AEROSPACE MATERIAL SPECIFICATION

AMS4774™	REV. G

Issued 1959-01
Reaffirmed 2009-06
Revised 2015-12

Superseding AMS4774F

Silver Alloy Brazing Filler Metal
63Ag – 28.5Cu – 6.0Sn – 2.5Ni
1275 to 1475 °F (691 to 802 °C) Solidus-Liquidus Range
UNS P07630

RATIONALE

AMS4774G incorporates the industry standard requirements of AWS A5.8 and is a Five Year review and update of this specification.

1. SCOPE

1.1 Form

This specification covers a silver alloy in the form of wire, rod, sheet, strip, foil, pig, powder, shot, and chips and a viscous mixture (paste) of powder in a suitable binder.

1.2 Application

This material has been used typically for joining ferrous metals, including austenitic steels and alloys, requiring moderate joint strength up to 700 °F (371 °C) for short-time service or up to 400 °F (204 °C) for long-time service, and for joining nonferrous metals except those having a base of aluminum, magnesium, or titanium, but usage is not limited to such applications.

1.2.1 The nickel content helps minimize crevice corrosion in corrosion resistant steels.

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.

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
Tel: +1 724-776-4970 (outside USA)
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SAE WEB ADDRESS: **http://www.sae.org**

SAE values your input. To provide feedback on this Technical Report, please visit
http://www.sae.org/technical/standards/AMS4774G

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.

AMS2222 Tolerances, Copper and Copper Alloy Sheet, Strip, and Plate

AMS2224 Tolerances, Copper and Copper Alloy Wire

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 B214 Sieve Analysis of Granular Metal Powders

2.3 AWS Publications

Available from American Welding Society, 8669 NW 36 Street, #130, Miami, FL 33166-6672, Tel: 1-800-443-9353 or 305-443-9353, www.aws.org.

AWS A5.8M/5.8 Specification for Filler Metals for Brazing and Braze Welding

3. TECHNICAL REQUIREMENTS

3.1 Composition

Products shall meet the requirements of AWS A5.8 BAg-21 and the following:

3.2 Condition

As fabricated unless otherwise specified.

3.2.1 Paste

Paste not containing flux (3.2.1.1) shall be supplied unless paste containing flux (3.2.1.1) is specified.

3.2.1.1 Paste Without Flux

Shall consist of 84 to 90% by weight powder in a suitable binder unless otherwise specified by purchaser.

3.2.1.2 Paste Containing Flux

Shall consist of 55 to 80% by weight powder in a suitable binder and flux combination unless otherwise specified by purchaser.

3.3 Properties

3.3.1 Paste shall have a shelf life of not less than six months from date of manufacture; not more than thorough mixing shall be required to restore paste for use during that time.

3.3.2 Paste without flux shall leave no adherent residue when heated in a protective atmosphere to 1000 °F (538 °C) or higher.

3.4 Quality

The product, as received by purchaser, shall be uniform in color, quality, and condition and free from foreign materials and from imperfections detrimental to usage of the filler metal. Wire, rod, sheet, strip, and foil shall be clean, sound, bright, and free from slivers, splitting, ragged edges, damaged ends, and other injurious imperfections. Pig, powder, shot, and chips shall have a metallic luster.

3.5 Sizes and Tolerances

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

3.5.1 Wire and Rod

3.5.1.1 Nominal Diameters

Table 1 - Standard diameter sizes

Inch		Millimeters	
0.005	0.062	0.13	1.57
0.007	0.094	0.18	2.39
0.010	0.125	0.25	3.18
0.015	0.175	0.38	4.44
0.025	0.188	0.64	4.78
0.031	0.225	0.79	5.72
0.040	0.250	1.02	6.35
0.047		1.19	

3.5.1.2 Diameter Tolerances for Wire and Rod

When not specified in AWS A5.8, AMS2224 as applicable to refractory alloys.

3.5.2 Sheet, Strip, and Foil

3.5.2.1 Nominal Thicknesses

Table 2 - Standard thicknesses

Inch		Millimeter	
0.001	0.006	0.025	0.15
0.0015	0.008	0.038	0.20
0.002	0.010	0.05	0.25
0.003	0.014	0.08	0.36
0.004	0.020	0.10	0.51
0.005	0.030	0.13	0.76

3.5.2.2 Tolerances of Sheet, Strip and Foil

3.5.2.2.1 Thickness

In accordance with AWS A5.8 except that no roll shall weigh more than 75 pounds (34 kg).

3.5.3 Powder Sizes

3.5.3.1 Mesh Designations

60, 100, 140, 200, and 325.

3.5.3.2 Powder shall be supplied in accordance with the limits on particle size distribution shown in Table 3 unless some other distribution is specified. Tests shall be in accordance with ASTM B214.

Table 3 - Particle size distribution

Mesh Designation	U.S. Standard Sieve	
60	Through a No. 40 sieve -	100%
	Through a No. 60 sieve -	95% minimum
	Through a No. 325 sieve -	10% maximum
100	Through a No. 60 sieve -	100%
	Through a No. 100 sieve -	95% minimum
	Through a No. 325 sieve -	15% maximum
140C	On a No. 100 sieve -	0.5% maximum
	On a No. 140 sieve -	10% maximum
	Through a No. 325 sieve -	20% maximum
140F	On a No. 100 sieve -	0.5% maximum
	On a No. 140 sieve -	10% maximum
	Through a No. 325 sieve -	55% maximum
200	On a No. 140 sieve -	0.5% maximum
	On a No. 200 sieve -	10% maximum
	Through a No. 325 sieve -	65% maximum
325	On a No. 200 sieve -	0.5% maximum
	On a No. 325 sieve -	10% maximum
	Through a No. 325 sieve -	90% minimum

3.5.3.2.1 When mesh designation is not specified, 140F mesh shall be supplied.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for Inspection

The vendor of the product 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 product conforms to the specified requirements.

4.2 Classification of Tests

4.2.1 Acceptance Tests

All technical requirements, except shelf life of paste (3.3.1), are acceptance tests and shall be performed on each lot.

4.2.2 Periodic Tests

Shelf life of paste (3.3.1) is a periodic test and shall be performed at a frequency selected by the vendor unless frequency of testing is specified by purchaser.