



Standard Terminology for Copper and Copper Alloys¹

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1. Scope*

1.1 The terms defined in this terminology standard are applicable to copper and copper alloy products specifications, test methods, practices, and other documents within the jurisdiction of Committee B05 on Copper and Copper Alloys.

2. Referenced Documents

2.1 ASTM Standards:²

B153 Test Method for Expansion (Pin Test) of Copper and Copper-Alloy Pipe and Tubing

B170 Specification for Oxygen-Free Electrolytic Copper—Refinery Shapes

B379 Specification for Phosphorized Coppers—Refinery Shapes

E8 Test Methods for Tension Testing of Metallic Materials

E10 Test Method for Brinell Hardness of Metallic Materials

E18 Test Methods for Rockwell Hardness of Metallic Materials

E23 Test Methods for Notched Bar Impact Testing of Metallic Materials

E112 Test Methods for Determining Average Grain Size

3. Significance and Use

3.1 This terminology is not intended to apply to any standard, test method, practice, or other document not within the jurisdiction of Committee B05 on Copper and Copper Alloys.

4. Terminology

acid dip—see **dip solution**.

acid dipped-dry rolled finish—see **finish, acid dipped-dry rolled**.

¹ This terminology is under the jurisdiction of ASTM Committee B05 on Copper and Copper Alloys and is the direct responsibility of Subcommittee B05.93 on Terminology.

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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.

Admiralty—an alloy containing nominally 71 % copper: 1 % tin and 28 % zinc, originally developed by the British Admiralty and generally available in tube, flat products, and wire. Its principal use is in heat exchanger and condenser tubes. An inhibitor may be added to increase the resistance to dezincification.

Admiralty, inhibited (arsenical, antimonial or phosphorized)—admiralty modified by the addition of small amounts of arsenic, antimony or phosphorus to inhibit dezincification. (Copper Alloy Nos. C44300, C44400, C44500)

air stain—see **stain, air**.

alpha—the name of a phase or of a certain range of copper alloys which contain one or more alloying elements dissolved in copper, the phase being a homogeneous solid solution.

alpha beta brass—a series of copper-zinc alloys containing approximately 55 to 63 % copper and the remainder mostly, if not all, zinc and composed of crystals or grains of both the alpha and the beta phases.

aluminum brass—a copper alloy containing nominally 77.5 % copper, 2 % aluminum and 20.5 % zinc with an arsenical inhibitor, available in tube form. Its principal use is in heat exchanger and condenser tubes. (Copper Alloy No. C68700)

aluminum bronze—copper alloys with aluminum as the principal alloying element, normally in the range of 3 to 11 % with or without the additions of other elements. (Copper Alloy Nos. C60800 – 64699 incl.)

anneal (annealing)—a thermal treatment to change the properties or grain structure of the product. When applied to a cold-worked product having a single phase: to produce softening by recrystallization or recrystallization and grain growth, with the accompanying changes in properties. When applied to a product having two or more phases: to produce softening by changes in the phase relationship that may include recrystallization and grain growth.

annealability of copper rod—the ease with which a material will soften after cold work and subsequent thermal treatments; this property is affected primarily by the purity of the metal since all other variables are kept constant.

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