



AEROSPACE MATERIAL SPECIFICATION

AMS2662™**REV. A**

Issued 1998-11
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Revised 2025-07

Superseding AMS2662

Brazing, Gold-Nickel Alloy Filler Metal

RATIONALE

AMS2662A results from a Five-Year Review and update of this specification with the addition of Ordering Information and Authority (see 1.4) and changes to Equipment (see 3.2), Assembly (see 3.4.3), Cooling (see 3.5.2), and Periodic Tests (see 4.3.2).

NOTICE

ORDERING INFORMATION: The following information shall be provided to the plating processor by the purchaser.

1. The purchase order shall specify not less than the following:

- AMS266A
- Quantity of pieces to be brazed
- Material types of components being joined
- Applicable CEO engineering drawings
- Heat treatment, if required (see 3.6.2)
- Method for determining area joined by filler metal (see 3.7.2)
- If proof pressure testing is specified, the method and acceptance criteria to be used (see 3.7.3)
- Number of joints, parts, or samples for preproduction tests (see 4.3.2)

2. Parts manufacturing operations such as heat treating, forming, joining, and media finishing can affect the condition of the substrate for brazing, or if performed after brazing, could adversely affect the brazed part. The sequencing of these types of operations should be specified by the cognizant engineering organization or the purchaser and is not controlled by this specification.

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SAE WEB ADDRESS:

Full document details: SAE AMS2662A

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Documents

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1. SCOPE

1.1 Purpose

This specification covers the engineering requirements for producing brazed joints in parts made of steels, iron alloys, nickel alloys, and cobalt alloys using gold-nickel alloy filler metal.

1.2 Application

This process has been used typically for joints requiring high strength and corrosion and oxidation resistance up to 1300 °F (704 °C), but usage is not limited to such applications.

1.3 Safety - Hazardous Materials

The materials, methods, applications, and processes described or referenced in this specification do not address the hazards that may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

1.4 Authority

The cognizant engineering organization (CEO) may impose requirements or approve allowances that supersede the requirements in this AMS.

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.

AMS2403	Plating, Nickel, General Purpose
AMS2424	Plating, Nickel, Low-Stressed Deposit
AMS2750	Pyrometry
AMS4784	Gold-Palladium-Nickel Alloy, Brazing Filler Metal, High Temperature, 50Au - 25Pd - 25Ni, 2015 to 2050 °F (1102 to 1121 °C) Solidus-Liquidus Range
AMS4785	Gold-Palladium-Nickel Alloy, Brazing Filler Metal, High Temperature, 30Au - 34Pd - 36Ni, 2075 to 2130 °F (1135 to 1166 °C) Solidus-Liquidus Range
AMS4786	Gold-Palladium-Nickel Alloy, Brazing Filler Metal, High Temperature, 70Au - 8.0Pd - 22Ni, 1845 to 1915 °F (1007 to 1046 °C) Solidus-Liquidus Range
AMS4787	Gold-Nickel Alloy, Brazing Filler Metal, High Temperature, 82Au - 18Ni, 1740 °F (949 °C) Solidus-Liquidus Temperature

3. TECHNICAL REQUIREMENTS

3.1 Materials

3.1.1 Filler Metal

Shall conform to AMS4787 (see 8.1).

3.1.2 Flux

Fluxes shall not be used unless acceptable to the cognizant engineering organization.

3.2 Equipment

Furnaces, with suitable protective atmospheres as defined in 3.3, shall be used for brazing unless electrical induction, electrical resistance heating, or other method is permitted by the cognizant engineering organization. Where brazing is concurrent with heat treatment, the pyrometry requirements of the applicable heat-treatment specification shall be applied. Otherwise, pyrometry shall be in accordance with AMS2750.

3.3 Atmosphere shall be as follows:

3.3.1 Hydrogen of not less than 99.99% purity and dew point not higher than -60 °F (-51 °C).

3.3.2 Argon of not less than 99.99% purity and dew point not higher than -60 °F (-51 °C).

3.3.3 Mixtures of argon and hydrogen in any proportions; the hydrogen purity being as specified in 3.3.1, the argon purity being as specified in 3.3.2, and the dew point of the mixture being not higher than -60 °F (-51 °C).

3.3.4 Vacuum of 5×10^{-4} Torr or lower pressure. Backfill to a higher pressure with a non-oxidizing atmosphere is permitted (see 3.3.2 and 3.3.3).

3.4 Preparation

3.4.1 Surface Condition

The surfaces to be joined shall be clean prior to assembly.

3.4.2 Nickel Plating

Joints shall be prepared as noted in Table 1 by nickel plating faying surfaces in accordance with AMS2403, AMS2424, or other procedure acceptable to the cognizant engineering organization.

Table 1 - Nickel plating thickness requirements for furnace selected atmosphere

Alloy	Nickel Plating Thickness Inches (μm) Vacuum	Nickel Plating Thickness Inches (μm) Non-Oxidizing Gas
Precipitation-Hardenable Iron Alloys with Ti + Al content over 0.4%	0.0001 to 0.0006 (2.5 to 15)	0.0001 to 0.0006 (2.5 to 15)
Precipitation-Hardenable Nickel Alloys with Ti + Al content over 0.4%	0.0001 to 0.0006 (2.5 to 15)	0.0001 to 0.0006 (2.5 to 15)
All Other Alloys	Optional to 0.0006 (15), max	Optional to 0.0006 (15), max

3.4.2.1 Nickel plating on areas other than the faying surface and adjacent fillet is prohibited.