



AEROSPACE MATERIAL SPECIFICATION

AMS5934/H1100™

Issued

2024-08

Steel, Extra High Toughness, Corrosion-Resistant, Bars, Wire, Forgings, Rings,
and Extrusions
13Cr - 8.0Ni - 2.2Mo - 1.1Al
Vacuum Induction Plus Consumable Electrode Melted,
Solution Heat Treated, Precipitation Hardened (H1100)
(Composition similar to UNS S13800)

RATIONALE

AMS5934/H1100 is a new specification for the purchase of corrosion-resistant steel product in the solution and precipitation heat-treated (H1100) condition.

1. SCOPE

1.1 Form

This specification covers a corrosion-resistant steel product in the solution and precipitation heat-treated (H1100) condition, 12 inches (305 mm) and under in nominal diameter, thickness, or, for hexagons, least distance between parallel sides. The aged product may be supplied directly by a producer or by another entity performing the functions of a producer as defined in AS6279. The latter can be accomplished by precipitation heat treatment of solution treated material previously certified to AMS5934. The entity assuming responsibility for the aging operation is designated the producer of AMS5934/H1100.

1.2 Application

These products have been used typically for parts requiring corrosion resistance and high strength up to 600°F (316 °C) with good ductility and strength in the transverse direction in large sections sizes, but usage is not limited to such applications (see 8.1).

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.

AMS2241 Tolerances, Corrosion- and Heat-Resistant Steel, Iron Alloy, Titanium, and Titanium Alloy Bars and Wire

AMS2759/3 Heat Treatment, Precipitation-Hardening Corrosion-Resistant, Maraging, and Secondary Hardening Steel Parts

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SAE WEB ADDRESS:

Full document details: SAE AMS5934_H1100

For more information on this standard, visit
<https://www.sae.org/standards/content/AMS5934/H1100>

Documents

Standard, visit Sharing Hub

AMS2759/11 Stress Relief of Steel Parts

AMS2761 Heat Treatment of Steel Raw Materials

AMS5934 Steel, Extra High Toughness, Corrosion-Resistant, Bars, Wire, Forgings, Rings, and Extrusions, 13Cr - 8.0Ni - 2.2Mo - 1.1Al, Vacuum Induction Plus Consumable Electrode Melted, Solution Heat Treated, Precipitation-Hardenable

AS6279 Standard Practice for Production, Distribution, and Procurement of Metal Stock

AS7766 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.

ASTM A370 Mechanical Testing of Steel Products

2.3 Definitions

Terms used in AMS are defined in AS7766.

3. TECHNICAL REQUIREMENTS

3.1 Composition

Composition shall be in accordance with AMS5934.

3.2 Melting Practice

Melting practice shall be in accordance with AMS5934 as ordered.

3.3 Condition

Product condition shall be in accordance with AMS5934 and the following:

3.3.1 The product shall be supplied in the precipitation hardened (H1100) heat-treat condition.

3.3.2 Bar shall not be cut from plate (see 4.3.3).

3.4 Heat Treatment

Heat treatment shall be in accordance with AMS5934 and the following:

3.4.1 Precipitation Heat Treatment

3.4.1.1 Precipitation heat treatment shall be in accordance with the requirements applicable to either AMS2761 or AMS2759/3 at the producer's option, except acceptance testing and criteria shall be as specified in 3.5.3.1.

3.4.1.2 When product certified as AMS5934 (solution-treated material) is precipitation heat treated to meet AMS5934/H1100 by an entity other than the producer of the original product, the heat-treatment source shall be accredited by a recognized industry agency for stainless steel heat treatment acceptable to the purchaser.