



# AEROSPACE MATERIAL SPECIFICATION

**AMS5868™****REV. C**Issued 1993-01  
Revised 2019-01

Superseding AMS5868B

Steel, Corrosion Resistant, Seamless and Welded Aircraft Tubing  
19Cr - 9.5Ni (304)  
Cold Drawn, 1/2 Hard Temper  
(Composition similar to UNS S30400)

## RATIONALE

AMS5868C prohibits unauthorized exceptions (3.7), revises composition (3.1), fabrication (3.3), quality (3.5.2), acceptance tests (4.2.1.1), reports (4.4.1), and identification (5.2.1), and results from 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 two types of aircraft tubing.

#### 1.2 Application

This tubing has been used typically in the fabrication of aircraft structural parts requiring good corrosion resistance, but usage is not limited to such applications. This tubing is not suitable for use in applications requiring flaring or sharp bends. Welding or other exposure over 800 °F (427 °C) during fabrication may impair corrosion resistance.

#### 1.3 Classification

Tubing covered by this specification is classified as follows:

Type 1 - Seamless and drawn

Type 2 - Welded and drawn

1.3.1 Unless a specific type is ordered, either type may be supplied.

### 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.

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## 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).

- 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
- AMS2371 Quality Assurance Sampling and Testing, Corrosion and Heat-Resistant Steels and Alloys, Wrought Products and Forging Stock
- AMS2807 Identification, Carbon and Low-Alloy Steels, Corrosion and Heat-Resistant Steels and Alloys, Sheet, Strip, Plate, and Aircraft Tubing
- AMS-STD-753 Corrosion-Resistant Steel Parts: Sampling, Inspection, and Testing for Surface Passivation
- ARP1917 Clarification of Terms Used in Aerospace Metals Specifications

## 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 A262 Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels
- ASTM A370 Mechanical Testing of Steel Products
- ASTM A751 Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products
- ASTM A1016 General Requirements for Ferritic Alloy Steel, Austenitic Alloy Steel, and Stainless Steel Tubes

## 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 A751, 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 | --    | 0.045 |
| Sulfur     | --    | 0.030 |
| Chromium   | 18.00 | 20.00 |
| Nickel     | 8.00  | 11.00 |
| Molybdenum | --    | 0.75  |
| Copper     | --    | 0.75  |

#### 3.1.1 Check Analysis

Composition variations shall meet the applicable requirements of AMS2248.