment

A1008/A1008M Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable

A1011/A1011M Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength

2.2 *SAE Standard:*³

SAE J 1086 Metals and Alloys in the Unified Numbering System

2.3 *Military Standards:*⁴

MIL-C-16173 Corrosion Preventive Compound, Solvent Cutback, Cold-Application

MIL-STD-105 Sampling Procedures and Tables for Inspection by Attributes

3. Terminology

3.1 Expanded Metal Terminology:

3.1.1 *bond, n*—the solid intersection of two strands.

3.1.2 *camber, n*—the bow of a side or edge from end to end from a straight line.

3.1.3 *diamonds, n*—open area of metal after expanding. Most expanded metal open area or patterns are uniform diamond shaped, but may also be hexagonal, louvered, asymmetric, square, or other shapes, or combinations thereof.

3.1.4 *edge configuration, n*—refers to the edge condition of a sheet may they be closed diamonds, or open diamonds produced by shearing.

3.1.5 *expanded metal, n*—a rigid sheet of metal that is simultaneously been slit and stretched creating an open diamond pattern.

¹ This specification is under the jurisdiction of ASTM Committee A01 on Steel, Stainless Steel and Related Alloys and is the direct responsibility of Subcommittee A01.19 on Steel Sheet and Strip.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from Society of Automotive Engineers (SAE), 400 Commonwealth Dr., Warrendale, PA 15096-0001, http://www.sae.org.

⁴ Available from Manufacturers Standardization Society of the Valve and Fittings Industry (MSS), 127 Park St., NE, Vienna, VA 22180-4602, http://www.mss-hq.com.

*A Summary of Changes section appears at the end of this standard.

- 3.1.6 *flattened, v (F)*—expanded metal that has been cold-rolled after expansion.
- 3.1.7 *flattening, adv*—the process of producing flattened expanded metal.
- 3.1.8 *grating, n*—expanded metal that is produced from heavier sheet.
- 3.1.9 *levelness, n*—(flatness of sheet), sheets shall be free from waves or buckets that are in excess of 1–1/2 in. from a plane surface.
- 3.1.10 *LWD, n*—nominal dimension, Long Way of the Diamond.
- 3.1.11 *LWO, n*—Long Way of the Opening.
- 3.1.12 *regular-raised-standard, n*—(R) expanded metal as it comes from the press. The strands and bonds are set at a uniform angle to the plane of the sheet.
- 3.1.13 *SWD, n*—nominal dimension, Short Way of the Diamond.
- 3.1.14 *SWO, n*—Short Way of the Opening.
- 3.1.15 *shearing, n*—cutting the sheet to a specific size or tolerance.
- 3.1.16 *squareness, n*—the dimensional variance a side and edge are out of square.
- 3.1.17 *strand thickness, n*—thickness of the base metal
- 3.1.18 *strand thickness, n, and strand width, n*—can be varied to create different expanded metal products for different applications.
- 3.1.19 *strand width, n*—amount of material fed through top and bottom dies to produce one strand.
- 3.1.20 *taper, n*—edges of a sheet that deviates from parallel.

