



AEROSPACE MATERIAL SPECIFICATION

AMS7731™**REV. E**

Issued 1970-11
Reaffirmed 2012-09
Revised 2026-07

Superseding AMS7731D

Gold Wire and Ribbon,
99.97Au,
Annealed

(Composition similar to UNS P00020)

RATIONALE

AMS7731E results from a Five-Year Review and update of this specification with changes to update wording to prohibit unauthorized exceptions (see 3.3.1.1, 3.6, and 8.4), relocate Definitions (see 2.3), and update Applicable Documents (see Section 2) and Sampling and Testing (see 4.3.1 and 4.3.2).

1. SCOPE

1.1 Form

This specification covers pure gold in the form of wire 0.005 to 0.040 inch (0.012 to 1.000 mm), inclusive, in nominal diameter and ribbon 0.002 to 0.051 inch (0.05 to 1.28 mm), inclusive, in nominal thickness (see 8.5).

1.2 Application

This product has been used typically for electronic components requiring essentially nonmagnetic properties, 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 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: 1-877-606-7323 (U.S. and Canada only) or 1-724-776-4970 (outside U.S. and Canada), www.sae.org.

AS7766 Terms Used in Aerospace Metals Specifications

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Documents

Standard, visit Sharing Hub

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 E8/E8M Tension Testing of Metallic Materials

2.3 Definitions

Terms used in AMS are defined in AS7766.

3. TECHNICAL REQUIREMENTS

3.1 Composition

Shall be not less than 99.97% by weight gold, determined by spectrochemical or other analytical methods approved by the purchaser.

3.2 Condition

Cold drawn or cold rolled, annealed, and descaled or bright annealed.

3.3 Properties

The product shall conform to the following requirements:

3.3.1 Tensile Strength

Shall be not greater than 22.0 ksi (150 MPa), determined in accordance with ASTM E8/E8M.

3.3.1.1 Mechanical property requirements for wire and ribbon outside the thickness range of 1.1 shall be as agreed upon by the purchaser and producer and reported per 4.4.2 (see 8.5).

3.4 Quality

The product, as received by the purchaser, shall be uniform in quality, condition, temper, and cross section. Product surfaces, evaluated at up to 30X magnification, shall be free from scale, corrosion, cracks, seams, scratches, slivers, dirt, grease, oil, streaks, stains, pit marks, burns, dents, blisters, laps, grooves, inclusions, and other imperfections detrimental to usage of the product.

3.5 Tolerances

The product shall be supplied in the following sizes and to the tolerances shown:

3.5.1 Round Wire (Cold Drawn)

Shall be as shown in Table 1.

Table 1A - Diameter tolerances, inch/pound units

Nominal Diameter Inches	Tolerance, Inches Plus and Minus
0.0005	0.0001
0.0007	0.0001
0.0010	0.00015
0.0015	0.00015
0.0020	0.00015
0.0030	0.0002
0.0040	0.0002
0.0060	0.0002
0.0080	0.0003
0.0120	0.0003
0.0160	0.0004
0.0200	0.0005
0.0250	0.0005
0.0320	0.0006
0.0400	0.0006

Table 1B - Diameter tolerances, SI units

Nominal Diameter Millimeters	Tolerance, Millimeters Plus and Minus
0.012	0.002
0.18	0.002
0.25	0.0038
0.38	0.0038
0.50	0.0038
0.075	0.005
0.100	0.005
0.150	0.005
0.200	0.008
0.300	0.008
0.400	0.010
0.500	0.012
0.625	0.012
0.800	0.015
1.000	0.015

3.5.2 Ribbon (Cold Rolled)

3.5.2.1 Thickness

Shall be as shown in Table 2.