



Designation: ~~B 248-06~~ Designation: **B248 - 07**

Standard Specification for General Requirements for Wrought Copper and Copper- Alloy Plate, Sheet, Strip, and Rolled Bar¹

This standard is issued under the fixed designation B248; 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 establishes the general requirements common to several wrought product specifications. Unless otherwise specified in the purchase order or in an individual specification, these general requirements shall apply to copper and copper-alloy plate, sheet, strip, and rolled bar supplied under each of the following product specifications issued by ASTM: ~~B 36/B 36MB36/B36M, B 96/B 96M, B96/B96M, B 103/B 103M, B103/B103M, B 121/B 121M, B121/B121M, B 122/B 122M, B122/B122M, B 152/B 152M, B152/B152M, B 169/B 169M, B169/B169M, B 194, B194, B 422, B422, B 465, B465, B 534, B534B543, B 591, B591, B 592, B592, B 694, B694, B 740, B740, B 747, B747, and B 768, and B768.~~²

NOTE 1—A complete metric companion to Specification B248 has been developed—B248M; therefore no metric equivalents are presented in this specification.

1.2 *Units*—This specification is the companion specification to SI Specification ~~B 248MB248M~~; therefore, no SI equivalents are shown in this specification.

2. Referenced Documents

2.1 The following documents of the issue in effect on date of material purchase form a part of this specification to the extent referenced herein:

2.2 *ASTM Standards:*³

B36/B36M Specification for Brass Plate, Sheet, Strip, and Rolled Bar

B96/B96M Specification for Copper-Silicon Alloy Plate, Sheet, Strip, and Rolled Bar for General Purposes and Pressure Vessels

B103/B103M Specification for Phosphor Bronze Plate, Sheet, Strip, and Rolled Bar

B121/B121M Specification for Leaded Brass Plate, Sheet, Strip, and Rolled Bar

B122/B122M Specification for Copper-Nickel-Tin Alloy, Copper-Nickel-Zinc Alloy (Nickel Silver), and Copper-Nickel Alloy Plate, Sheet, Strip, and Rolled Bar

B152/B152M Specification for Copper Sheet, Strip, Plate, and Rolled Bar

B169/B169M Specification for Aluminum Bronze Sheet, Strip, and Rolled Bar

B193 Test Method for Resistivity of Electrical Conductor Materials

B194 Specification for Copper-Beryllium Alloy Plate, Sheet, Strip, and Rolled Bar

B248M Specification for General Requirements for Wrought Copper and Copper-Alloy Plate, Sheet, Strip, and Rolled Bar (Metric)

B422 Specification for Copper-Aluminum-Silicon-Cobalt Alloy, Copper-Nickel-Silicon-Magnesium Alloy, Copper-Nickel-Silicon Alloy, Copper-Nickel-Aluminum-Magnesium Alloy, and Copper-Nickel-Tin Alloy Sheet and Strip

B465 Specification for Copper-Iron Alloy Plate, Sheet, Strip, and Rolled Bar

B534 Specification for Copper-Cobalt-Beryllium Alloy and Copper-Nickel-Beryllium Alloy Plate, Sheet, Strip, and Rolled Bar

B543 Specification for Welded Copper and Copper-Alloy Heat Exchanger Tube

B591 Specification for Copper-Zinc-Tin and Copper-Zinc-Tin-Iron-Nickel Alloys Plate, Sheet, Strip, and Rolled Bar

B592 Specification for Copper-Zinc-Aluminum-Cobalt Alloy, Copper-Zinc-Tin-Iron Alloy Plate, Sheet, Strip, and Rolled Bar

¹ This specification is under the jurisdiction of the ASTM Committee B05 on Copper and Copper Alloys and is the direct responsibility of Subcommittee B05.01 on Plate, Sheet, and Strip.

Current edition approved Oct. 1, 2006-2007. Published October 2006-2007. Originally approved in 1951. Last previous edition approved in 2004-2006 as B 248-01¹. B248 - 06. DOI: 10.1520/B0248-07.

² The UNS system for copper and copper alloys (see Practice E-527E527) is a simple expansion of the former standard designation system accomplished by the addition of a prefix "C" and a suffix "00". The suffix can be used to accommodate composition variations of the base alloy.

³ 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.