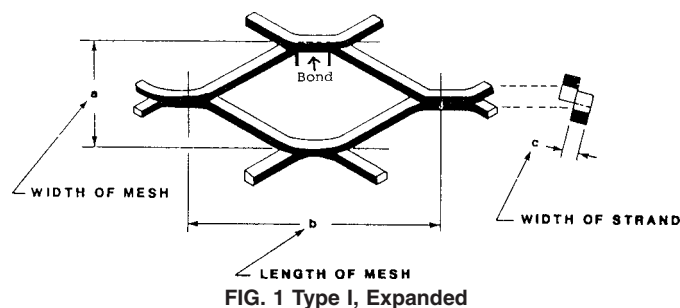
4. Classification

- 3.1
- 4.1 Expanded metal shall be of the following types, classes, and grades as specified (see 4.1.25.1.2).
- 3.2
- 4.2 *Type:*
 - 3.2.1
 - 4.2.1 *Type I*—Expanded (see Fig. 1).
 - 3.2.2
 - 4.2.2 *Type II*—Expanded and flattened (see Fig. 2).
- 3.3
- 4.3 *Class:*
 - 3.3.1
 - 4.3.1 *Class 1*—Uncoated.
 - 3.3.2
 - 4.3.2 *Class 2*—Hot-dip zinc-coated (galvanized). [ASTM F1267-12](https://standards.iteh.ai/catalog/standards/sist/f756e5ce-7048-4635-b8a2-754c9eda7df1/astm-f1267-12)
 - 3.3.3 <https://standards.iteh.ai/catalog/standards/sist/f756e5ce-7048-4635-b8a2-754c9eda7df1/astm-f1267-12>
 - 4.3.3 *Class 3*—Corrosion-resisting steel.
- 3.4
- 4.4 *Grade:*
 - 3.4.1
 - 4.4.1 *Grade A*—0.0025 in. (0.06 mm) minimum coating thickness.
 - 3.4.2
 - 4.4.2 *Grade B*—0.0012 in. (0.03 mm) minimum coating thickness.

4.

5. Ordering Information

45.1 Orders for material under this specification shall include the following information, as required, to describe the material adequately:



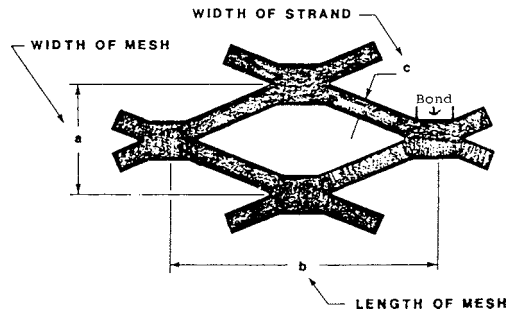


FIG. 2 Type II, Expanded and Flattened

- 4.1.1 ASTM designation,
- 4.1.2 Type, class, and grade of steel required (see 3.1.1),
- 4.1.3 Material required (see 5.1),
- 5.1.3 Material required (see 6.1),
- 4.1.4 Direction 5.1.4 Direction of shear, if not as specified (see 5.2.1),
- 4.1.5 Length, width, and thickness of uncoated mesh, and weight per square foot, uncoated (see Tables 1-6),
- 4.1.6
- 5.1.6 Size of sheet required, if other than sizes specified in 6.1.1,
- 4.1.7
- 5.1.7 Whether or not sheets from which samples have been selected for coating thickness test may be included as part of material shipped (see 9.1.1), and
- 4.1.8
- 5.1.8 Optional requirements, if any (see Supplementary Requirements S1 through S3).

5.

6. Materials and Manufacture

- 5.1
- 6.1 Expanded metal shall be made from Commercial Steel (CS Type B) carbon steel sheets as specified in Specifications A1008/A1008M or A1011/A1011M or from stainless steel sheets as specified in Specifications A167, A176, A240/A240M or A666.
- 5.2 Expanded metal shall be manufactured from sheet steel in thicknesses corresponding to Tables 1-6 as specified (see 4.1.5).
- 5.2.1 Unless otherwise specified (see 4.1.4), the steel shall be sheared so that each sheet will be expanded into uniform diamond-shaped openings, the longer diagonals of which shall be parallel to the rolling direction of the sheet. The strands (*c* on 6.2.1) Each opening shall be integral with adjoining openings by means of unsheared bonds (see Fig. 1 and Fig. 2) that form the sides of the openings shall be straight and shall be rectangular in cross-section. Each opening shall be integral with adjoining openings by means of unsheared bonds (see Fig. 1 and Fig. 2) of the original sheet.

6.

