

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
29 West 39th Street
New York City

AMS2675

Issued 11-1-52

Revised

NICKEL ALLOY BRAZING

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. APPLICATION: Primarily for joining corrosion and heat resistant steels and alloys, but may also be used for joining carbon and low alloy steels. Recommended for use on assemblies which will operate at combinations of stress and temperature too high for copper brazed joints or where corrosion and oxidation resistant joints are required.
3. PROCESS REQUIREMENTS:
 - 3.1 Surface Condition: The surfaces to be joined shall be clean prior to assembly. Surface roughness of approximately 125 microinches, rms, is desirable, particularly when brazing alloy is applied by metal spraying, but is not required. If clearance between mating parts will be less than 0.002 in. on a side or if joint length is over 0.5 in., mating surfaces should be roughened by blasting with steel or iron shot or grit, or with silicon carbide abrasive, or by straight line knurling. If surfaces are prepared by blasting, use of abrasive with particle size approximately the same as SAE 50 or SAE 120 cast iron grit is recommended, and residual abrasive shall be removed from surfaces to be joined before they are assembled. Blasting with sand or zirconite shall not be used for final cleaning or surface preparation.
 - 3.2 Fluxing: Flux shall not be used unless permission be obtained from purchaser before brazing.
 - 3.3 Assembly: The parts to be joined shall be assembled so that the clearance between mating surfaces is within the tolerances specified on the drawing. (Note: Clearance of approximately 0.002 in. on a side is recommended). The assembly should be supported so that the parts will be in a proper alignment after brazing.
 - 3.4 Brazing Material: Unless otherwise specified, nickel brazing alloy shall conform to AMS 4775. Sufficient brazing alloy shall be placed within or in close proximity to the joint.
 - 3.5 Joining: Heating shall be performed in a furnace at a temperature between 1900 F and 2150 F with an atmosphere of hydrogen which is free from sulfur compounds and oxygen; the hydrogen shall have a dew point not higher than -40 F. Parts shall be heated until the alloy melts and the joint is formed. After the alloy melts, heating may be prolonged up to 30 min. at heat to aid solution, but washing of the joint shall be avoided.

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