



AEROSPACE MATERIAL SPECIFICATION

AMS4842™**REV. G**

Issued 1941-09
Reaffirmed 2012-02
Revised 2025-06

Superseding AMS4842F

Castings, Leaded Bronze, Sand and Centrifugal,
80Cu - 10Sn - 9.5Pb,
As Cast

(Composition similar to UNS C93700)

RATIONALE

AMS4842G results from a Five-Year Review and update of this specification with changes to clarify that casting approval and reapproval actions are to be carried out by the cognizant engineering organization (see 4.2.1 and 4.4); update wording to prohibit unauthorized exceptions (see 8.5); relocate Definitions (see 2.3); update Applicable Documents (see Section 2), note on historical change to composition (see 8.2), Classification of Tests (see 4.2), and Ordering Information (see 8.6); remove nonspecific test method language for Composition (see 3.1); and allow the use of the immediate prior specification revision (see 8.4).

1. SCOPE

1.1 Form

This specification covers a leaded bronze in the form of sand and centrifugal castings (see 8.6).

1.2 Application

These castings have been used typically for bearings requiring excellent anti-friction properties and resistance to corrosion, but usage is not limited to such applications. Alloy has good machinability under high speeds and heavy loads.

2. APPLICABLE DOCUMENTS

The issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been cancelled and no superseding document has been specified, the last published issue of that document shall apply.

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

AMS2175 Castings, Classification and Inspection of

AMS2694 In-Process Welding of Castings

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Full document details: SAE AMS4842G

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<https://www.sae.org/standards/content/AMS4842G/>

Documents

Standard, visit Sharing Hub

AMS2804 Identification, Castings

AS7766 Terms Used in Aerospace Metals Specifications

2.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM B824 General Requirements for Copper Alloy Castings

ASTM E18 Rockwell Hardness of Metallic Materials

ASTM E1220 Visible Penetrant Examination Using the Solvent-Removable Process

ASTM E1417/E1417M Liquid Penetrant Testing

ASTM E1742/E1742M Radiographic Examination

2.3 Definitions

Terms used in AMS are defined in AS7766.

3. TECHNICAL REQUIREMENTS

3.1 Composition

Shall conform to the percentages by weight shown in Table 1, determined in accordance with ASTM B824 or other analytical methods approved by the purchaser:

Table 1 - Composition

Element (see 3.1.1 and 3.1.3)	Min	Max
Copper (see 3.1.2 and 3.1.5)	78.0	82.0
Tin	9.0	11.0
Lead	8.0	11.0
Nickel (incl Copper) (see 3.1.2)	--	0.50
Zinc	--	0.8
Antimony	--	0.50
Iron	--	0.15
Phosphorus	--	0.10
Sulfur	--	0.08
Aluminum	--	0.005
Silicon	--	0.005

3.1.1 These composition limits do not preclude the presence of other elements. Limits may be established, and analysis required, for unnamed elements by agreement between the manufacturer or supplier and purchaser.

3.1.2 In determining copper minimum, copper may be calculated as copper plus nickel.

3.1.3 Copper may be reported as the difference between the sum of results for all elements. When all named elements in Table 1 are analyzed, the sum shall be 99.0% minimum, but such determination is not required for routine acceptance of each lot.

3.1.4 Copper may be reported as "remainder," or as the difference between the sum of results for all elements and 100%, or as the result of direct analysis.