7. Dimensions, Mass, and Permissible Variations

- 6.1
- 7.1 Unless otherwise specified (see 4.1.6), Type I expanded metal shall be furnished in sheets 4 ft (1.2 m) wide by 8 ft (2.4 m) long, and Type II, flattened, expanded metal shall be furnished in sheets 4 ft (1.2 m) wide by 8 ft (2.4 m) long.
- 6.2 Types 7.2 Types I and II expanded metal shall be furnished in accordance with the weights and dimensions as specified in Tables 1-6, respectively.
- 6.3 Tolerances for Type I sheets
- 7.3 Tolerances for Type I (raised expanded metal) sheets:
- 6.3.1 Strand width shall not vary in excess of $\pm 10\%$ of the nominal width.
- 6.3.2 Sheet width shall be not less than $\frac{1}{4}$ in. (6 mm) below ordered width and shall not exceed $\frac{1}{8}$ in./ft of sheet width (10 mm/m of sheet width).
- 6.3.3 Sheet length on 96-in. (2.4-m) length sheets shall not vary by an amount greater than plus $\frac{3}{4}$ in. (19 mm) or minus 0 in.
- 6.3.4 The greatest deviation of a side edge from a straight line shall not exceed $\frac{1}{4}$ in. (6 mm) in 96 in. (2.4 m).
- 6.3.5 Sheet edges shall not deviate from parallel by more than $\frac{3}{8}$ in. (10 mm) in 96 in. (2.4 m).
- 6.3.6 Sheet edges shall be such that any intersecting side and edge shall not be out of square in excess of $\frac{1}{8}$ in./ft (10 mm/m).
- 6.3.7 Sheets shall be free from waves or buckles that are in excess of $\frac{3}{4}$ in. (19 mm) from a plane surface.

TABLE 1 Carbon Steel Dimensions, Strand Sizes, and Weight for Type I (Raised), Class 1 Metal^A

