SAE Aerospace
An SAE International Group

AEROSPACE MATERIAL SPECIFICATION

SAE AMS4017 REV. K

Issued 1942-01
Revised 2004-12
Reaffirmed 2012-05

Superseding AMS4017J

Aluminum Alloy Sheet and Plate
2.5Mg - 0.25Cr (5052-H34)
Strain-Hardened, Half-Hard, and Stabilized
(Composition Similar to UNS A95052)

RATIONALE

AMS4017K has been reaffirmed to comply with the SAE five-year review policy.

1. SCOPE:

1.1 Form:

This specification covers an aluminum alloy in the form of sheet and plate.

1.2 Application:

These products have been used typically for parts requiring moderate forming and where good welding characteristics and resistance to corrosion are important, but usage is not limited to such applications.

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, 400 Commonwealth Drive, Warrendale, PA 15096-0001 or www.sae.org

AMS 2355	Quality Assurance Sampling and Testing of Aluminum Alloys and Magnesium Alloys, Wrought Products (Except Forging Stock) and Flash Welded Rings
AS1990	Aluminum Alloy Tempers

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**

SAE values your input. To provide feedback on this Technical Report, please visit
http://www.sae.org/technical/standards/AMS4017K

2.2 ASTM Publications:

Available from ASTM, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959 or www.astm.org.

ASTM B 660	Packaging/Packing of Aluminum and Magnesium Products
ASTM B 666/B 666M	Identification Marking of Aluminum and Magnesium Products

2.3 ANSI Publications:

Available from ANSI, 25 West 43rd Street, New York, NY 10036-8002 or www.ansi.org

ANSI H35.2	Dimensional Tolerance for Aluminum Mill Products
ANSI H35.2M	Dimensional Tolerances for Aluminum Mill Products, Metric

3. TECHNICAL REQUIREMENTS:

3.1 Composition:

Shall conform to the percentages by weight shown in Table 1, determined in accordance with AMS 2355.

TABLE 1 - Composition

Element	min	max
Silicon	--	0.25
Iron	--	0.40
Copper	--	0.10
Manganese	--	0.10
Magnesium	2.2	2.8
Chromium	0.15	0.35
Zinc	--	0.10
Other Elements, each	--	0.05
Other Elements, total	--	0.15
Aluminum	remainder	

3.2 Condition:

Strain hardened, half-hard, and stabilized to the H34 temper.

3.3 Properties:

The product shall conform to the following requirements, determined in accordance with AMS 2355 on the mill produced size.

3.3.1 Tensile Properties: Shall be as specified in Table 2.

TABLE 2A - Tensile Properties, Inch/Pound Units

Nominal Thickness Inch	Tensile Strength ksi	Yield Strength at 0.2% Offset ksi, min	Elongation in 2 Inches or 4D %, min
0.009 to 0.019, incl	34.0 - 41.0	26.0	3
Over 0.019 to 0.050, incl	34.0 - 41.0	26.0	4
Over 0.050 to 0.113, incl	34.0 - 41.0	26.0	6
Over 0.113 to 0.249, incl	34.0 - 41.0	26.0	7
Over 0.249 to 1.000, incl	34.0 - 41.0	26.0	10

TABLE 2B - Tensile Properties, SI Units

Nominal Thickness Millimeters	Tensile Strength MPa	Yield Strength at 0.2% Offset MPa, min	Elongation in 50.8 mm or 4D %, min
0.23 to 0.48, incl	234 - 283	179	3
Over 0.48 to 1.27, incl	234 - 283	179	4
Over 1.27 to 2.87, incl	234 - 283	179	6
Over 2.87 to 6.32, incl	234 - 283	179	7
Over 6.32 to 25.40, incl	234 - 283	179	10

3.3.2 Bending: Product 0.249 inch (6.32 mm) and under in nominal thickness shall withstand, without cracking, bending at room temperature through an angle of 180 degrees around a diameter equal to the bend factor shown in Table 3 times the nominal thickness of the product with axis of bend parallel to the direction of rolling.

TABLE 3 - Bending Requirements

Nominal Thickness Inch	Nominal Thickness Millimeters	Bend Factor
Up to 0.019, incl	Up to 0.48, incl	1
Over 0.019 to 0.050, incl	Over 0.48 to 1.27, incl	2
Over 0.050 to 0.113, incl	Over 1.27 to 2.87, incl	3
Over 0.113 to 0.249, incl	Over 2.87 to 6.32, incl	4

3.4 Quality:

The product, as received by purchaser, shall be uniform in quality and condition, sound, and free from foreign materials and from internal and external imperfections detrimental to usage of the product.

3.5 Tolerances:

Shall conform to all applicable requirements of ANSI H35.2 or ANSI H35.2M.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for Inspection:

The vendor of the product shall supply all samples for vendor's tests and shall be responsible for the performance of all required tests. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the product conforms to the specified requirements.

4.2 Classification of Tests:

4.2.1 Acceptance Tests: Composition (3.1), tensile properties (3.3.1), and tolerances (3.5) are acceptance tests and, except for composition, shall be performed on each lot.

4.2.2 Periodic Tests: Bending (3.3.2) is a periodic test and shall be performed at a frequency selected by the vendor unless frequency of testing is specified by purchaser.

4.3 Sampling and Testing:

Shall be in accordance with AMS 2355.

4.4 Reports:

The vendor of the product shall furnish with each shipment a report stating that the product conforms to the composition and tolerances and showing the numerical results of tests on each inspection lot to determine conformance to the other acceptance test requirements. This report shall include the purchase order number, inspection lot number, AMS 4017K, size, and quantity. The report shall also identify the producer, the product form, and the size of the mill product.

4.5 Resampling and Retesting:

Shall be in accordance with AMS 2355.

5. PREPARATION FOR DELIVERY:

5.1 Identification:

Shall be in accordance with ASTM B666/N 666M.

5.2 Protective Treatment:

Product shall be protected from damage during storage and shipment by a method determined by vendor unless specified by purchaser. Examples of tyhpical methods include but are not limited to interleafing with paper or oiling of the surface.