

**AEROSPACE
MATERIAL
SPECIFICATION**

AMS 2669C

Superseding AMS 2669B

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SILVER BRAZING

For Flexible Metal Hose, 800°F (425°C) Max Operating Temperature

1. SCOPE:

1.1 Purpose: This specification covers the engineering requirements for producing brazed joints between flexible metal hose and similar parts, such as bellows and rigid end fittings, and the properties of such joints. Parts are usually made of austenitic corrosion and heat resistant steels but may be carbon or low-alloy steels.

1.2 Application: Primarily for joints requiring high strength up to 800°F (425°C).

2. APPLICABLE DOCUMENTS: The following publications form a part of this specification to the extent specified herein. The latest issue of Aerospace Material Specifications (AMS) shall apply. The applicable issue of other documents shall be as specified in AMS 2350.

2.1 SAE Publications: Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096.

2.1.1 Aerospace Material Specifications:

AMS 2350 - Standards and Test Methods

AMS 3411 - Flux, Silver Brazing, High Temperature

AMS 4772 - Brazing Filler Metal, Silver, 54Ag - 40Cu - 5.0Zn - 1.0Ni,
1325° - 1575°F (720° - 855°C) Solidus-Liquidus Range

2.2 ASTM Publications: Available from American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

ASTM D1179 - Fluoride Ion in Water

2.3 U.S. Government Publications: Available from Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120.

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2.3.1 Military Standards:

MIL-STD-794 - Parts and Equipment, Procedures for Packaging and Packing of

3. TECHNICAL REQUIREMENTS:

3.1 Materials:

3.1.1 Flux: Shall conform to AMS 3411.

3.1.2 Filler Metal: Shall conform to AMS 4772.

3.2 Preparation:

3.2.1 Surface Condition: The surfaces to be joined shall be clean prior to assembly. Surfaces shall not be highly polished.

3.3 Procedure:

3.3.1 Fluxing: Flux as specified in 3.1.1 shall be applied so that the surfaces to be joined are completely coated (See 8.2.1).

3.3.2 Assembly: The parts shall be assembled so that the clearances between mating surfaces will produce optimum coverage by filler metal without appreciable running on surfaces outside the boundaries of the joint area. Sufficient filler metal shall be placed within, or in close proximity to, the joint. The assembly should be supported so that the parts will be in proper alignment after brazing.

3.3.3 Joining: Shall be accomplished by electrical induction, molten filler metal, or torch heating (See 8.2.2 and 8.2.3), unless a specific method of heating is specified. Parts shall be heated until the filler metal melts and the joint is formed. Further heating shall be held to a minimum. Overheating shall be avoided.

3.3.4 Cooling: After brazing, but prior to handling, assemblies shall be cooled for sufficient time to allow the filler metal to solidify and in such a manner as to prevent cracks and minimize internal stress, distortion, and scaling.

3.3.5 Flux Removal: After brazing and cooling, flux shall be removed by a method not injurious to the specified surface finish. The tests of 3.4.3 shall be used to determine that flux has been adequately removed.

3.4 Properties: Brazed parts shall conform to the following requirements:

3.4.1 Coverage: Visual examination of joints shall show an adequate fillet of filler metal at the end of the joint at which the filler metal was introduced.