



Standard Specification for Seamless Copper Tube for Medical Gas Systems¹

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1. Scope*

1.1 This specification establishes the requirements for two wall thickness schedules of specially cleaned, straight lengths of seamless copper tube, identified as Types K and L, suitable for medical gas systems. The tube shall be installed in conformance with the requirements of the National Fire Protection Association (NFPA) Standard 99, Gas and Vacuum Systems (NFPA) Standard 99C, Standard for Hypobaric Facilities (NFPA) Standard 99B, and Canadian Standards Association (CSA) Standard Z 305.1/Z 7396.1, Nonflammable Medical Gas Piping Systems.

NOTE 1—Types K and L tube are defined in Specification B88.

NOTE 2—Drawn temper tube is suitable for use with capillary (solder joint) fittings for brazing.

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 that are provided for information only and are not considered standard.

1.3 The following safety hazard caveat pertains only to the test method portion of Section 12 of this specification. *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

2. Referenced Documents

2.1 ASTM Standards:³

B88 Specification for Seamless Copper Water Tube

B251 Specification for General Requirements for Wrought

Seamless Copper and Copper-Alloy Tube

B280 Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service

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

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

E53 Test Method for Determination of Copper in Unalloyed Copper by Gravimetry

E62 Test Methods for Chemical Analysis of Copper and Copper Alloys (Photometric Methods) (Withdrawn 2010)⁴

E243 Practice for Electromagnetic (Eddy Current) Examination of Copper and Copper-Alloy Tubes

E255 Practice for Sampling Copper and Copper Alloys for the Determination of Chemical Composition

E527 Practice for Numbering Metals and Alloys in the Unified Numbering System (UNS)

2.2 Other Standards:

National Fire Protection Association (NFPA) 99, Gas and Vacuum Systems (NFPA) 99C and Standard for Hypobaric Facilities (NFPA) 99B⁵

Compressed Gas Association (CGA) G-4.1, Cleaning Equipment for Oxygen Service⁶

Canadian Standards Association (CSA) Z 305.1/Z 7396.1, Nonflammable Medical Gas Piping Systems⁷

3. Terminology

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

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *lengths*—straight pieces of the product.

¹ This specification is under the jurisdiction of ASTM Committee B05 on Copper and Copper Alloys and is the direct responsibility of Subcommittee B05.04 on Pipe and Tube.

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² The UNS system for copper and copper alloys (see Practice E527) is a simple expansion of the former standard system accomplished by the addition of a prefix “C” and a suffix “00”. The suffix can be used to accommodate composition variation 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.

⁴ The last approved version of this historical standard is referenced on www.astm.org.

⁵ Available from National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, Massachusetts 02269, <http://www.nfpa.org>.

⁶ Available from Compressed Gas Association, 14501 George Carter Way, Suite 103, Chantilly VA 20151-2923, <http://www.cganet.com>.

⁷ Available from Canadian Standards Association (CSA), 5060 Spectrum Way, Suite 100 Mississauga, Ontario Canada, L4W 5N6, <http://www.csa.ca>.