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

- B694 Specification for Copper, Copper-Alloy, Copper-Clad Bronze (CCB), Copper-Clad Stainless Steel (CCS), and Copper-Clad Alloy Steel (CAS) Sheet and Strip for Electrical Cable Shielding
- B740 Specification for Copper-Nickel-Tin Spinodal Alloy Strip
- B747 Specification for Copper-Zirconium Alloy Sheet and Strip
- B768 Specification for Copper-Cobalt-Beryllium Alloy and Copper-Nickel-Beryllium Alloy Strip and Sheet
- B846 Terminology for Copper and Copper Alloys
- E8 Test Methods for Tension Testing of Metallic Materials
- E18 Test Methods for Rockwell Hardness of Metallic Materials
- E29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications
- E50 Practices for Apparatus, Reagents, and Safety Considerations for Chemical Analysis of Metals, Ores, and Related Materials
- E53 Test Method for Determination of Copper in Unalloyed Copper by Gravimetry
- E54 Test Methods for Chemical Analysis of Special Brasses and Bronzes
- E62 Test Methods for Chemical Analysis of Copper and Copper Alloys (Photometric Methods)
- E75 Test Methods for Chemical Analysis of Copper-Nickel and Copper-Nickel-Zinc Alloys
- E106 Test Methods for Chemical Analysis of Copper-Beryllium Alloys
- E112 Test Methods for Determining Average Grain Size
- E118 Test Methods for Chemical Analysis of Copper-Chromium Alloys
- E121 Test Methods for Chemical Analysis of Copper-Tellurium Alloys
- E255 Practice for Sampling Copper and Copper Alloys for the Determination of Chemical Composition
- E478 Test Methods for Chemical Analysis of Copper Alloys
- E527 Practice for Numbering Metals and Alloys in the Unified Numbering System (UNS)

3. Terminology

3.1 For definitions of terms related to copper and copper alloys, see Terminology B-846B846.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *coil, n*—a length of the product wound into a series of connected turns. The unqualified term “coil” as applied to “flat product” usually refers to a coil in which the product is spirally wound, with the successive layers on top of one another. (Sometimes called a “roll.”)

3.2.2 *lengths, mill, n*—straight lengths, including ends, that can be conveniently manufactured in the mills. Full-length pieces are usually 8, 10, or 12 ft and subject to established length tolerances.

3.2.3 *lengths, stock, n*—straight lengths that are mill cut and stored in advance of orders. They are usually 8, 10, or 12 ft and subject to established length tolerances.

3.2.4 *rolled bar, n*—a rolled flat product over 0.188 in. thick and up to and including 12 in. wide, with sheared, sawed, or machined edges, in straight lengths or coils (rolls).

4. Materials and Manufacture

4.1 *Materials:*

4.1.1 The material of manufacture shall be a cast bar, cake, or slab of such purity and soundness as to be suitable for processing into the products to the product specification listed in Section 1.

4.1.2 In the event heat identification or traceability is required, the purchaser shall specify the details desired.

4.2 *Manufacture:*

4.2.1 The product shall be manufactured by such hot-working or cold-working and annealing processes as to produce a uniform wrought structure in the finished product.

4.2.2 The product shall be hot or cold-worked to the finished size and subsequently annealed when required, to meet the temper properties specified.

4.3 *Edges*—The edges shall be slit, sheared, sawed, or rolled edges, as specified. Slit edges shall be furnished unless otherwise specified in the contract or purchase order. See 5.6 for edge descriptions and corresponding tables for tolerances.

5. Dimensions, Weights, and Permissible Variations

5.1 *General*—For the purpose of determining conformance with the dimensional requirements prescribed in this specification, any measured value outside the specified limiting values for any dimension may be cause for rejection.

NOTE 2—Blank spaces in the tolerance tables indicate either that the material is not available or that no tolerances have been established.

5.2 *Thickness*—The standard method of specifying thickness shall be in decimal fractions of an inch. For material 0.021 in. and under in thickness, it is recommended that the nominal thicknesses be stated not closer than the nearest half-thousandth. (For example, specify 0.006 or 0.0065 in., but not 0.0063 in.) For material over 0.021 in. in thickness, it is recommended that the nominal thicknesses be stated not closer than the nearest thousandth. (For example, specify 0.128 or 0.129 in., but not 0.1285 in.) A list of preferred thicknesses is shown in Appendix X1. The thickness tolerances shall be those shown in Tables 1-3 for the product specification indicated:

TABLE 1 Thickness Tolerances

(Applicable to Specifications **B-36/B-36M B36/B36M, B-103/B-103M B103/B103M, B-121/B-121M B121/B121M, B-152/B-152M B152/B152M, B-465 B465, B-591 B591, B-592 B592, and B-747 B747**)

