



AEROSPACE MATERIAL SPECIFICATION

AMS5763™**REV. E**

Issued 1972-12
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Revised 2016-08

Superseding AMS5763D

Steel, Corrosion Resistant Bars, Forgings, Tubing, and Rings
15Cr - 6.5Ni - 0.75Mo - 0.50Cb (Nb) - 1.5Cu
Solution Heat Treated
(Composition similar to UNS S45000)

RATIONALE

AMS5763E revises Condition (3.2.1.1.3), Properties (3.4.1.3), and Reports (4.4), 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, flash welded rings 8.0 inches (200 mm) and under in least nominal cross-sectional dimension, and stock of any size for forging or flash welded rings (see 8.6).

1.2 Application

These products have been used typically for parts requiring corrosion resistance approximating that of steels of the 18-8 types and high strength exceeding that of the 12 Cr martensitic types up to 700 °F (370 °C), but usage is not limited to such applications.

1.3 This steel can be used in the solution heat treated condition and is capable of being precipitation heat treated to tensile strengths as high as 180 ksi (1240 MPa), minimum.

1.4 Although this steel is relatively immune to stress-corrosion cracking, reference should be made to ARP1110 for recommended practices to minimize such conditions.

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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Documents

Document Sharing Hub

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.

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
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
AMS2750	Pyrometry
AMS2806	Identification Bars, Wire, Mechanical Tubing, and Extrusions, Carbon and Alloy Steels and Corrosion and Heat-Resistant Steels and Alloys
AMS2808	Identification Forgings
AMS7490	Rings, Flash Welded, Corrosion and Heat-Resistant Austenitic Steels, Austenitic-Type Iron, Nickel, or Cobalt Alloys, or Precipitation-Hardenable Alloys
ARP1110	Minimizing Stress Corrosion Cracking in Wrought Forms of Steels and Corrosion Resistant Steels and Alloys

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 A370	Mechanical Testing of Steel Products
ASTM E353	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 shown in Table 1, determined by wet chemical methods in accordance with ASTM E353, by spectrochemical methods, or by other analytical methods acceptable to purchaser.

Table 1 - Composition

Element	min	max
Carbon	--	0.05
Manganese	--	1.00
Silicon	--	1.00
Phosphorus	--	0.030
Sulfur	--	0.030
Chromium	14.00	16.00
Nickel	6.00	7.00
Molybdenum	0.50	1.00
Columbium (Niobium)	8 x C	0.75
Copper	1.25	1.75

3.1.1 Check Analysis

Composition variations shall meet the applicable requirements of AMS2248.

3.2 Condition

The product shall be supplied in the following condition:

3.2.1 Bars, Wire, Mechanical Tubing, Forgings, and Flash Welded Rings

Solution heat treated.

3.2.1.1 Bars

3.2.1.1.1 Rounds

Solution heat treated and centerless ground.

3.2.1.1.2 Squares, Hexagons, and Flats

Hot finished, solution heat treated, and descaled, or solution heat treated cold drawn, and descaled.

3.2.1.1.3 Bar shall not be cut from plate (also see 4.4.2).

3.2.1.2 Wire

Solution heat treated and cold drawn.

3.2.1.3 Mechanical Tubing

Cold finished and solution heat treated.

3.2.1.4 Flash Welded Rings

Shall not be supplied unless specified or permitted on purchaser's part drawing. When supplied, they shall be manufactured in accordance with AMS7490.