Style	Nominal Weight per CSF ^{#C}		Design Size ^{GD}		Opening Size ^{GD}		Strand Size		Overall Thickness	Approximate Values for Infused Perma- <u>tie</u>		Percent Openly Area	
	Lbs Minimum Thickness ^B	Min.	SWD	LWD	SWO	LWO	Width	Thickness	Overall Thickness	Overall Thickness	Percent Open Area	LWD	
										SWD	Area		
Min.	Max	Min.	Max										
1/4-20	84		0.250	1.000	0.125	0.718	0.065	0.079	0.0329	0.0389	0.135	42%	
1/4 20	0.032	86	0.250	1.000	0.125	0.718	0.072	0.036	0.135	48	12	45%	
1/4-18	112		0.250	1.000	0.140	0.718	0.065	0.079	0.0428	0.0528	0.147	42%	
1/4 18	0.042	114	0.250	1.000	0.110	0.718	0.072	0.048	0.147	48	12	43%	
1/2-20	42		0.500	1.200	0.438	0.938	0.065	0.079	0.0329	0.0389	0.140	71%	
1/2 20	0.032	43	0.500	1.200	0.438	0.938	0.072	0.036	0.140	24	10	80%	
1/2-18	69		0.500	1.200	0.438	0.938	0.079	0.097	0.0428	0.0528	0.172	65%	
1/2 18	0.042	70	0.500	1.200	0.438	0.938	0.088	0.048	0.172	24	10	72%	
1/2-16	85		0.500	1.200	0.375	0.938	0.178	0.096	0.0538	0.0658	0.175	65%	
1/2 16	0.053	86	0.500	1.200	0.375	0.938	0.087	0.060	0.175	24	10	65%	
1/2-13	141		0.500	1.200	0.312	0.938	0.086	0.106	0.0827	0.0967	0.204	62%	
1/2 13	0.083	147	0.500	1.200	0.312	0.938	0.096	0.092	0.0827	0.0967	0.204	2%	
1/2-13-188	306	0.500	1.200	0.250	0.800	0.188	0.230	0.0827	0.0967	0.275	16%		
1/2 13.1884	10	500	1.200	0.250	0.800	0.188	0.230	0.0827	0.0967	0.275	16%		
3/4-16	53		0.923	2.000	0.813	1.750	0.091	0.111	0.0538	0.0658	0.210	78%	
3/4 16	0.053	54	0.923	2.000	0.813	1.750	0.101	0.060	0.210	13	6	78%	
3/4-13	76		0.923	2.000	0.750	1.688	0.086	0.106	0.0827	0.0967	0.205	79%	
3/4 13	0.083	80	0.923	2.000	0.750	1.688	0.096	0.092	0.205	13	6	76%	
3/4-10-13	114		0.923	2.000	0.750	1.625	0.130	0.158	0.0827	0.0967	0.290	69%	
3/4 10	0.083	120	0.923	2.000	0.750	1.625	0.144	0.092	0.290	13	6	72%	
3/4-9	178		0.923	2.000	0.688	1.562	0.135	0.165	0.1265	0.1425	0.312	67%	
3/4 9	0.127	180	0.923	2.000	0.688	1.562	0.150	0.134	0.312	13	6	68%	
1-16	42		1.000	2.400	0.938	2.000	0.078	0.096	0.0538	0.0658	0.192	83%	
1 16	0.053	44	1.000	2.400	0.938	2.062	0.078	0.060	0.0538	0.0658	0.192	83%	
1 14	74	1.000	2.400	0.875	1.563	0.110	0.134	0.0677	0.0817	0.225	76%		
1 12	5	1.000	2.400	0.875	1.563	0.110	0.134	0.0677	0.0817	0.225	76%		
1-12	93		2.400	0.907	1.563	0.098	0.120	0.0966	0.1126	0.225	78%		
1-10L	171	1.000	2.400	0.750	1.563	0.140	0.172	0.1265	0.1425	0.375	60%		
1-10H	198	1.000	2.400	0.750	1.563	0.162	0.198	0.1265	0.1425	0.390	64%		
1-7	403	1.000	2.400	0.576	1.563	0.248	0.303	0.1713	0.1873	0.550	45%		
1 1/2-18		20	1.330	3.000	1.313	2.625	0.061	0.075	0.0428	0.0528	0.140	90%	
1 1/2 18	0.042	20	1.330	3.000	1.313	2.625	0.068	0.048	0.140	9	4	90%	
1 1/2-16		40	1.330	3.000	1.250	2.625	0.097	0.119	0.0538	0.0658	0.230	84%	
1 1/2 16	0.053	40	1.330	3.000	1.250	2.625	0.108	0.060	0.230	9	4	85%	
1 1/2-13	58		1.330	3.000	1.888	2.500	0.095	0.116	0.0827	0.0967	0.242	84%	
1 1/2 13	0.083	60	1.330	3.000	1.188	2.500	0.105	0.092	0.0827	0.0967	0.242	84%	
1 1/2-10-13	76	1.330	3.000	1.888	2.500	0.124	0.152	0.0827	0.0967	0.284	79%		
1 1/2 10 139	4	1.330	3.000	1.888	2.500	0.124	0.152	0.0827	0.0967	0.284	79%		
1 1/2-12	70		1.330	3.000	1.112	2.375	0.098	0.120	0.0966	0.1126	0.225	84%	
1 1/2 10	0.083	79	1.330	3.000	1.112	2.375	0.098	0.120	0.0966	0.1126	0.225	84%	
1 1/2-10L	165	1.330	3.000	1.000	2.375	0.180	0.220	0.1265	0.1425	0.380	70%		
1 1/2 10L	165	1.330	3.000	1.188	2.500	0.138	0.092	0.265	0.1425	0.384	70%		
1 1/2-10H	198	1.330	3.000	0.830	2.375	0.216	0.264	0.1265	0.1425	0.460	64%		
1 1/2 10H9	4	1.330	3.000	0.802	2.375	0.216	0.264	0.1265	0.1425	0.460	64%		
1 1/2-9	119		1.330	3.000	1.125	2.375	0.130	0.158	0.1265	0.1425	0.312	78%	
1 1/2 9	0.127	120	1.330	3.000	1.125	2.375	0.144	0.134	0.312	9	4	76%	
1 1/2-6		250	1.330	3.000	1.140	2.313	0.183	0.223	0.1853	0.2033	0.433	69%	
1 1/2 6	0.184	250	1.330	3.000	1.110	2.313	0.203	0.198	0.433	9	4	69%	
2-10-13	65		1.850	4.000	1.625	3.438	0.148	0.180	0.0827	0.0967	0.327	82%	
2 10	0.083	68	1.850	4.000	1.625	3.438	0.164	0.092	0.327	6.5	3	82%	
2-9	88		1.850	4.000	1.563	3.375		0.134	0.164	0.1265	0.1425	0.312	84%
2 9	0.127	90	1.850	4.000	1.563	3.375	0.149	0.134	0.312	6.5	3	84%	

^A 1 in. = 25.4 mm; 1 lb = 0.454 kg.

^B A variation in weight per square foot of $\pm 5\%$ is permissible, based on the weight of any sheet or bundle.

^C A variation in weight per square ft. of $\pm 10\%$ is permissible, based on the weight of any sheet or bundle.

^D A tolerance of $\pm 10\%$ is permitted in dimensions, center to center.

