



Standard Specification for Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube ¹

This standard is issued under the fixed designation B813; 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.

INTRODUCTION

This specification covers a series of specific requirements for liquid and paste fluxes. It also incorporates a series of test methods that establish the procedures on how to measure these properties. The format of this specification initially defines the specification requirements followed by the specific test methods in the order in which they are to be performed.

1. Scope*

1.1 This specification establishes the requirements and test methods for liquid and paste fluxes for joining by soldering of copper and copper alloy tube and fittings in plumbing, heating, air conditioning, mechanical, fire sprinkler, and other similar systems.

NOTE 1—This specification does not apply to fluxes intended for electronic applications.

1.2 Solder fluxes are to be tested in accordance with the requirements of this specification by an independent testing laboratory. Testing, measuring equipment, and inspection facilities shall be of sufficient accuracy and quality to comply with the requirements of this specification.

1.3 *Units*—The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.4 The following hazard caveat pertains to Sections 11 – 19. *This standard does not purport to address the safety problems, 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 The following documents of the issue in effect on the date of materials purchase form a part of this specification to the extent referenced herein:

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

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2.2 ASTM Standards:²

B32 Specification for Solder Metal

B88 Specification for Seamless Copper Water Tube

B88M Specification for Seamless Copper Water Tube (Metric)

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

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

B846 Terminology for Copper and Copper Alloys

D130 Test Method for Corrosiveness to Copper from Petroleum Products by Copper Strip Test

D1200 Test Method for Viscosity by Ford Viscosity Cup

2.3 Other:

1986 Amendments to the Safe Drinking Water Act³

3. General Requirements

3.1 The flux shall be suitable for joining copper tube and fittings by soldering in the size ranges shown in Table 1 of Specifications B88 and B88M and Tables 4 and 5 of Specification B280.

3.2 The flux shall remain active over the temperature range of the soldering operation, removing and excluding oxides from the metal surfaces in the joint.

3.3 The flux shall be suitable for use with all solders listed in Table 5 of Specification B32 as well as the more recently

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.

³ Available from U.S. Government Publishing Office, 732 North Capitol Street, NW, Washington, DC 20401-0001, www.gpo.gov.

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