



<b>AEROSPACE MATERIAL SPECIFICATION</b>	<b>AMS2355™</b>	<b>REV. M</b>
	Issued 1965-09 Revised 2017-05	
Superseding AMS2355L		
Quality Assurance, Sampling and Testing Aluminum Alloys and Magnesium Alloy Wrought Products (Except Forging Stock), and Rolled, Forged, or Flash Welded Rings		

### RATIONALE

AMS2355M provides clarification of dimensions as applied to mechanical properties (3.1.3) and corrects a units conversion error (3.3.5.13).

#### 1. SCOPE

This specification covers quality assurance sampling and testing procedures used to determine conformance to applicable specification requirements of wrought aluminum alloy and wrought magnesium alloy mill products (except forging stock), and includes quality assurance and testing procedures for rolled, forged, and flash welded rings (see 8.3). Requirements are specified in inch/pound units.

#### 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](http://www.sae.org).

ARP1917 Clarification of 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](http://www.astm.org).

ASTM B557 Tension Testing Wrought and Cast Aluminum- and Magnesium-Alloy Products

ASTM B594 Ultrasonic Inspection of Aluminum-Alloy Wrought Products

ASTM B645 Linear-Elastic Plane-Strain Fracture Toughness Testing of Aluminum Alloys

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ASTM B646	Fracture Toughness Testing of Aluminum Alloys
ASTM B953	Sampling Magnesium and Magnesium Alloys for Spectrochemical Analysis
ASTM B954	Analysis of Magnesium and Magnesium Alloys by Atomic Emission Spectrometry
ASTM B985	Sampling Aluminum Ingots, Billets, Castings and Finished or Semi-Finished Wrought Aluminum Products for Compositional Analysis
ASTM E9	Compression Testing of Metallic Materials at Room Temperature
ASTM E10	Brinell Hardness of Metallic Materials
ASTM E18	Rockwell Hardness of Metallic Materials
ASTM E29	Using Significant Digits in Test Data to Determine Conformance with Specifications
ASTM E34	Chemical Analysis of Aluminum and Aluminum-Base Alloys
ASTM E55	Sampling Wrought Nonferrous Metals and Alloys for Determination of Chemical Composition
ASTM E290	Bend Testing of Material for Ductility
ASTM E384	Knoop and Vickers Hardness of Materials
ASTM E399	Linear-Elastic Plane-Strain Fracture Toughness $K_{Ic}$ of Metallic Materials
ASTM E466	Force Controlled Constant Amplitude Axial Fatigue Tests of Metallic Materials
ASTM E561	K-R Curve Determination
ASTM E607	Atomic Emission Spectrometric Analysis of Aluminum and Aluminum Alloys by the Point-to-Plane Technique, Nitrogen Atmosphere
ASTM E716	Sampling and Sample Preparation of Aluminum and Aluminum Alloys for Determination of Chemical Composition by Spark Atomic Emission Spectrometry
ASTM E1004	Determining Electrical Conductivity Using the Electromagnetic (Eddy-Current) Method
ASTM E1251	Analysis of Aluminum and Aluminum Alloys by Spark Atomic Emission Spectrometry
ASTM E1304	Plane-Strain (Chevron Notch) Fracture Toughness of Metallic Materials
ASTM G34	Exfoliation Corrosion Susceptibility in 2XXX and 7XXX Series Aluminum Alloys (EXCO TEST)
ASTM G47	Determining Susceptibility to Stress-Corrosion Cracking of 2XXX and 7XXX Aluminum Alloy Products

#### 2.2.1 U.S. Government Publications

Copies of these documents are available online at <http://quicksearch.dla.mil>.

MIL-STD-1537 Electrical Conductivity Test for Verification of Heat Treatment of Aluminum Alloys, Eddy Current Method

### 3. TECHNICAL REQUIREMENTS

#### 3.1 General

- 3.1.1 Omission from this specification of confirmatory tests of certain material properties or attributes controlled by the applicable specification for a product does not relieve the producer of responsibility for furnishing products which conform in all respects to the applicable material specification.
- 3.1.2 In event of conflict between requirements specified herein and requirements of a particular material specification, the following rules shall apply:
- 3.1.2.1 When requirements of the material specification are more stringent, they shall take precedence.
- 3.1.2.2 When requirements of this AMS are more stringent, they shall take precedence except as noted in 3.1.2.3.
- 3.1.2.3 If any tests mentioned in 3.3 are not required by the material specification, they shall not be considered a requirement.
- 3.1.2.4 When instructions are issued by purchaser regarding quality assurance sampling procedures, such instructions shall take precedence over requirements of either this specification or the particular specification in which this specification is invoked.
- 3.1.3 Properties of the delivered product shall meet those of the specified (ordered) product.
- 3.1.3.1 For products, other than die and hand forgings, the applicable limits for mechanical properties, physical properties, cladding thickness, and ultrasonic discontinuity limits are those that apply to the specified (ordered) dimension. The applicable limits for die and hand forgings are defined by the thickness of the forging at the time of heat treatment.
- 3.1.3.2 When a specified (ordered) dimension or when a specified forging thickness at the time of heat treatment is expressed to more decimal places than published in the material specification, applicable limits are determined by rounding the specified (ordered) dimension to the same number of decimal places as the material specification in accordance with ASTM E29.

#### 3.2 Responsibility for Tests

The producer of the product shall supply all samples for producer's tests and shall be responsible for the performance of all specified tests.

#### 3.3 Detail Requirements

##### 3.3.1 Inspection Lot

##### 3.3.1.1 Wrought Alloy Products Including Forged or Rolled Rings, but Excluding Die and Hand Forgings and Flash Welded Rings

##### 3.3.1.1.1 Heat Treated Tempers

An inspection lot shall be an identifiable quantity of product of the same mill form, alloy, temper, section, and size traceable to a heat treat lot (see 8.3.3), and submitted for producer's inspection at one time. All sheet and plate of the same thickness is considered to be of the same size.

##### 3.3.1.1.2 Non-Heat-Treated Tempers

An inspection lot shall be an identifiable quantity of material of the same mill form, alloy, temper, section, and size submitted for producer's inspection at one time.