6.3.8 Each sheet shall have closed diamond openings and full length bonds on all sides:

6.4 Tolerances for Type II sheets

7.3.1 Strand width shall not vary in excess of $\pm 10\%$ of the nominal width.

7.3.2 Sheet width shall not exceed 1/4 in. per ft. of SWD dimension. (Example: factory run stock sheet 48 in. could be 49 in. wide.)

7.3.3 Sheet length shall not exceed 1/4 in. per ft. of LWD dimension. (Example: factory run stock sheet 96 in. could be 98 in. long.)

TABLE 2 Grating—Carbon Steel Dimensions, Strand Sizes, and Weight for Type II (Raised), Class 1 Metal^A

Style	LbsNominal Weight per CSF ^B	Design Size in. ^C		Opening Size in. ^C		Strand Size in.	AppOverestimate Valu Thickness-fs	Diamor-Infed perma ftie		Percent Openy Area	Overall ThicknessPe Open Ar		
		SWD	LWD	SWO	LWO			Width	Min-SWD			Max	Min.
-20F	77	0.250	1.050	0.084	0.715	0.071	0.087	0.027	0.033	0.030	37%		
2.0 lb	2.00	1.33	5.33	0.084	0.715	0.071	0.087	0.027	0.033	0.030	37%		
¼-18F	104	0.250	1.050	0.075	0.715	0.072	0.888	0.036	0.044	0.040	36%		
½-20F	37	0.500	1.250	0.375	1.000	0.071	0.071	0.026	0.032	0.029	68%		
¾-20F	37	0.500	1.250	0.375	1.000	3.60	0.235	0.026	0.032	0.029	68%		
½-18F	62	0.500	1.250	0.325-0.960	0.087	0.107	0.035	0.043	0.039	0.1%			
¾-18F	62	0.500	1.250	0.350-0.960	0.087	0.107	0.035	0.043	0.039	0.461%			
½-16F	78	0.500	1.250	0.325	0.920	0.086	0.106	0.045	0.055	0.050	62%		
¾-16F0	9.0	2.25	1.250	0.325	0.920	0.086	0.106	0.045	0.055	0.050	62%		
¼-13F	122	0.500	1.250	0.302	0.920	0.096	0.118	0.063	0.077	0.070	57%		
¾-16F	47	0.923	2.100	0.750	1.750	0.100	0.122	0.043	0.053	0.048	76%		
¾-13F	66	0.923	2.100	0.688	1.781	0.095	0.117	0.063	0.077	0.070	77%		
-10-13F	99	0.923	2.100	0.637	1.755	0.144	0.176	0.063	0.077	0.040	65%		
3.0 lb	3.00	1.33	5.33	0.940	3.44	0.264	0.183	0.540	9.0	2.25	60%		
-9F	175	0.923	2.100	0.563	1.688	0.149	0.182	0.108	0.132	0.120	64%		
3.14 lb	3.14	2.00	6.00	1.625	4.88	0.412	0.250	0.656	6.0	2.00	69%		
1-16F	40	1.000	2.500	0.813	2.250	0.088	0.108	0.045	0.055	0.050	80%		
4.0 lb	40	1.00	1.33	5.33	0.940	3.44	0.300	0.215	0.618	9.0	80%		
1-14F	55%												
1.14F2.25	55%												
4.271	1.000	2.500	0.813	2.000	0.113	0.138	0.068	0.077	0.060	75%			
4.27 lb	4.27	1.41	4.813	2.000	0.113	0.138	0.068	0.077	0.060	75%			
1-12F	108	1.000	2.500	0.813	2.000	0.140	0.172	0.077	0.094	0.085	69%		
1-10L-F	144	1.000	2.500	0.750	1.900	0.144	0.176	0.099	0.121	0.110	68%		
1.10L F	144	1.000	2.88	0.300	0.250	0.625	8.5	3.00	0.121	0.110	658%		
1½-16F	35	1.330	3.200	1.062	2.750	0.107	0.131	0.043	0.053	0.048	82%		
5.0 lb	5.00	1.33	5.33	0.813	3.38	0.331	0.250	0.655	9.0	2.25	50%		
1½-13F	50	1.330	3.200	1.062	2.750	0.104	0.128	0.063	0.077	0.070	83%		
6.25 lb	6.25	1.41	5.33	0.813	3.38	0.350	0.312	0.715	8.5	2.25	50%		
1½-12F	57	1.410	3.200	1.296	2.625	0.104	0.128	0.077	0.094	0.085	84%		
7.0 lb	7.00	1.41	5.33	0.813	3.38	0.391	0.318	0.740	8.5	2.25	4%		
1½-10L-F	127	1.330	3.200	0.900	2.563	0.169	0.207	0.099	0.121	0.110	72%		
1½-9F	107	1.330	3.200	0.900	2.563	0.142	0.174	0.099	0.121	0.110	76%		
1½-6F	238	1.000	2.563	1.330	3.200	0.230	0.281	0.156	0.190	0.173	49%		

