



AEROSPACE MATERIAL SPECIFICATION

AMS4713

REV. F

Issued 1945-07
Revised 2003-08
Reaffirmed 2014-04

Superseding AMS4713E

Brass, Wire
65Cu - 35Zn
Eighth-Hard (H00)
(Composition similar to UNS C27000)

RATIONALE

AMS4713F has been reaffirmed to comply with the SAE five-year review policy.

1. SCOPE:

1.1 Form:

This specification covers one type of brass in the form of wire.

1.2 Application:

This brass wire has been used typically for cold-headed parts such as pins and rivets, but usage is not limited to such applications.

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 supplied 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, 400 Commonwealth Drive, Warrendale, PA 15096-0001 or www.sae.org.

AMS 2224 Tolerances, Copper and Copper Alloy Wire

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2.2 ASTM Publications:

Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959 or www.astm.org.

ASTM B 250	General Requirements for Wrought Copper-Alloy Wire
ASTM B 250M	General Requirements for Wrought Copper-Alloy Wire (Metric)
ASTM E 8	Tension Testing of Metallic Materials
ASTM E 8M	Tension Testing of Metallic Materials (Metric)
ASTM E 478	Chemical Analysis of Copper Alloys

3. TECHNICAL REQUIREMENTS:

3.1 Wire Composition:

Shall conform to the percentages by weight shown in Table 1, determined by wet chemical methods in accordance with ASTM E 478, by spectrochemical methods, or by other analytical methods acceptable to purchaser.

Element (3.1.1)	Composition	
	min	max
Copper	63.0	68.5
Lead	--	0.10
Iron	--	0.07
Zinc (3.1.2)	remainder	
Sum of Named Elements (3.1.3)	99.7	--

- 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 Zinc 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.
- 3.1.3 When all the elements in the table are analyzed, the sum shall be 99.7% minimum, but such determination is not required for routine acceptance of each lot.

3.2 Condition:

Cold-drawn or cold-rolled, eighth-hard (H00) temper (See 8.2).

3.3 Properties:

Wire shall conform to the following requirements:

- 3.3.1 Tensile Strength: Shall be 50.0 to 65.0 ksi (345 to 448 MPa), determined in accordance with ASTM E 8 or ASTM E 8M.

3.4 Quality:

Wire, as received by purchaser, shall be uniform in quality and condition, sound, and free from foreign materials and from imperfections detrimental to usage of the wire.

3.5 Tolerances:

Shall conform to AMS 2224 as applicable to nonrefractory alloys.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for Inspection:

The vendor of wire shall supply all samples for vendor's tests and shall be responsible for the performance of all required tests. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the wire conforms to specified requirements.

4.2 Classification of Tests:

All technical requirements are acceptance tests and shall be performed on each lot.

4.3 Sampling and Testing:

Shall be in accordance with ASTM B 250 or ASTM B 250M.

4.4 Reports:

The vendor of wire shall furnish with each shipment a report showing the results of tests on each lot for composition and tensile strength and stating that the wire conforms to the other technical requirements. This report shall include the purchase order number, lot number, AMS 4713F, nominal size, and quantity.

4.5 Resampling and Retesting:

If any specimen used in the above tests fails to meet specified requirements, disposition of the wire may be based on the results of testing two additional specimens for each original nonconforming specimen. Failure of any retest specimen to meet specified requirements shall be cause for rejection of the wire represented. Results of all tests shall be reported.

5. PREPARATION FOR DELIVERY:

5.1 Wire shall be supplied on spools or in coils except when straight lengths are ordered.

5.2 Identification:

5.2.1 Spools and Coils: Shall be legibly marked with a durable tag or label showing not less than the manufacturer's identification, purchase order number, lot number, AMS 4713F, nominal size, and quantity; boxes or drums shall be marked with the same information.

5.2.2 Straight Lengths: Shall have attached to each bundle or enclosed in each box a durable tag or label marked with the information of 5.2.1; when boxed, the box shall be marked with the same information.

5.3 Packaging:

5.3.1 Spools and Coils: Coils shall be individually wrapped with waterproof paper or packed in waterproof drums. Spools, when ordered, shall be boxed.

5.3.2 Straight Lengths: Shall be supplied in bundles or shall be boxed.

5.3.3 Packages of wire shall be prepared for shipment in accordance with commercial practice and in compliance with applicable rules and regulations pertaining to the handling, packaging, and transportation of the wire to ensure carrier acceptance and safe delivery.

6. ACKNOWLEDGMENT:

A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.

7. REJECTIONS:

Wire not conforming to this specification, or to modifications authorized by purchaser, will be subject to rejection.

8. NOTES:

8.1 A change bar (|) located in the left margin is for the convenience of the user in locating areas where technical revisions, not editorial changes, have been made to the previous issue of a specification. An (R) symbol to the left of the document title indicates a complete revision of the specification. Change bars and (R) are not used in original publications, nor in specifications that contain editorial changes only.

8.2 Copper temper designations are defined in ASTM B 601.

8.3 Terms used in AMS are clarified in ARP1917.