



Designation: B 66 – 95

Standard Specification for Bronze Castings for Steam Locomotive Wearing Parts¹

This standard is issued under the fixed designation B 66; 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 establishes requirements for bronze castings for steam locomotive wearing parts. Historically the alloys in this specification have been used in the applications listed in the Appendix. Actual practice may vary according to locomotive type and service.

1.2 The values stated in inch-pound units are the standard.²

2. Referenced Documents

2.1 *ASTM Standards*: The following documents in the current issue of the Book of Standards form a part of this specification to the extent referenced herein:

B 824 Specification for General Requirements for Copper Alloy Castings³

B 846 Terminology for Copper and Copper Alloys³

E 527 Practice for Numbering Metals and Alloys (UNS)⁴

2.2 *AAR Standards*:

M-503 Bronze Bearings for Locomotives⁵

3. Terminology

3.1 Definitions of terms relating to copper alloys can be found in Terminology B 846.

4. Ordering Information

4.1 Orders for castings under this specification should include the following information:

4.1.1 Specification title, number, and year of issue,

4.1.2 Quantity of castings,

4.1.3 Copper Alloy UNS Number (Table 1),

4.1.4 Pattern or drawing number and condition (as cast, machined, etc.).

4.2 The following are optional and should be specified in the purchase order when required:

4.2.1 Chemical analysis of residual elements, if specified in the purchase order (Section 5.3),

4.2.2 Pressure test or soundness requirements (Specification B 824),

4.2.3 Certification (Specification B 824),

4.2.4 Foundry test report (Specification B 824),

4.2.5 Witness inspection (Specification B 824), and

4.2.6 Product marking (Section 7).

5. Chemical Composition

5.1 The castings shall conform to the compositional requirements for named elements shown in Table 1 for the Copper Alloy UNS Numbers specified in the purchase order.

5.2 These specification limits do not preclude the presence of other elements. Limits may be established and analysis required for unnamed elements agreed upon between the manufacturer or supplier and the purchaser. Copper or zinc may be given as remainder and may be taken as the difference between the sum of all elements analyzed and 100 %. When all named elements in Table 1 are analyzed, their sum shall be as specified in Table 2.

5.3 It is recognized that residual elements may be present in cast copper base alloys. Analysis shall be made for residual elements only when specified in the purchase order.

6. Casting Repair

6.1 The castings shall not be repaired, plugged, welded, or burned-in.

7. Test Methods

7.1 Analytical chemical methods are given in Specification B 824 (Section 12).

¹ This practice is under the jurisdiction of ASTM Committee B05 on Copper and Copper Alloys and is the direct responsibility of Subcommittee B05.05 on Castings and Ingots for Remelting.

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² The UNS system for copper and copper alloys (see Practice E 527) is a simple expansion of the former standard designation system accomplished by the addition of a prefix “C” and a suffix “00”. The suffix can be used to accommodate composition variations of the base alloy.

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

⁴ *Annual Book of ASTM Standards*, Vol 01.01.

⁵ Available from Association of American Railroads, Mechanical Division, 50 F Street NW, Washington, DC 20001.

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