^A 1 in. = 25.4 mm; 1 lb = 0.454 kg.

^B A variation in weight per square foot, of ± 5 % is permissible, based on the weight of any sheet or bundle.

^C A tolerance of ± 0.05 in. is permitted in dimensions, center to center.

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7.3.4 Camber shall not exceed 3/32 in. per ft. of dimension.

7.3.5 Taper shall not exceed 1/16 in. per ft. of dimension, or 1/4 in. overall, whichever is greater.

7.3.6 Squareness of ends of sheets shall not exceed 1/8 in. per ft. out of square or 1/2 in. of overall length.

7.3.7 Levelness of sheets shall be free from waves or buckles that are in excess of 1-1/2 in. from a plane surface.

7.3.8 Each sheet shall have closed diamond openings on all sides of the sheet unless ordered differently.

7.3.8.1 Generally, all stock or machine run sheets will have closed diamonds on all four sides.

7.4 Tolerances for Type II (expanded and flattened metal) sheets:

6.4.1 Strand width shall not vary in excess of ± 10% of the nominal width.

6.4.2 Sheet thickness after flattening shall not be greater than 90% and not less than 80% of the nominal gage thickness specified for the steel sheet.

6.4.3 Sheet width after flattening shall not be less than ¼ in. (6 mm) below nominal width and shall not exceed ¼ in./ft (10 mm/m) of nominal width.

6.4.4 Sheet length after flattening shall not vary from the nominal length by an amount greater than plus ¼ in. (6 mm) or minus 0 in.

6.4.5 The greatest deviation of a side edge from a straight line after flattening shall not exceed ¼ in. (6 mm) in 96 in. (2.4 m).

6.4.6 Sheet edges shall not deviate from parallel by more than ⅜ in. (10 mm) in 96 in. (2.4 m).

6.4.7 Ends of sheets, after shearing, shall not be more than 1/16 in./ft (5 mm/m) out of square, in relation to the side of the sheet used to gage the shearing.

6.4.8 Sheets shall be free from waves or buckles that are in excess of ⅜ in. (10 mm) from a plane surface.

7. 7.4.1 The thickness of Type II, flattened expanded metal, shall not be less than 80 % of the nominal thickness of the corresponding Type I, raised expanded metal thickness.

7.4.2 Sheet width after flattening shall not exceed 1/4 in. per ft. of SWD dimension.

TABLE 3 Grating—Stainless Steel Styles, Weights, Dimensions, Strand Sheet Sizes, and Weights for Type-1 (Raised), Class-3 1 Metal^A

