



Standard Specification for Cartridge Brass Sheet, Strip, Plate, Bar, and Disks¹

This standard is issued under the fixed designation B19; 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 U.S. Department of Defense.

1. Scope*

1.1 This specification establishes the requirements for sheet, strip, plate, bar, and disks for the manufacture of ammunition component parts thereof from alloy UNS C26000.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units, which are provided for information only and are not considered standard.

1.2.1 *Exception*—Values given in inch-pound units are the standard except for grain size which is stated in metric units.

1.3 The following safety caveat pertains only to the test method described in Section 10 of this specification. (**Warning**—Mercury has been designated by many regulatory agencies as a hazardous material that can cause serious medical issues. Mercury, or its vapor, has been demonstrated to be hazardous to health and corrosive to materials. Caution should be taken when handling mercury and mercury containing products. See the applicable product Safety Data Sheet (SDS) for additional information. Users should be aware that selling mercury and/or mercury containing products into your state or country may be prohibited by law.)

1.4 This standard does not purport to address all of the safety concerns, if any, 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

B154 Test Method for Mercurous Nitrate Test for Copper Alloys

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

B248 Specification for General Requirements for Wrought Copper and Copper-Alloy Plate, Sheet, Strip, and Rolled Bar

B601 Classification for Temper Designations for Copper and Copper Alloys—Wrought and Cast

B846 Terminology for Copper and Copper Alloys

B858 Test Method for Ammonia Vapor Test for Determining Susceptibility to Stress Corrosion Cracking in Copper Alloys

B900 Practice for Packaging of Copper and Copper Alloy Mill Products for U.S. Government Agencies

E3 Guide for Preparation of Metallographic Specimens

E8/E8M Test Methods for Tension Testing of Metallic Materials

E29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications

E112 Test Methods for Determining Average Grain Size

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)

2.2 Federal Standards:³

Fed. Std. No. 123 Marking for Shipment (Civil Agencies)

Fed. Std. No. 185 Identification Marking of Copper and Copper-Base Alloy Mill Products

2.3 Military Standards:³

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

MIL-STD-129 Marking for Shipment and Storage

3. Terminology

3.1 For definitions of terms related to copper and copper alloys, refer to Terminology **B846**.

4. Ordering Information

4.1 Include the following specified choices when placing orders for product under this specification, as applicable:

³ Available from DLA Document Services, Building 4/D, 700 Robbins Ave., Philadelphia, PA 19111-5094, http://quicksearch.dla.mil.

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

- 4.1.1 ASTM designation and year of issue (for example, B19-XX),
- 4.1.2 Product form: sheet, strip, plate, bar, or disks (blanks),
- 4.1.3 Temper (Section 7),
- 4.1.4 Dimension: thickness, width, length,
- 4.1.5 How furnished: flat lengths, coils, or blanks,
- 4.1.6 Quantity: total weight each temper, form, and size, and
- 4.1.7 When severe drawing or deep cupping is required.

4.2 The following options are available but may not be included unless specified at the time of placing the order when required:

- 4.2.1 Type of edge (for example, slit, sheared, sawed, and so forth),
- 4.2.2 Heat identification or traceability details,
- 4.2.3 Caliber or diameter of Type IV cups or disks (Section 11),
- 4.2.4 Residual Stress Test (Section 10),
 - 4.2.4.1 The pH value for the Ammonia Vapor Test if other than 10,
- 4.2.5 Product Marking (Section 22),
- 4.2.6 On-site inspection (Section 18.1),
- 4.2.7 Certification (Section 20), and
- 4.2.8 Mill Test Report (Section 21).

5. Materials and Manufacture

5.1 Materials:

5.1.1 The material of manufacture shall be a cast bar of copper alloy UNS C26000 of such purity and soundness as to be suitable for processing into the products prescribed herein.

5.1.2 When specified in the contract or purchase order, that heat identification or traceability is required, the purchaser shall specify the details desired.

NOTE 1—Due to the discontinuous nature of the processing of castings into wrought products, it is not always practical to identify a specific casting analysis with a specific quantity of finished material.

