

# AEROSPACE MATERIAL SPECIFICATION



**MAM 5822B**

Issued JAN 1993  
Revised JUN 2000  
Cancelled MAR 2003

Superseding MAM 5822A

Steel, Corrosion and Heat Resistant, Welding Wire  
11.8Cr - 2.8Ni - 1.6Co - 1.8Mo - 0.32V  
Vacuum Induction Melted

S41780

## CANCELLATION NOTICE

This specification has been declared "CANCELLED" by the Aerospace Materials Division, SAE, as of March, 2003. By this action, this document will remain listed in the Numerical Section of the Index of Aerospace Material Specifications.

AMS 5822 covers the same material.

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## 1. SCOPE:

### 1.1 Form:

This specification covers a corrosion and heat resistant steel in the form of welding wire.

#### 1.1.1 AMS 5822 is the inch/pound version of this MAM.

### 1.2 Application:

This product has been used typically as bare filler metal for gas-metal-arc or gas-tungsten-arc welding of steels of similar composition, but usage is not limited to such applications.

## 2. APPLICABLE DOCUMENTS:

The issue of the following documents in effect on the date of the purchase order form 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 canceled and no superseding document has been specified, the last published issue of that document shall apply.

### 2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

|          |                                                                                                                                           |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------|
| AMS 2248 | Chemical Check Analysis Limits, Corrosion and Heat Resistant Steels and Alloys, Maraging and Other Highly-Alloyed Steels, and Iron Alloys |
| AMS 2371 | Quality Assurance Sampling and Testing, Corrosion and Heat Resistant Steels and Alloys, Wrought Products and Forging Stock                |
| AMS 2813 | Packaging and Marking of Packaging of Welding Wire, Standard Method                                                                       |
| AMS 2814 | Packaging and Marking of Packaging of Welding Wire, Premium Quality                                                                       |
| AMS 2816 | Identification, Welding Wire, Tab Marking Method                                                                                          |
| AMS 2819 | Identification, Welding Wire, Direct Color Code System                                                                                    |
| ARP1876  | Weldability Test for Weld Filler Metal Wire                                                                                               |
| ARP4926  | Alloy Verification and Chemical Analysis Inspection of Welding Wire                                                                       |

### 2.2 ASTM Publications:

Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

|            |                                                                                                         |
|------------|---------------------------------------------------------------------------------------------------------|
| ASTM E 353 | Chemical Analysis of Stainless, Heat-Resisting, Maraging, and Other Similar Chromium-Nickel-Iron Alloys |
|------------|---------------------------------------------------------------------------------------------------------|

### 3. TECHNICAL REQUIREMENTS:

#### 3.1 Composition:

Wire shall conform to the percentages by weight shown in Table 1, determined by wet chemical methods in accordance with ASTM E 353, by spectrochemical methods, or by other analytical methods acceptable to purchaser.

TABLE 1 - Composition

| Element          | min   | max             |
|------------------|-------|-----------------|
| Carbon (3.1.3)   | 0.10  | 0.15            |
| Manganese        | 0.40  | 1.30            |
| Silicon          | --    | 0.40            |
| Phosphorus       | --    | 0.010           |
| Sulfur           | --    | 0.008           |
| Chromium         | 11.00 | 12.50           |
| Nickel           | 2.50  | 3.00            |
| Cobalt           | 1.30  | 2.00            |
| Molybdenum       | 1.50  | 2.00            |
| Vanadium         | 0.25  | 0.40            |
| Copper           | --    | 0.75            |
| Oxygen (3.1.3)   | --    | 0.005 ( 50 ppm) |
| Nitrogen (3.1.3) | --    | 0.040 (400 ppm) |
| Hydrogen (3.1.3) | --    | 0.001 ( 10 ppm) |

3.1.1 Check Analysis: Composition variations shall meet the applicable requirements of AMS 2248. No variation over maximum is permitted for oxygen, nitrogen, and hydrogen.

3.1.2 Chemical analysis of initial ingot, bar, or rod stock before drawing, other than those analyses required to be done on the finished wire, is acceptable provided the processes used for drawing or rolling, annealing, and cleaning, are controlled to ensure continued conformance to chemical composition requirements.

3.1.3 Shall be determined on finished wire.

#### 3.2 Melt Practice:

Steel shall be vacuum induction melted; it may be remelted using consumable electrode vacuum process, but remelting is not required.

#### 3.3 Condition:

Cold worked, bright finish, in a temper and with a surface finish which will provide proper feeding of the wire in machine welding equipment.