



AEROSPACE MATERIAL SPECIFICATION

AMS5810™**REV. B**

Issued 1994-08
Revised 2008-11
Reaffirmed 2021-05

Superseding AMS5810A

Steel, Corrosion and Heat Resistant, Flat Wire
15Cr - 25.5Ni - 1.2Mo - 2.1Ti - 0.006B - 0.30V
1800 °F (982 °C) Solution Treated, Cold Drawn or Cold Rolled and Aged,
Consumable Electrode Remelted
(Composition similar to UNS S66286)

RATIONALE

AMS5810B has been reaffirmed to comply with the SAE five-year review policy.

1. SCOPE

1.1 Form

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

1.2 Application

This wire has been used typically for retaining rings requiring corrosion and heat resistance up to 900 °F (482 °C) and which may require moderate to severe forming and bending, 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 International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

AMS2248	Chemical Check Analysis Limits, Corrosion and Heat-Resistant Steels and Alloys, Maraging and Other Highly-Alloyed Steels, and Iron Alloys
AMS2371	Quality Assurance Sampling and Testing, Corrosion and Heat-Resistant Steels and Alloys, Wrought Products and Forging Stock
AMS2750	Pyrometry

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Documents
Document Sharing Hub

2.2 ASTM Publications

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

ASTM A 370 Mechanical Testing of Steel Products
ASTM E 353 Chemical Analysis of Stainless, Heat-Resisting, Maraging, and Other Similar Chromium-Nickel-Iron Alloys

3. TECHNICAL REQUIREMENTS

3.1 Composition

Shall conform to the percentages by weight as 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	--	0.08
Manganese	--	2.00
Silicon	--	1.00
Phosphorus	--	0.025
Sulfur	--	0.025
Chromium	13.50	16.00
Nickel	24.00	27.00
Molybdenum	1.00	1.50
Titanium	1.90	2.30
Boron	0.003	0.010
Vanadium	0.10	0.50
Cobalt	--	1.00
Aluminum	--	0.35
Copper	--	0.50

3.1.1 Check Analysis

Composition variations shall meet the applicable requirements of AMS2488.

3.2 Melting Practice

Steel shall be produced by multiple melting using consumable electrode practice in the remelt cycle.

3.3 Condition

Wire shall be solution heat treated, descaled if necessary, cold drawn or cold rolled to required size, and aged.

3.4 Heat Treatment

3.4.1 Heating Equipment

Furnaces may be of any type. The heating medium or atmosphere shall be dry nitrogen or other atmospheres that will not alter the surface composition.

3.4.2 Solution Heat Treatment

Except as specified in 3.4.2.1, wire shall be solution heat treated by heating to $1800^{\circ}\text{F} \pm 25$ ($982^{\circ}\text{C} \pm 14$), holding at heat for not less than one hour, and quenching in oil. Pyrometry shall conform to AMS2750.