



# AEROSPACE MATERIAL SPECIFICATION

**AMS5718™****REV. E**

|            |         |
|------------|---------|
| Issued     | 1970-11 |
| Cancelled  | 2007-04 |
| Revised    | 2016-05 |
| Reaffirmed | 2021-05 |

Superseding AMS5718D

Steel, Bars, Forgings, Tubing, and Rings, Corrosion Resistant  
11.8Cr - 2.5Ni - 1.8Mo - 0.33V (0.08 - 0.15C)  
Annealed

(Composition similar to UNS S64152)

## RATIONALE

AMS5718E revises the grain size requirement (3.4.2), Quality (3.5), and Reports (4.5), and is a Five Year Review and update of this specification.

### 1. SCOPE

#### 1.1 Form

This specification covers a corrosion resistant steel in the form of bars, wire, forgings, mechanical tubing, extrusions, flash welded rings, and stock for forging or flash welded rings.

#### 1.2 Application

Primarily for parts, such as compressor wheels and structural members, requiring high strength and oxidation resistance up to 800 °F (425 °C).

### 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 +1 724-776-4970 (outside USA), [www.sae.org](http://www.sae.org).

|         |                                                                                                                                           |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------|
| AMS2241 | Tolerances, Corrosion and Heat-Resistant Steel, Iron Alloy, Titanium, and Titanium Alloy Bars and Wire                                    |
| AMS2243 | Tolerances, Corrosion and Heat-Resistant Steel Tubing                                                                                     |
| AMS2248 | Chemical Check Analysis Limits, Corrosion and Heat-Resistant Steels and Alloys, Maraging and Other Highly-Alloyed Steels, and Iron Alloys |

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**SAE WEB ADDRESS:**

Full document details: [SAE AMS5718E](http://www.sae.org/standards/content/AMS5718E/)

For more information on this standard, visit  
<https://www.sae.org/standards/content/AMS5718E/>

Documents

Document Sharing Hub

|         |                                                                                                                                          |
|---------|------------------------------------------------------------------------------------------------------------------------------------------|
| AMS2303 | Steel Cleanliness, Aircraft Quality, Martensitic Corrosion-Resistant Steels, Magnetic Particle Inspection Procedure                      |
| AMS2371 | Quality Assurance Sampling and Testing Corrosion and Heat-Resistant Steels and Alloys Wrought Products and Forging Stock                 |
| AMS2374 | Quality Assurance Sampling and Testing, Corrosion and Heat-Resistant Steel and Alloy Forgings                                            |
| AMS2375 | Control of Forgings Requiring First Article Approval                                                                                     |
| AMS2806 | Identification Bars, Wire, Mechanical Tubing, and Extrusions, Carbon and Alloy Steels and Corrosion and Heat-Resistant Steels and Alloys |
| AMS2808 | Identification Forgings                                                                                                                  |
| AMS7493 | Rings, Flash Welded, Ferritic and Martensitic Corrosion-Resistant Steels                                                                 |
| ARP1917 | Clarification of Terms Used in Aerospace Metals Specifications                                                                           |
| AS1182  | Standard Stock Removal Allowance Aircraft-Quality and Premium Aircraft-Quality Steel Bars and Mechanical Tubing                          |

## 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](http://www.astm.org).

|           |                                                                                                         |
|-----------|---------------------------------------------------------------------------------------------------------|
| ASTM A370 | Mechanical Testing of Steel Products                                                                    |
| ASTM E112 | Determining Average Grain Size                                                                          |
| ASTM E353 | Chemical Analysis of Stainless, Heat-Resisting, Maraging, and Other Similar Chromium-Nickel-Iron Alloys |
| ASTM E381 | Macroetch Testing Steel Bars, Billets, Blooms, and Forgings                                             |

### 3. TECHNICAL REQUIREMENTS

#### 3.1 Composition

Shall conform to the percentages by weight shown in Table 1, determined by wet chemical methods in accordance with ASTM E353 or by spectrographic or other analytical methods approved by purchaser.

**Table 1 - Composition**

|            | min   | max   |
|------------|-------|-------|
| Carbon     | 0.08  | 0.15  |
| Manganese  | 0.50  | 0.90  |
| Silicon    | --    | 0.35  |
| Phosphorus | --    | 0.025 |
| Sulfur     | --    | 0.025 |
| Chromium   | 11.00 | 12.50 |
| Nickel     | 2.00  | 3.00  |
| Molybdenum | 1.50  | 2.00  |
| Vanadium   | 0.25  | 0.40  |
| Nitrogen   | 0.01  | 0.05  |
| Copper     | --    | 0.50  |

##### 3.1.1 Check Analysis

Composition variations shall meet the requirements of AMS2248.

#### 3.2 Condition

The product shall be supplied in the following condition:

##### 3.2.1 Bars

###### 3.2.1.1 Rounds

Annealed and centerless ground, turned, or polished.

###### 3.2.1.2 Hexagons

Annealed and cold finished.

###### 3.2.1.3 Bars Other than Rounds or Hexagons

Annealed and descaled.

##### 3.2.2 Wire

Annealed and cold finished.