Thickness, in.	Thickness Tolerances, plus and minus, ^A in.								
	Strip					Sheet			
	8 in. and Under in Width	Over 8 to 12 in., incl, in Width	Over 12 to 14 in., incl, in Width	Over 14 to 20 in., incl, in Width	Over 20 to 24 in., incl, in Width	Over 24 to 28 in., incl, in Width	Over 28 to 36 in., incl, in Width	Over 36 to 48 in., incl, in Width	Over 48 to 60 in., incl, in Width
0.004 and under	0.0003	0.0006	0.0006	...	...	...	...	...	...
Over 0.004 to 0.006, incl	0.0004	0.0008	0.0008	0.0013	...	...	...	...	...
Over 0.006 to 0.009, incl	0.0006	0.0010	0.0010	0.0015	...	...	...	...	...
Over 0.009 to 0.013, incl	0.0008	0.0013	0.0013	0.0018	0.0025	0.0025	0.003	0.0035	0.004
Over 0.013 to 0.017, incl	0.0010	0.0015	0.0015	0.002	0.0025	0.0025	0.003	0.0035	0.0045
Over 0.017 to 0.021, incl	0.0013	0.0018	0.0018	0.002	0.003	0.003	0.0035	0.004	0.005
Over 0.021 to 0.026, incl	0.0015	0.002	0.002	0.0025	0.003	0.003	0.0035	0.004	0.005
Over 0.026 to 0.037, incl	0.002	0.002	0.002	0.0025	0.0035	0.0035	0.004	0.005	0.006
Over 0.037 to 0.050, incl	0.002	0.0025	0.0025	0.003	0.004	0.004	0.005	0.006	0.007
Over 0.050 to 0.073, incl	0.0025	0.003	0.003	0.0035	0.005	0.005	0.006	0.007	0.008
Over 0.073 to 0.130, incl	0.003	0.0035	0.0035	0.004	0.006	0.006	0.007	0.008	0.010
Over 0.130 to 0.188, incl	0.0035	0.004	0.004	0.0045	0.007	0.007	0.008	0.010	0.012
	Rolled Bar					Plate			
Over 0.188 to 0.205, incl	0.0035	0.004	0.004	0.0045	0.007	0.007	0.008	0.010	0.012
Over 0.205 to 0.300, incl	0.004	0.0045	0.0045	0.005	0.009	0.009	0.010	0.012	0.014
Over 0.300 to 0.500, incl	0.0045	0.005	0.005	0.006	0.012	0.012	0.013	0.015	0.018
Over 0.500 to 0.750, incl	0.0055	0.007	0.007	0.009	0.015	0.015	0.017	0.019	0.023
Over 0.750 to 1.00, incl	0.007	0.009	0.009	0.011	0.018	0.018	0.021	0.024	0.029
Over 1.00 to 1.50, incl	0.022	0.022	0.022	0.022	0.022	0.022	0.025	0.029	0.036
Over 1.50 to 2.00, incl	0.026	0.026	0.026	0.026	0.026	0.026	0.030	0.036	0.044

^A When tolerances are specified as all plus or all minus, double the values given.

5.2.1 Table 1—Thickness tolerances applicable to Specifications **B-36/B-36M B36/B36M, B-103/B-103M, B103/B103M, B-121/B-121M, B121/B121M, B-152/B-152M, B152/B152M, B-465, B465, B-591, B591, B-592, B592, and B-747, and B747.**

5.2.2 Table 2—Thickness tolerances applicable to Specifications **B-96/B-96M B96/B96M, B-122/B-122M, B122/B122M, B-169/B-169M, B169/B169M, B-194, B194, B-422, B422, B-534, B534, B543, B-740, B740, and B-768, and B768.**

5.2.3 Table 3—Special thickness tolerances applicable to Copper Alloy UNS No. C72500 when ordered to Specification **B-122/B-122M B122/B122M, and to Specifications B-194 B194, B-534, B534, B543, B-740, B740, and B-768, and B768** as noted in the table.

5.3 *Width*—The width tolerances shall be those shown in Tables 4-6, depending on the type of edge required (see 5.3.1, 5.3.2, and 5.3.3):

5.3.1 Table 4—Width tolerances for slit metal and slit metal with rolled edges.

5.3.2 Table 5—Width tolerances for square-sheared metal.

5.3.3 Table 6—Width tolerances for sawed metal.

5.4 *Length*—The material shall be furnished in coils or straight lengths of plate, sheet, strip, or rolled bar as specified. The length tolerances for straight lengths shall be those shown in Tables 7-10, depending on the method of cutting required (see 5.4.1-5.4.4). When ends are permitted, the length and quantity of the ends shall be in accordance with the schedule in Table 8.

