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Superseding AMS2361C

**Elevated Temperature Tensile Properties of Castings**

**RATIONALE**

AMS2361D has been reaffirmed to comply with the SAE five-year review policy.

**1. SCOPE**

This specification establishes a procedure for designating minimum elevated 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 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 E 8                      Tension Testing of Metallic Materials  
ASTM E 21                    Elevated Temperature Tension Testing of Metallic Materials

**3. TECHNICAL REQUIREMENTS**

**3.1 Tensile Specimens**

Shall be machined from a representative casting or castings, unless separately cast specimens are specified. Testing shall be performed in the thermal condition required by the material specification. Specimens shall be of standard proportions, in accordance with ASTM E 8 with 0.250 inch (6.35 mm) nominal diameter in the reduced parallel gage section, except that if the thickness of the casting is insufficient to provide such specimens, they may be of a smaller size, as agreed upon by purchaser and vendor. For round specimens, smaller than sub-size, gauge length shall be four times the test specimen diameter. For non-round specimens, smaller than sub-sized, a gauge length of 4.5 times the square root of the cross sectional area is recommended for determination of elongation, but ductility measurements shall be taken for information only.

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### 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 3.2 apply to a specific area or areas, the designation of 3.2 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 3.2, 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 Property Requirements

Will be designated by AMS 2361, followed by five groups of one to four digits indicating in successive order, the temperature in Fahrenheit or Celsius degrees, the minimum tensile strength in ksi or in MPa, the minimum yield strength in ksi or in 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 inch/pound units unless "AMS 2361" is followed by "(SI)". When there is no requirement for a particular property, an "X" shall replace the figures for that property. Testing shall be performed in accordance with ASTM E 21, unless otherwise required by purchaser.

#### 3.2.1 Examples

- 3.2.1.1 In inch/pound units, AMS 2361-1300-75-37-5-10 shall designate that the test is to be conducted at 1300 °F and that the requirements are as shown in Table 1:

TABLE 1

| Property                               | Value  |
|--|--------|
| Tensile Strength, minimum              | 75 ksi |
| Yield Strength at 0.2% Offset, minimum | 37 ksi |
| Elongation in 4D, minimum              | 5%     |
| Reduction of Area, minimum             | 10%    |

- 3.2.1.2 In SI units, AMS 2361(SI)-700-500-250-5-10 shall designate that the test is to be conducted at 700 °C and that the requirements are as shown in Table 2:

TABLE 2

| Property                               | Value   |
|--|---------|
| Tensile Strength, minimum              | 500 MPa |
| Yield Strength at 0.2% Offset, minimum | 250 MPa |
| Elongation in 4D, minimum              | 5%      |
| Reduction of Area, minimum             | 10%     |

### 4. QUALITY ASSURANCE PROVISIONS

Not applicable.

### 5. PREPARATION FOR DELIVERY

Not applicable.