5.2 Manufacture:

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

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

5.3 Edges:

5.3.1 Slit edges shall be furnished unless otherwise specified in the contract or purchase order.

6. Chemical Composition

6.1 The product material shall conform to the chemical composition requirements prescribed in Table 1.

6.1.1 These composition limits do not preclude the presence of other elements. By agreement between the manufacturer and purchaser, limits may be established and analysis required for unnamed elements.

TABLE 1 Chemical Requirements

Copper	Composition, %		Zinc	Bismuth
	Lead, max	Iron, max		
68.5 to 71.5	0.07	0.05	remainder	0.0059 max

6.2 For alloys in which zinc is listed as “remainder,” either copper or zinc may be taken as the difference between the sum of results of all other elements determined and 100 %. Copper, when determined by difference, must conform to the requirements of Table 1. When all elements in Table 1 are determined, the sum of the results shall be 99.7 % min.

7. Temper

7.1 Product tempers, as defined in Classification B601, shall be as follows:

- 7.1.1 Hot Rolled Temper: M20,
- 7.1.2 Cold Rolled Tempers: H01, H02, H03, H04, H06, H08, and H10.
- 7.1.3 Annealed Tempers: OS015, OS025, OS035, OS050, OS070, and OS100.
- 7.1.4 The purchaser should confer with the manufacturer or supplier for availability of product in a specific temper, form, and size.

8. Grain Size Requirements

8.1 Annealed sheet, strip, and bar furnished under this specification shall conform to the requirements specified in Table 2.

8.2 Acceptance or rejection based upon grain size shall depend only on the average grain size of a test specimen taken from each of two sample portions, and each specimen shall be within the limits prescribed in Table 2 when determined in accordance with Test Methods E112.

8.3 Except for material ordered by the U.S. Government, annealed material to be used for the manufacture of cartridge brass cups and disks shall conform to the requirements of Table 3.

8.4 Annealed plate, bar, and disks ordered by the U.S. Government shall meet the following requirements:

- 8.4.1 Material up to 0.500 in. (12.70 mm) in thickness inclusive, except material for 20 mm disks, shall be furnished to a grain size of 0.055 to 0.120 mm inclusive.
- 8.4.2 Material over 0.500 in. (12.70 mm) in thickness, except material for 20-mm disks, shall be furnished to a grain size of 0.070 to 0.150 mm inclusive.
- 8.4.3 Disks (blanks) of 20 mm and material for blanking 20-mm disks (blanks) shall be furnished to a grain size of 0.070 to 0.130 mm inclusive.

8.5 Material ordered as-hot rolled shall be furnished to a grain size as agreed upon between the manufacturer or supplier and the producer.

TABLE 2 Grain Size Requirements for Annealed Material

Temper	Nominal	Grain Size, mm	
		Min	Max
OS015	0.015	^A	0.025
OS025	0.025	0.015	0.035
OS035	0.035	0.025	0.050
OS050	0.050	0.035	0.070
OS070	0.070	0.050	0.100
OS100	0.100	0.060	0.150

^A No minimum grain size required, but the material shall be fully recrystallized.

TABLE 3 Grain Size Requirements for Material for Manufacture of Cartridge Brass Cups and Disks

Type	Temper	Grain Size, mm		Use
		Min	Max	
I	OS065	0.035	0.090	Strip for 0.30 and 0.45 caliber cups
II	OS110	0.080	0.140	Strips for 0.50 caliber cups
III	OS055	0.055	0.115	Disks 0.500 in. (12.7 mm) and under in thickness
IV	OS115	0.075	0.150	Disks over 0.500 in. (12.7 mm) in thickness

8.6 Material to be used for the manufacture of primer cup and primer anvils shall conform to the grain size requirements of **Table 4**.

9. Mechanical Property Requirements

9.1 *Tensile Strength Requirements:*

9.1.1 Product (Cold Rolled Tempers) furnished under this specification shall conform to the tensile requirements prescribed in **Table 5**, when tested in accordance with Test Methods **E8/E8M**.

9.1.2 Product (Annealed Tempers) furnished under this specification shall conform to the tensile requirements prescribed in **Table 6**, when tested in accordance with Test Methods **E8/E8M**.

9.1.3 Product (Hot Rolled Temper) furnished under this specification shall conform to the tensile requirements prescribed in **Table 6**, when tested in accordance with Test Methods **E8/E8M**.

