

# AERONAUTICAL MATERIAL SPECIFICATION

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

## AMS 4190

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Revised

### ALUMINUM ALLOY WELDING RODS 5S1 (43S)

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

2. **APPLICATION:** Primarily gas welding and gas-shielded arc welding.

3. **COMPOSITION:**

Silicon	4.50 - 6.00
Iron	0.80 max
Copper	0.30 max
Titanium	0.20 max
Zinc	0.10 max
Manganese	0.05 max
Magnesium	0.05 max
Other Impurities, each	0.05 max
Other Impurities, total	0.15 max
Aluminum	remainder

4. **CONDITION:** As drawn, extruded, or rolled, unless otherwise specified.

5. **QUALITY:**

5.1 Rods shall be uniform in quality and condition, clean, sound, smooth, and free from foreign materials and from internal and external defects detrimental to their use for welding purposes.

5.2 Rods shall demonstrate good weldability and shall flow smoothly and evenly without sputtering or other unusual characteristics.

6. **STANDARD SIZES:**

6.1 **Diameter:**

6.1.1 **Straight Lengths:** 3/32, 1/8, 3/16, and 1/4 in. diameter.

6.1.2 **Coils:** 1/16, 3/32, 1/8, 5/32, 3/16, and 1/4 in. diameters.

6.2 **Length:** Straight lengths of 36 in., unless coils are ordered.

7. **TOLERANCES:**

7.1 **Diameter:** Plus and minus 0.007 in.

7.2 **Length (straight):** Plus 1/8 in., minus 0.

8. **REPORTS:** Unless otherwise specified, the vendor of rods shall furnish with each shipment three copies of a notarized report showing the results of tests for chemical composition of the rods in the shipment, or stating that the chemical composition of the rods conforms to the requirements specified. This report shall include the purchase order number, material specification number, size, and quantity.

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