



AEROSPACE MATERIAL SPECIFICATION

AMS5680™

REV. J

Issued	1939-12
Revised	2006-01
Reaffirmed	2018-05

Superseding AMS5680H

Steel, Corrosion and Heat-Resistant, Welding Wire
18.5Cr - 11Ni - 0.40Cb (Nb) (SAE 30347)
(Composition similar to UNS S34781)

RATIONALE

AMS 5680J is a Five Year Review and update of this specification.

1. SCOPE:

1.1 Form:

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

1.2 Application:

This wire has been used typically as filler metal for gas-tungsten-arc or gas-metal-arc welding of corrosion and heat-resistant steels and alloys, 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 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.

2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

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

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2.1 (Continued):

AMS 2813	Packaging and Marking of Packages of Welding Wire, Standard Method
AMS 2814	Packaging and Marking of Packages 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 Composition Inspection of Welding Wire

2.2 ASTM Publications:

Available from ASTM, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM E 353	Chemical Analysis of Stainless, Heat-Resisting, Maraging, and Other Similar Chromium-Nickel-Iron Alloys
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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 (3.1.1.1)	--	0.07
Manganese	1.00	2.00
Silicon	0.30	1.00
Phosphorus	--	0.030
Sulfur	--	0.030
Chromium	17.00	20.00
Nickel	9.00	13.00
Columbium(Niobium)	12xC	--
Molybdenum	--	0.75
Copper	--	0.75

3.1.1 Check Analysis: Composition variations shall meet the applicable requirements of AMS 2248.

3.1.1.1 Carbon shall also be determined periodically on finished wire (See 4.2.2)

3.1.2 Chemical analysis of initial ingot, bar, or rod stock before drawing, is acceptable provided the processes used for drawing or rolling, annealing, and cleaning, are controlled to insure continued conformance to chemical composition requirements.