Style Designation	Weight per Square Foot, lb ^B	Size of Mesh ^C		Opening Size, Strand, in. ^C	
		Style	Nominal Weight per CSF ^B	Design Size, in. ^C	
Width, in.	(See F55)			Fig. 1 (a))	
Width, in.		Overall Thickness		Dia))	Lemond per ft. + (b))
<u>1/2 No. 18</u>	<u>0.73</u>	<u>0.480</u>	<u>1.20</u>	<u>0.085</u>	
<u>SWD</u>	<u>LWD</u>	<u>SWO</u>	<u>LWO</u>	<u>0.085</u>	
<u>1/2 No. 16</u>	<u>0.91</u>	<u>0.480</u>	<u>1.20</u>	<u>0.085</u>	
<u>1/2 No. 16 Width</u>	<u>Thickness</u>	<u>SWD</u>	<u>1.20</u>	<u>0.085 LWD</u>	
<u>3/4 No. 18</u>	<u>0.47</u>	<u>0.900</u>	<u>2.00</u>	<u>0.100</u>	
<u>3.3 lb.</u>	<u>3.32</u>	<u>0.900</u>	<u>2.00</u>	<u>6.00</u>	
<u>3/4 No. 16</u>	<u>0.60</u>	<u>0.900</u>	<u>2.00</u>	<u>0.100</u>	
<u>3/4 No. 16</u>	<u>1.625</u>	<u>4.880</u>	<u>0.312</u>	<u>0.2500</u>	
<u>3/4 No. 13</u>	<u>0.91</u>	<u>0.900</u>	<u>2.00</u>	<u>0.100</u>	
<u>3/4 No. 13</u>	<u>0.656</u>	<u>6</u>	<u>2</u>	<u>69 %</u>	
<u>3/4 No. 9</u>	<u>2.05</u>	<u>0.900</u>	<u>2.00</u>	<u>0.150</u>	
<u>4.5 lb.</u>	<u>4.25</u>	<u>1.41</u>	<u>4.0</u>	<u>160</u>	
<u>1 1/2 No. 16</u>	<u>0.43</u>	<u>1.33</u>	<u>3.00</u>	<u>0.115 1 1/2 No. 13</u>	<u>0.68</u>
<u>1 1/2 No. 000</u>	<u>2.880</u>	<u>0.300</u>	<u>0.250</u>	<u>0.625</u>	<u>8.5</u>

^A 1 lb = 0.454 kg; 1 in. = 25.4 mm; 1 lb = 0.454 kg.

^B A variation in weight per square foot, of ±5 % is permissible, based on the weight of any sheet or bundle.

^C A tolerance of ±10 % to ±5 % is permitted in dimensions, center to center.

- 7.4.3 Sheet length after flattening shall not exceed 1/4 in. per ft. of LWD dimension.
- 7.4.4 Camber after flattening, the greatest deviation of a side from a straight line after flattening shall not exceed 3/32 in. per ft. of dimension.
- 7.4.5 Taper after flattening, sheet edges shall not deviate from parallel greater than 1/8 in. per ft. of dimension to a maximum of 3/8 in. overall.
- 7.4.6 Squareness of ends of sheets shall not exceed 1/8 in. per ft. out of square or 1/2 in. of overall length.
- 7.4.7 Levelness of sheets shall be free from waves or buckles that are in excess of 1-1/2 in. from a plane surface.
- 7.5 Expanded metal grating stock/machine run sheets dimension tolerances.
- 7.5.1 SWD shall not vary from the nominal dimension more than 1/4 in. per ft. of width.
- 7.5.2 LWD shall not vary greater than -0 +1/2 diamond size.
- 7.6 Random sheared tolerance for regular and flattened expanded metal and expanded metal grating.
- 7.6.1 Random sheared across one side SWD and one end LWD.
- 7.6.1.1 Expanded metal—±1/4 in. causing open diamonds on one side and one end.
- 7.6.1.2 Expanded metal grating shall vary in dimension ±1/2 in.
- 7.6.2 Random sheared across both SWD ends.
- 7.6.2.1 SWD has same tolerance as stock/machine run tolerance.
- 7.6.2.2 Expanded metal—±1/8 in. causing open diamonds on both SWD ends.
- 7.6.2.3 Expanded metal grating shall vary in dimension ±1/4 in.
- 7.6.3 Random shared all four sides.
- 7.6.3.1 Expanded metal—±1/8 in. causing open diamonds on all four sides.
- 7.6.3.2 Expanded metal grating shall vary in dimension ±1/4 in.
- 7.6.4 Random shared along the LWD on both sides.
- 7.6.4.1 SWD ends ±1/2 diamond size.
- 7.6.4.2 Expanded metal—±1/8 in. causing open diamonds on both LWD sides.
- 7.6.4.3 Expanded metal grating shall vary in dimension ±1/4 in.

8. Workmanship, Finish, and Appearance

7.1

8.1 Workmanship:

8.1.1 The strands shall be substantially uniform in width and thickness and shall be smooth and free from sharp edges. Broken strands, weld-repaired strands, laminations, irregular-shaped openings, and any other defects that may affect serviceability shall not be acceptable.