5.4.1 Table 7—Length tolerances, for straight lengths.

5.4.2 Table 8—Schedule of minimum length and maximum weight of ends for lengths with ends.

5.4.3 Table 9—Length tolerances for square-sheared metal.

5.4.4 Table 10—Length tolerances for sawed metal.

5.5 *Straightness*—The straightness tolerances, which are the maximum edgewise curvature (depth of arc) in any 72-in. portion of the total length, shall be those shown in Tables 11-13, depending on the type of edge required.

5.5.1 Table 11—Straightness tolerances for metal as slit, or as slit and straightened, or as slit and edge-rolled, or metal with drawn edges.

5.5.2 Table 12—Straightness tolerances for square-sheared metal.

5.5.3 Table 13—Straightness tolerances for sawed metal.

5.6 *Edges*—When rolled edges are required, they may be produced by either rolling or drawing to one of the following specified edge contours:

5.6.1 *Square Edges (Square Corners)*—Edges shall have commercially-squared corners and with a maximum corner radius as prescribed in Table 14.

5.6.2 *Rounded Corners*—Edges shall have rounded corners as shown in Fig. 1 with a radius as prescribed in Table 15.

5.6.3 *Rounded Edges*—Edges shall be rounded as shown in Fig. 2 with a radius as prescribed in Table 16.

5.6.4 *Full-Rounded Edges*—Edges shall be full rounded as shown in Fig. 3 with a radius as prescribed in Table 17.

TABLE 2 Thickness Tolerances

(Applicable to Specifications B-96/B-96M B96/B96M, B-122/B-122M B122/B122M, B-169/B-169M B169/B169M, B-194 B194, B-422 B422, B534B543, B-740 B740, and B-768 B768)

Thickness Tolerances, Plus and Minus, ^A in.									
Thickness, in.	Strip					Sheet			
	8 in. and Under in Width	Over 8 to 12 in., incl, in Width	Over 12 to 14 in., incl, in Width	Over 14 to 20 in., incl, in Width	Over 20 to 24 in., incl, in Width	Over 24 to 28 in., incl, in Width	Over 28 to 36 in., incl, in Width	Over 36 to 48 in., incl, in Width	Over 48 to 60 in., incl, in Width
0.004 and under	0.0004	0.0008	0.0008	...	...	...	...	...	...
Over 0.004 to 0.006, incl	0.0006	0.0010	0.0010	0.0015	...	...	...	...	...
Over 0.006 to 0.009, incl	0.0008	0.0013	0.0013	0.002	...	...	...	...	...
Over 0.009 to 0.013, incl	0.0010	0.0015	0.0015	0.0025	...	...	...	...	...
Over 0.013 to 0.017, incl	0.0013	0.002	0.002	0.0025	...	...	...	...	...
Over 0.017 to 0.021, incl	0.0015	0.0025	0.0025	0.003	...	...	...	...	...
Over 0.021 to 0.026, incl	0.002	0.0025	0.0025	0.003	0.004	0.004	0.005	0.006	0.007
Over 0.026 to 0.037, incl	0.0025	0.003	0.003	0.0035	0.005	0.005	0.006	0.007	0.008
Over 0.037 to 0.050, incl	0.003	0.0035	0.0035	0.004	0.006	0.006	0.007	0.008	0.010
Over 0.050 to 0.073, incl	0.0035	0.004	0.004	0.0045	0.007	0.007	0.008	0.010	0.012
Over 0.073 to 0.130, incl	0.004	0.0045	0.0045	0.005	0.008	0.008	0.010	0.012	0.014
Over 0.130 to 0.188, incl	0.0045	0.005	0.005	0.006	0.010	0.010	0.012	0.014	0.016
	Rolled Bar					Plate			
Over 0.188 to 0.205, incl	0.0045	0.005	0.005	0.006	0.010	0.010	0.012	0.014	0.016
Over 0.205 to 0.300, incl	0.005	0.006	0.006	0.007	0.012	0.012	0.014	0.016	0.018
Over 0.300 to 0.500, incl	0.006	0.007	0.007	0.008	0.015	0.015	0.017	0.019	0.023
Over 0.500 to 0.750, incl	0.008	0.010	0.010	0.012	0.019	0.019	0.021	0.024	0.029
Over 0.750 to 1.00, incl	0.010	0.012	0.012	0.015	0.023	0.023	0.026	0.030	0.037
Over 1.00 to 1.50, incl	0.028	0.028	0.028	0.028	0.028	0.028	0.032	0.037	0.045
Over 1.50 to 2.00, incl	0.033	0.033	0.033	0.033	0.033	0.033	0.038	0.045	0.055

^A When tolerances are specified as all plus or all minus, double the values given.