10. Performance Requirements

10.1 *Residual Stress Test:*

10.1.1 When specified in the contract or purchase order, the product shall be tested for residual stress according to the requirements of Test Method **B154** or Test Method **B858**, and show no signs of cracking. (**Warning**—Mercury is a definite health hazard. With the Mercurous Nitrate Test, equipment for the detection and removal of mercury vapor produced in volatilization, and the use of protective gloves is recommended.)

TABLE 5 Tensile Strength Requirements for Rolled Tempers

NOTE 1—Plate is generally available in only the soft O60, quarter-hard H01, and half-hard H02 tempers. Required properties for other tempers shall be agreed upon between the manufacturer or supplier and the purchaser at time of placing the order or contract.

Temper Designation		Tensile Strength, ksi ^A (MPa)	
Standard	Former	min	max
H01	quarter hard	49 (340)	59 (405)
H02	half hard	57 (395)	67 (460)
H03	three-quarter hard	64 (440)	74 (510)
H04	hard	71 (490)	81 (560)
H06	extra hard	83 (570)	92 (635)
H08	spring	91 (625)	100 (690)
H10	extra spring	95 (655)	104 (715)

^A 1 ksi = 1000 psi.

11. Dimensions, Mass, and Permissible Variations

11.1 The dimensions and tolerances for products described by this specification, except as covered herein, shall be as specified in the current edition of Specification **B248**, with particular reference to Section **6** and the dimensional tables of that specification.

11.2 The diameter of the disks measured at the large end shall not vary from that specified in the order by more than the amounts shown in **Table 7**.

11.3 Disks shall not vary in thickness by more than the amounts shown in **Table 8**, except that disks for 20-mm cartridge cases shall be not less than the thickness specified and shall not exceed the specified thickness by more than 0.008 in. (0.20 mm) in the area 1 in. (25 mm) in diameter in the center of the disk.

11.4 Material to be used for the manufacture of primer cup and primer anvil shall conform to the dimensional tolerances requirements shown in **Table 4**.

11.5 Special dimensional tolerances shall be as agreed upon between the manufacturer or supplier and the purchaser.

11.6 Straightness shall be determined by placing the piece on a level surface so that the arc or departure from straightness

TABLE 4 Dimensional Tolerances, Grain Size, and Temper of Brass for Primer Cup and Primer Anvils

Item	Size Case, caliber	Thickness, in. (mm)	Permissible Variation	Standard Temper Designations	Nominal Grain Size, mm or Temper
			in Thickness Plus and Minus, in. (mm)		
Cup	0.50	0.035 (0.899)	0.0008 (0.020)	OS100	0.100 (OS100)
	0.45	0.018 (0.458) or 0.020 (0.508)	0.001 (0.025)	OS050	0.050 (OS050)
	7.62 mm	0.027 (0.686) or 0.029 (0.737)	0.0008 (0.020)	OS100	0.100 (OS100)
	5.56 mm	0.027 (0.686)	0.0005 (0.0125)	OS070	0.070 (OS070)
Anvil	0.30	0.027 (0.686)	0.0008 (0.020)	OS100	0.100 (OS100)
	0.30 carbine	0.020 (0.508)	0.001 (0.025)	OS070	0.070 (OS070)
	0.50	0.0485 (1.2315)	0.001 (0.025)	OS025	0.025 (OS025)
	0.45	0.038 (0.965)	0.001 (0.025)	H01	¼ hard (H01)
	7.62 mm	0.038 (0.965)	0.001 (0.025)	H01 or H02	¼ or ½ hard (H01 or H02)
	5.56 mm	0.038 (0.965)	0.001 (0.025)	H01 or H02	¼ or ½ hard (H01 or H02)
	0.30	0.038 (0.965)	0.001 (0.025)	H01 or H02	¼ or ½ hard (H01 or H02)
	0.30 carbine	0.034 (0.864)	0.001 (0.025)	H01	¼ hard (H01)

TABLE 6 Tension Test Requirements of Annealed and As-Hot Rolled Materials

NOTE 1—On annealed material under 0.020 in. (0.51 mm) in thickness, grain size only shall be specified.

