



Standard Specification for Copper-Zinc-Tin and Copper-Zinc-Tin-Iron-Nickel Alloys Plate, Sheet, Strip, and Rolled Bar¹

This standard is issued under the fixed designation B 591; 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 the requirements for specified copper-zinc-tin alloys and copper-zinc-tin-iron-nickel alloys in the form of plate, sheet, strip, and rolled bar. The alloys and nominal compositions are as follows:

Copper Alloy UNS No. ²	Copper, %	Tin, %	Zinc, %	Phos., %%	Iron, %	Nickel, %
C40500	95	1	4			
C40810	95.5	2.0	2.22	0.03	0.1	0.15
C40850	95.5	3.0	1.27	0.03	0.1	0.1
C40860	94.8	2.0	3.04	0.03	0.03	0.1
C41100	91	0.5	8.5			
C41300	91	1	8			
C41500	91	2	7			
C42200	87	1	12			
C42500	88	2	10			
C42520	89.8	2.0	7.97	0.03	0.1	0.1
C43000	85	2	13			
C43400	85	0.7	14.3			

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.

2. Referenced Documents

2.1 ASTM Standards:

B 248 Specification for General Requirements for Wrought Copper and Copper-Alloy Plate, Sheet, Strip, and Rolled Bar³

B 601 Practice for Temper Designations for Copper and Copper Alloys—Wrought and Cast³

B 846 Terminology for Copper and Copper Alloys³

E 8 Test Methods for Tension Testing of Metallic Materials⁴

E 62 Test Methods for Chemical Analysis of Copper and Copper Alloys (Photometric)⁵

E 76 Test Methods for Chemical Analysis of Nickel-Copper Alloys⁵

E 112 Test Methods for Determining the Average Grain Size⁴

E 255 Practice for Sampling Copper and Copper Alloys for Determination of Chemical Composition⁵

E 478 Test Methods for Chemical Analysis of Copper Alloys⁶

E 527 Practice for Numbering Metals and Alloys (UNS)⁷

3. Terminology

3.1 *Definitions*—For standard terms related to copper and copper alloys, refer to Terminology B 846.

4. General Requirements

4.1 The following sections of Specification B 248 constitute a part of this specification:

- 4.1.1 Terminology—Definitions,
- 4.1.2 Materials and Manufacturing,
- 4.1.3 Workmanship, Finish, and Appearance,
- 4.1.4 Sampling—except for chemical analysis,
- 4.1.5 Number of Tests and Retests,
- 4.1.6 Specimen Preparation,
- 4.1.7 Test Methods—except for chemical analysis,
- 4.1.8 Significance of Numerical Limits,
- 4.1.9 Inspection,
- 4.1.10 Rejection and Rehearing,
- 4.1.11 Certification,
- 4.1.12 Test Reports (Mill),
- 4.1.13 Packaging and Package Marking, and
- 4.1.14 Supplementary Requirements.

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 New designations established in accordance with Practice E 527. In the new UNS system the designations for copper alloys are simply expansions of the present standard designations by a prefix “C” and a suffix “00.”

³ *Annual Book of ASTM Standards*, Vol 02.01.

⁴ *Annual Book of ASTM Standards*, Vol 03.01.

⁵ *Annual Book of ASTM Standards*, Vol 03.05.

⁶ *Annual Book of ASTM Standards*, Vol 03.06.

⁷ *Annual Book of ASTM Standards*, Vol 01.01.

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