TABLE 3 Special Thickness Tolerances

Thickness, in.	Tolerances Applicable to Copper Alloy UNS No. C72500, Specification B-122/B-122M B122/B122M and B-740 B740 Tolerances, Plus and Minus, ^A in., for Strip 8 in. and Under in Width	Tolerances Applicable to Specifications B-194 B194, B-534B543, and B-768 B768 Tolerances, Plus and Minus, ^A in., for Strip 4 in. and Under in Width
	0.004 and under	0.0002	0.0002
Over 0.004 to 0.006, incl	0.0003	0.0003
Over 0.006 to 0.009, incl	0.0004	0.0005
Over 0.009 to 0.013, incl	0.0005	0.0006
Over 0.013 to 0.017, incl	0.0007	0.0007
Over 0.017 to 0.021, incl	0.0008	0.0008
Over 0.021 to 0.026, incl	0.0010	0.0010
Over 0.026 to 0.032, incl	0.0013	0.0010
Over 0.032 to 0.050, incl	0.0015	...

^A If tolerances are specified as all plus or all minus, double the values given.

5.7 Weight Tolerances for Hot-Rolled Material:

5.7.1 Table 18—Lot weight tolerances for hot-rolled sheet and plate applicable to Specifications B-36/B-36M B36/B36M, B-

TABLE 4 Width Tolerances for Slit Metal and Slit Metal with Rolled Edges
(Applicable to all specifications listed in 1.1)

Width, in.	Width Tolerances, ^A Plus and Minus, in.			
	For	For	For	For
	Thicknesses 0.004 to 0.032 in.	Thicknesses Over 0.032 to 0.125 in.	Thicknesses Over 0.125 to 0.188 in.	Thicknesses Over 0.188 to 0.500 in.
2 and under	0.005	0.010	0.012	0.015
Over 2 to 8, incl	0.008	0.013	0.015	0.015
Over 8 to 24, incl	1/64	1/64	1/64	1/32
Over 24 to 40, incl	1/32	1/32	1/32	3/64
Over 40 to 50, incl	1/32	1/32	1/32	3/64

^A If tolerances are specified as all plus or all minus, double the values given.

TABLE 5 Width Tolerances for Square-Sheared Metal
(Applicable to all specifications listed in 1.1)

NOTE 1—All lengths up to 120 in., incl.

Width, in.	Width Tolerances, ^A Plus and Minus, in.		
	1/16 in. and Under in Thickness	Over 1/16 to 1/8 in., incl, in Thickness	Over 1/8 in. in Thickness
20 and under	1/32	3/64	1/16
Over 20 to 36, incl	3/64	3/64	1/16
Over 36 to 120, incl	1/16	1/16	1/16

^A If tolerances are specified as all plus or all minus, double the values given.

TABLE 6 Width Tolerances for Sawed Metal
(Applicable to all specifications listed in 1.1)

Width, in.	Width Tolerances, ^A Plus and Minus, in.		
	For Lengths Up to 10 ft, incl		For Lengths Over 10 ft.
	For Thicknesses Up to 1 1/2 in., incl	For Thicknesses Over 1 1/2 in.	All Thicknesses
Up to 12, incl	1/32	1/16	1/16
Over 12 to 120, incl	1/16	1/16	1/16

^A If tolerances are specified as all plus or all minus, double the values given.

TABLE 7 Length Tolerances for Straight Lengths
(Applicable to all specifications listed in 1.1 except B694)

NOTE 1—The following length tolerances are all plus; if all minus tolerances are desired, use the same values; if tolerances are desired plus and minus, halve the values given.

Length ft.	Length Tolerances in.
Specific lengths, mill lengths, multiple lengths, and specific lengths with ends 10 and under	1/4
Over 10 to 20, incl	1/2
Stock lengths and stock lengths with ends	1 ^A

^A As stock lengths are cut and placed in stock in advance of orders, departure from the tolerance is not practicable.

