AEROSPACE MATERIAL SPECIFICATION

AMS2360™	REV. F

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Revised 2024-12

Superseding AMS2360E

(R) Room Temperature Tensile Properties of Castings

RATIONALE

AMS2360F is the result of a Five-Year Review and update of the specification. The revision reorganizes the document by making tensile test methodology a separate section (see 3.2), removing specimen requirements that are included in the base material specifications (see 3.1), adding strain rate requirements for tensile tests (see 3.2.1), addressing rounding (see 3.2.2), adding requirement to report numerical property values when there is a limit (see 3.2.3), and making use of casting nomenclature optional (see 3.3.1).

1. SCOPE

This specification establishes a procedure for designating minimum room temperature tensile property requirements of castings by means of this AMS number and a series of dash numbers.

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.

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 E8/E8M Tension Testing of Metallic Materials

ASTM E29 Using Significant Digits in Test Data to Determine Conformance with Specifications

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
SAE WEB ADDRESS: **http://www.sae.org**

For more information on this standard, visit
https://www.sae.org/standards/content/AMS2360F/

2.3 Definitions

Terms used in AMS are defined in AS7766.

3. TECHNICAL REQUIREMENTS

3.1 Tensile Specimens

Tensile specimens shall be machined from representative casting or castings, unless separately cast specimens are required or agreed upon by the purchaser. Testing shall be performed in the thermal condition required by the material specification. Specimens shall be of standard proportions in accordance with ASTM E8/E8M unless otherwise specified.

3.1.1 Specimen Location

When property requirements are designated by the procedure of this specification, the location(s) in the casting to which the designated property requirements apply shall be as shown on the purchaser's drawing and as follows:

3.1.1.1 When the property limit dash-number designations of 3.3 apply to a specific area or areas, the designation of 3.3 may be used alone or with the final two-letter designation "DR" to indicate that the drawing shows the location(s) from which specimens shall be taken.

3.1.1.2 Property requirements for specimens from non-specific locations in castings may be designated as in 3.3 using one of the following two-letter suffixes as applicable:

AO = Requirements apply to all areas of the casting.

GR = Requirements apply to all areas except near gate, sprue, and riser locations.

3.2 Tensile Properties

Tensile properties shall be determined in accordance with ASTM E8/E8M unless otherwise specified

3.2.1 Unless otherwise specified, the tensile test strain shall be set at 0.005 in/in/min (0.005 mm/mm/min) and maintained within a tolerance of ±0.002 in/in/min (±0.002 mm/mm/min) through 0.2% offset yield strain. After the yield strain, the speed of the testing machine shall be set between 0.05 and 0.5 in/in (0.05 and 0.5 mm/mm) of the length of the reduced parallel section (or distance between the grips for specimens not having a reduced section) per minute. Alternatively, an extensometer and strain rate indicator may be used to set the strain rate between 0.05 and 0.5 in/in/min (0.05 and 0.5 mm/mm/min). The requirement for compliance becomes effective for material produced 1 year after the publication date of this specification.

3.2.2 The ASTM E29 rounding method shall be used unless otherwise specified.

3.2.3 Properties required by the material specification shall be reported as numerical values. If properties not required by the material specification are determined, the results shall be recorded but these results are not required to be reported.

3.2.4 For round cross sections, the gauge length to diameter ratio required by the material specification is typically 4 (4D). When the ratio is different than 4, it shall be reported.

3.2.5 For rectangular cross sections, it is recommended to use a gauge length that is 4.5 times the square root of the cross-sectional area for determination of elongation. In these cases, elongation and reduction of area measurements shall be taken for information only.

3.3 Tensile Property Requirements

Tensile property requirements may be designated in tabular format or by AMS2360 followed by four groups of one to four digits indicating, in successive order, the minimum tensile strength in ksi or MPa, the minimum yield strength in ksi or MPa, the minimum elongation in 4D in percent, and the minimum reduction of area in percent. Designations of stress shall be assumed to be in U.S. customary (inch/pound) units unless “AMS2360” is followed by “(SI).” When there is no requirement for a particular property, an “X” shall replace the figures for that property.

3.3.1 Examples

3.3.1.1 In U.S. customary units, AMS2360-150-130-4-5 may be used to designate the following as shown in Table 1:

Table 1

Property	Value
Tensile Strength, minimum	150 ksi
Yield Strength at 0.2% Offset, minimum	130 ksi
Elongation in 4D, minimum	4 %
Reduction of Area, minimum	5 %

3.3.1.2 In SI units, AMS2360(SI)-1035-900-4-5 may be used to designate the following as shown in Table 2:

Table 2

Property	Value
Tensile Strength, minimum	1035 MPa
Yield Strength at 0.2% Offset, minimum	900 MPa
Elongation in 4D, minimum	4 %
Reduction of Area, minimum	5 %

4. QUALITY ASSURANCE PROVISIONS

Not applicable.

5. PREPARATION FOR DELIVERY

Not applicable.

6. ACKNOWLEDGMENT

A producer shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.

7. REJECTIONS

Not applicable.

8. NOTES

8.1 Revision Indicator

A change bar (I) located in the left margin is for the convenience of the user in locating areas where technical revisions, not editorial changes, have been made to the previous issue of this document. An (R) symbol to the left of the document title indicates a complete revision of the document, including technical revisions. Change bars and (R) are not used in original publications, nor in documents that contain editorial changes only.