Thickness, in. (mm)	Tensile Strength, min ksi ^A (MPa)	Elongation in 2 in. (50 mm), min, %
	annealed temper, OS025, 0.015– 0.035 mm nominal grain size	
0.020 to 0.050 (0.508 to 1.27), incl	45 (310)	40
Over 0.050 to 0.100 (1.27 to 2.54), incl	45 (310)	42
Over 0.100 to 0.150 (2.54 to 3.81), incl	45 (310)	45
Over 0.150 (3.81)	45 (310)	50
	annealed temper, OS070, 0.050– 0.100 mm nominal grain size	
0.020 to 0.050 (0.508 to 1.27), incl	44 (305)	45
Over 0.050 to 0.100 (1.27 to 2.54), incl	44 (305)	47
Over 0.100 to 0.150 (2.54 to 3.81), incl	44 (305)	50
Over 0.150 to 0.250 (3.81 to 6.35), incl	44 (305)	55
Over 0.250 to 0.500 (6.35 to 12.7), incl	43 (295)	55
Over 0.500 (12.7)	40 (275)	60
	as-hot rolled, M20	
0.250 to 0.500 (6.35 to 12.7), incl	43 (295)	55
Over 0.500 (12.7)	40 (275)	60

^A 1 ksi = 1000 psi.

TABLE 7 Diameter Tolerances for Disks (Blanks)

Diameter, in. (mm)	Tolerances, in. (mm)	
	Plus	Minus
Up to 1 (25.4) incl	0.005 (0.127)	0
Over 1 to 3 (25.4 to 76.2) incl	0.010 (0.254)	0
Over 3 to 12 (76.2 to 305) incl	0.015 (0.381)	0
Over 12 to 14 (305 to 356) incl	0.020 (0.508)	0
Over 14 (356)	0.030 (0.762)	0

TABLE 8 Permissible Variation in Thickness of Disks (Blanks)

Thickness, in. (mm)	Permissible Variations in Thickness, in. (mm)	
	Plus	Minus
Up to 0.150 (3.81) incl	0.005 (0.127)	0
Over 0.150 to 0.300 (3.81 to 7.62) incl	0.006 (0.152)	0
Over 0.300 to 0.400 (7.62 to 10.16) incl	0.008 (0.203)	0
Over 0.400 to 0.600 (10.16 to 15.24) incl	0.015 (0.381)	0
Over 0.600 to 0.900 (15.24 to 22.86) incl	0.020 (0.508)	0
Over 0.900 (22.86)	0.030 (0.762)	0

is horizontal. The maximum depth of arc shall be measured to the nearest 1/32 in. (0.8 mm) by means of a straightedge and a steel scale.

12. Workmanship, Finish, and Appearance

12.1 Cartridge brass shall be free of defects, and it shall be well cleaned and free of dirt.

12.2 In addition to the above requirement, cartridge brass disks shall be free of oxidation, pinholes, surface splits, dirt inclusions, segregations, or any other defects. They shall be free of oil and grease, acid, dirt, grit of any kind, and shall be clean and bright.

13. Sampling

13.1 The lot size, portion size, and selection of pieces for materials purchased shall be as follows:

13.1.1 *Lot Size*—20 000 lb (9070 kg) or fraction thereof.

13.1.2 *Portion Size*—Pieces from at least ten individual lengths of the finished product. If the lot consists of less than the number of lengths indicated in the portion size, a piece shall be taken from each individual length.

13.2 For materials purchased by the U.S. Government, sampling shall be accomplished as follows:

13.2.1 The lot size, portion size, and selection of pieces shall conform to the sampling plan of **Table 9** for chemical

TABLE 9 Sampling for U.S. Government Contracts

NOTE 1—If the number of original castings from which the material is processed is less than the number of samples specified, not more than one sample need be taken from each piece for chemical analysis. Similarly, if the number of individually processed master coils is less than the number of samples specified, not more than two samples need be taken from each master coil for tension and grain size testing.