96/B-96M, B96/B96M (Copper Alloy UNS No. C65500), B-103/B-103MB103/B103M, B-122/B-122M, B122/B122M, B-152/B-152M, B152/B152M, and B-591, and B591.

5.7.2 The weight of each lot of five or more plates or sheets of the same type and the same specified dimensions when ordered to thickness, shall not vary from the theoretical by more than the amount prescribed in Table 18 for the product specification indicated. The weight of any individual plate or sheet may vary from the nominal by not more than one third in excess of the tolerances prescribed in Table 18 for the product specification indicated. The tolerances for lots of less than five plates or sheets shall be governed by the tolerances for individual plates or sheets.

5.7.3 For the purpose of calculation, the densities of the materials covered by these specifications are listed in Appendix X2.

6. Workmanship, Finish and Appearance

6.1 The material shall be free of defects, but blemishes of a nature that do not interfere with the intended application are

TABLE 8 Schedule of Minimum Length and Maximum Weight of Ends for Mill Lengths, Specific Lengths with Ends, and Stock Lengths with Ends

(Applicable to all specifications listed in 1.1 except B-694 B694)

Nominal Length, ft	0.050 in. and Under in Thickness		Over 0.050 to 0.125 in., incl, in Thickness		Over 0.125 to 0.250 in., incl, in Thickness	
	Minimum Length of Shortest Piece, ft	Maximum Permissible Weight of Ends, % of Lot Weight	Minimum Length of Shortest Piece, ft	Maximum Permissible Weight of Ends, % of Lot Weight	Minimum Length of Shortest Piece, ft	Maximum Permissible Weight of Ends, % of Lot Weight
6 to 8, incl	4	20	4	25	3	30
8 to 10, incl	6	25	5	30	4	35
10 to 14, incl	7	30	6	35	5	40

TABLE 9 Length Tolerances for Square-Sheared Metal in All Widths 120 in. (3.05 m) and Under

(Applicable to all specifications listed in 1.1 except B-694 B694)

Length, in.	Length Tolerance, ^A Plus and Minus, in.		
	For Thicknesses Up to 1/16 in., incl	For Thicknesses Over 1/16 to 1/8 in., incl	For Thicknesses Over 1/8 in.
20 and under	1/32	3/64	1/16
Over 20 to 36, incl	3/64	3/64	1/16
Over 36 to 120, incl	1/16	1/16	1/16

^A If tolerances are specified as all plus or all minus, double the values given.

TABLE 10 Length Tolerances for Sawed Metal

(Applicable to all specifications listed in 1.1 except B-694 B694)

NOTE 1—The following tolerances are all plus; if all minus tolerances are desired, use the same values; if tolerances are desired plus and minus, halve the values given.

Width, in.	Length Tolerance, in.
Up to 120, incl	1/4

TABLE 11 Straightness Tolerances for Slit Metal or Slit Metal Either Straightened or Edge-Rolled

(Applicable to all specifications listed in 1.1)

Maximum Edgewise Curvature (Depth of Arc) in any 72-in. Portion of the Total Length	Straightness Tolerance, in.		
	As Slit Only		As Slit and Either Straightened or Edge Rolled
	Shipped in Rolls	Shipped Flat	Shipped Flat, in Rolls, or on Bucks
Over 1/4 to 3/8, incl	2	1 1/2	1/2
Over 3/8 to 1/2, incl	1 1/2	1	1/2
Over 1/2 to 1, incl	1	3/4	1/2
Over 1 to 2, incl	5/8	5/8	3/8
Over 2 to 4, incl	1/2	1/2	3/8
Over 4	3/8	3/8	3/8

acceptable. A superficial film of residual light lubricant is normally present and is acceptable unless otherwise specified.

7. Sampling

7.1 *Sampling*—The lot size, portion size, and selection of sample pieces shall be as follows:

7.1.1 *Lot Size*—An inspection lot shall be 10 000 lb or less material of the same mill form, alloy, temper, and nominal dimensions, subject to inspection at one time or shall be the product of one cast bar from a single melt charge, whose weight shall not exceed 25 000 lb that has been continuously processed and subject to inspection at one time.

7.1.2 *Portion Size*—A portion shall be two representative samples taken from the product of one cast bar that has been continually processed to the finished temper and dimensions.

7.1.2.1 *Chemical Analysis*—The sample for chemical analysis shall be taken in accordance with Practice E-255E255 for product in its final form. Unless otherwise required by the purchaser, at the time the order is placed, the manufacturer shall have the option