AEROSPACE
MATERIAL SPECIFICATIONS
SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York 17, N.Y.

AMS 2671C

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COPPER FURNACE BRAZING
Corrosion and Heat Resistant Steels and Alloys

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

2. APPLICATION: For joining corrosion and heat resistant steels and alloys. Not recommended for use on parts which will operate at over 1000 F (538 C) or where high strength joints are required at temperatures over 700 F (371 C), or on materials subject to carbide precipitation during cooling from the brazing operation.

3. PROCESS REQUIREMENTS:

3.1 Surface Condition: The surfaces to be joined shall be clean prior to assembly.

3.2 Fluxing: Paste or liquid fluxes shall not be used unless permission be obtained from purchaser before brazing.

3.3 Ø Assembly: The parts to be joined shall be assembled so that the clearances between mating surfaces are within the tolerances specified on the drawing. The assembly should be supported so that the parts will be in proper alignment after brazing.

3.4 Brazing Material: The brazing material shall be copper conforming to the latest issue of AMS 4500 or AMS 4701. When permitted by purchaser, a suitable copper paste or copper applied by electroplating over a nickel strike may be used. Sufficient copper shall be placed within, or in close proximity to, the joint.

3.5 Ø Joining: Heating shall be performed in a furnace with a suitable protective atmosphere as defined in 3.5.1 at a temperature between 2000 F (1093.3 C) and 2250 F (1232.2 C). Alternatively, heating may be by induction, using a suitable protective atmosphere in a jacket surrounding the work. Parts shall be heated until the copper melts and the joint is formed. Further heating shall be held to a minimum.

3.5.1 Ø Except as specified in 3.5.1.1 and 3.5.1.2, the furnace atmosphere for brazing shall be hydrogen of not less than 99.94% purity and dew point not higher than -25 F (-32 C) as determined on gas being exhausted from the furnace or retort work zone.

3.5.1.1 Ø If all oxides and scale are removed from joint surfaces before parts are placed in the brazing furnace, one of the following atmospheres may be used:

Gas	Dew Point, max (See Note 2)	Purity %, min
Argon	-35 F (-37 C)	99.99
Argon + Hydrogen (See Note 1)	-35 F (-37 C)	(See Note 3)
Vacuum		5 - 20 microns Hg

Note 1. Mixture may be in any proportions.

Note 2. Dew point shall be determined on gas being exhausted from the furnace or retort work zone.

Note 3. Purity of argon in the mixture shall be as specified above; purity of hydrogen shall be as specified in 3.5.1.

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