Lot Size, lb	Chemical Analysis	Tension Test	Grain Size Test	Mercurous Nitrate Test
Plate, sheet, strip, and bar:				
up to 2000	2	2	5	...
2001 to 20 000	4	4	10	...
Disks:				
Up to 20 000	4	1	2	1
20 001 to 40 000	8	2	4	2
40 001 to 60 000	12	3	6	3
60 001 to 80 000	16	4	8	4
80 001 to 100 000	20	5	10	5

analysis, for tension tests, for grain size determinations and for the residual stress test.

13.2.2 *Sampling for Visual and Dimensional Examination*—If the weight of each piece is more than 150 lb (68 kg), every piece shall be examined. If the weight of each piece is 150 lb or less, a representative specimen shall be visually examined to determine compliance with the requirements of the contract for identification marking and workmanship, and shall be measured for compliance with the dimensional requirements of this specification and the contract.

13.3 When material is furnished in rolls or on reels or spools, the sample for examination shall be taken within 10 ft (3.0 m) of the outer end. If the sample is rejected due to handling marks, an additional 20 ft (6.1 m) shall be selected for examination.

13.4 *Chemical Analysis*—A sample for chemical analysis shall be taken and prepared in accordance with Practice E255. Drilling, millings, etc., shall be taken in approximately equal weight from each of the sample pieces selected in accordance with 13.1.2 or 13.2.1 and combined into composite samples. The minimum weight of the composite sample that is to be divided into three equal parts shall be 150 g. The maximum number of samples from which a composite sample may be made shall be ten.

13.4.1 Instead of sampling in accordance with Practice E255, the manufacturer shall have the option of determining conformance to chemical composition as follows: Conformance shall be determined by the manufacturer by analyzing samples taken at the time the castings are poured or samples taken from the semifinished product. If the manufacturer determines the chemical composition of the material during the course of manufacture, he shall not be required to sample and analyze the finished product. The number of samples taken for determination of chemical composition shall be as follows:

13.4.1.1 When samples are taken at the time the castings are poured, at least one sample shall be taken for each group of castings poured simultaneously from the same source of molten metal.

13.4.1.2 When samples are taken from the semi-finished product, a sample shall be taken to represent each 10 000 lb (4540 kg) or fraction thereof, except that not more than one sample shall be required per piece.

14. Number of Tests and Retests

14.1 Tests:

14.1.1 *Chemical Analysis*—Chemical composition shall be determined in accordance with the element mean of the results from at least two replicate analyses of the sample(s).

14.2 *Other Tests*—Other tests shall be performed using the samples selected in accordance with 13.1.2 or 13.2, as appropriate. The required tests shall be made on each of the specimens so selected.

14.3 Retest:

14.3.1 When requested by the manufacturer or supplier, a retest shall be permitted when results of tests obtained by the purchaser fail to conform to the requirements of the product specification.

14.3.2 The retest shall be directed in the product specification for the initial test, except the number of test specimens shall be twice that normally required for the specified test.

14.3.3 All test specimens shall conform to the product specification requirement(s) in retest. Failure to conform shall be cause for rejection.

15. Specimen Preparation

15.1 Chemical Analysis:

15.1.1 Preparation of the analytical specimen shall be the responsibility of the reporting laboratory.

15.2 Grain Size:

15.2.1 The test specimen shall be prepared in accordance with Guide E3.

15.3 Tensile Test:

15.3.1 For tension testing, machined test specimens as specified in Test Methods E8/E8M shall be used. Specimens shall be taken so that the longitudinal axis of such specimens is parallel to the direction of rolling.

15.3.2 If the diameter of the disk is less than the minimum specimen length required for the performance of the test, specimens shall be taken from the original material for which the disks were blanked.

15.3.3 In the event that disks are to be annealed subsequent to blanking and the disk diameter will not provide the required specimen length, the necessary pieces of original material shall be prepared and annealed with the disks that these samples are to represent.

16. Test Methods

16.1 Chemical Analysis:

16.1.1 In cases of disagreement, test methods for chemical analysis shall be subject to agreement between the manufacturer or supplier and purchaser. The following table is a list of published methods, some of which may no longer be viable, which along with others not listed, may be used subject to agreement:

Element	Test Methods
Copper	E478
Lead	E478 (AA)
Iron	E478
Zinc	E478 (Titrimetric)

16.1.2 Since no recognized test method is known to be published, the determination of bismuth shall be subject to the agreement between the manufacturer and purchaser.

