



AEROSPACE MATERIAL SPECIFICATION

AMS2374™**REV. F**Issued 1976-07
Revised 2023-06

Superseding AMS2374E

(R) Quality Assurance Sampling and Testing
Corrosion- and Heat-Resistant Steel and Alloy Forgings

RATIONALE

AMS2374F is the result of a Five-Year Review and update of the specification. The revision separates heat and lot definitions (3.3.2 and 3.3.3), reorganizes and updates requirements for forging classes (3.3.4), adds reporting of composition note (3.3.5.2.1), updates specimen requirements (3.3.5.2.2), adds strain rate requirement for tensile tests (3.3.5.2.2.3), adds impact and fracture toughness testing (3.3.5.2.3, 3.3.5.2.4), addresses when more stringent NDT has been performed (3.3.5.2.7), and updates retesting requirements (3.3.6).

1. SCOPE

This specification covers quality assurance sampling and testing procedures used to determine conformance to applicable material specifications of corrosion- and heat-resistant steel and alloy forgings.

1.1 Quality assurance sampling and testing procedures for forging stock are covered in AMS2371.

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.

AMS2808 Identification Forgings

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

ASTM E8/E8M Tension Testing of Metallic Materials

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Full document details: SAE AMS2374F

For more information on this standard, visit
<https://www.sae.org/standards/content/AMS2374F>

Documents

Document Sharing Hub

ASTM E292 Conducting Time-for-Rupture Notch Tension Tests of Materials

ASTM E399 Metallic Material Fracture Toughness Testing

2.3 Definitions

Terms used in AMS are defined in AS7766.

3. TECHNICAL REQUIREMENTS

3.1 General Requirements

3.1.1 Omission from this specification of confirmatory tests of certain material properties or attributes controlled by the applicable material specifications does not relieve the producer of responsibility for furnishing forgings that conform in all aspects to the applicable material specification.

3.1.2 In event of conflict between requirements specified herein and requirements of a particular material specification, requirements of the material specification shall take precedence.

3.2 Responsibility for Tests

The producer of forgings shall supply all samples for the producer's tests and shall be responsible for performing all required tests. Results of such tests shall be reported to the purchaser as required by the applicable material specification.

3.3 Detail Requirements

3.3.1 Classification

For the purpose of clarifying test requirements, forgings shall be classified as shown in Table 1.

Table 1 - Classifications of forgings

Class	Description
I	Forgings supplied in the final heat-treated condition and requiring destructive testing for verification of specified mechanical properties.
II	Forgings supplied in any heat-treated condition other than the final heat-treated condition that require testing to ensure conformance to specified mechanical properties after subsequent heat treatment.
III	Forgings supplied in the final heat-treated condition to only a specified hardness.
IV	Forgings supplied in a preliminary heat-treated condition for machinability, welding, etc., and not subject to testing for specified mechanical properties, other than hardness, after final heat treatment.

3.3.2 Heat

A heat shall be all steel or alloy melted in a single furnace charge. For consumable electrode remelted steel or alloy, a heat shall be all consumable electrode remelted ingots processed from steel or alloy originally melted as a single furnace charge.

3.3.3 Lot

A lot shall be all forgings of a similar configuration, opposite hand being considered as a single configuration, identifiable to a single heat of steel or alloy, forged under the same nominal forging process parameters, and processed by either of the following methods (see 3.3.3.1 or 3.3.3.2):

3.3.3.1 Sequentially heat treated during a 24-hour period in a continuous furnace with no interruptions in operations and no change in furnace temperature, charge rate, or racking pattern.