16.1.3 Test methods to be followed for the determination of elements resulting from contractual or purchase order agreement shall be as agreed upon between the manufacturer or supplier and the purchaser.

16.2 Other Tests:

16.2.1 The product furnished shall conform with the specified requirements when subjected to test in accordance with the following table:

Test	Method
Tensile strength	E8/E8M
Grain size	E112

17. Significance of Numerical Limits

17.1 For the purpose of determining compliance with the specified limits for requirements of the properties listed in the following table and for dimensional tolerances, an observed value or a calculated value shall be rounded as indicated in accordance with the rounding method of Practice E29:

Property	Rounded Unit for Observed or Calculated Value
Chemical composition	Nearest unit in the last right-hand significant digit used in expressing the limiting value
Hardness	
Electrical resistivity	
Electrical conductivity	
Tensile strength	Nearest ksi (5 MPa)
Yield Strength	
Elongation	Nearest 1 %
Grain size	
Under 0.060 mm	Nearest multiple of 0.005 mm
0.060 mm and over	
	Nearest 0.01 mm

18. Inspection

18.1 The manufacturer, or supplier, shall inspect and make tests necessary to verify the furnished product conforms to specification requirements.

18.2 Source inspection of the product by the purchaser may be agreed upon between the manufacturer, or supplier, and the purchaser as part of the purchase order. In such case, the nature of the facilities needed to satisfy the inspector, representing the purchaser, that the product is being furnished in accordance with the specification, shall be included in the agreement. All testing and inspection shall be conducted so as not to interfere unnecessarily with the operation of the works.

18.3 When mutually agreed upon, the manufacturer, or supplier, and the purchaser shall conduct the final inspection simultaneously.

19. Rejection and Rehearing

19.1 Rejection:

19.1.1 Product that fails to conform to the specification requirements when tested by the purchaser or purchaser's agent shall be subject to rejection.

19.1.2 Samples that represent rejected material shall be preserved for two weeks from the date of the test report. In case of dissatisfaction with the results of the tests, the producer or supplier may make claim for a rehearing within this time period.

19.1.3 Material that shows injurious defects during subsequent manufacturing operations may be rejected. If rejected,

the producer or supplier shall be responsible only for replacement of the material to the purchaser. As much of the rejected original material as possible shall be returned to the producer or supplier.

19.1.4 For visual and dimensional examination of materials purchased by the U.S. Government, any sample unit having one or more defects shall be rejected.

19.2 Rehearing:

19.2.1 As a result of product rejection, the manufacturer, or supplier, shall have the option to make claim for a retest to be conducted by the manufacturer, or supplier, and the purchaser.

19.2.2 Samples of the rejected product shall be taken in accordance with the product specification and subjected to test by both parties using the test method(s) specified in the product specification, or alternatively, upon agreement of both parties, an independent laboratory may be selected for the test(s) using the test method(s) specified in the product specification.

20. Certification

20.1 When specified in the purchase order or contract, the purchaser shall be furnished certification that samples representing each lot have been tested and inspected as directed in this specification and requirements have been met.

21. Test Report

21.1 When specified in the contract or purchase order, a report of test results shall be furnished.

22. Product Marking

22.1 When specified in the contract or purchaser order, all material shall be properly marked for identification or classification with the name or brand of the producer, commercial designations, and specification information (that is, type, class, and so forth). The method of marking shall be at the manufacturer's option and may be made by stamping, stenciling, casting, rolled-raised lettering, tagging, or labeling, as suited to the product.

22.2 For U.S. Government applications, all material shall, when specified, be marked in accordance with Fed. Std. No. 185 except that the ASTM specification number and the alloy number shall be used.

23. Keywords

23.1 bar; brass bar; brass disks (blanks); brass plate; brass sheet; brass strip; cartridge brass bar; cartridge brass disks (blanks); cartridge brass plate; cartridge brass sheet; cartridge brass strip; disks (blanks); plate; strip; UNS No. C26000

SUMMARY OF CHANGES

Committee B05 has identified the location of selected changes to this standard since the last issue (B19 – 10) that may impact the use of this standard. (Approved May 1, 2015.)

(1) Corrected items regarding Form and Style.

ASTM International takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.

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