SAE Aerospace
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AEROSPACE MATERIAL SPECIFICATION

AMS 4347C

Issued 1987-10
Revised 2007-11

Superseding AMS 4347B

Aluminum Alloy Sheet
1.0Mg - 0.8Si - 0.8Cu - 0.5Mn (6013-T4)
Solution Heat Treated and Naturally Aged

(Composition similar to UNS A96013)

RATIONALE

AMS 4347C results from a Five Year Review and update of this specification.

1. SCOPE

1.1 Form

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

1.2 Application

This product has been used typically for formed structural parts where good stretch formability is required and where, after precipitation heat treatment, good strength, toughness, and fatigue properties and maximum corrosion resistance are inherent, 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 International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

AMS 2355	Quality Assurance Sampling and Testing, Aluminum Alloys and Magnesium Alloys, Wrought Products, Except Forging Stock, and Rolled, Forged, or Flash Welded Rings
AMS 2772	Heat Treatment of Aluminum Alloy Raw Materials
AS1990	Aluminum Alloy Tempers

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 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 American National Standards Institute, 25 West 43rd Street, New York, NY 10036, Tel: 212-642-4900, www.ansi.org.

ANSI H 35.2 Dimensional Tolerances for Aluminum Mill Products
ANSI H 35.2M 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	0.6	1.0
Iron	--	0.50
Copper	0.6	1.1
Manganese	0.20	0.8
Magnesium	0.8	1.2
Chromium	--	0.10
Zinc	--	0.25
Titanium	--	0.10
Other Elements, each	--	0.05
Other Elements, total	--	0.15
Aluminum	remainder	

3.2 Condition

Solution heat treated and naturally aged to the T4 temper (AS1990) in accordance with AMS 2772.

3.3 Tensile Properties

Sheet, 0.020 to 0.249 inch (0.51 to 6.32 mm), inclusive, in nominal thickness, shall conform to the requirements of Table 2 and Table 3, determined in the long-transverse direction in accordance with AMS 2355 on the mill produced size.

3.3.1 As Solution Heat Treated and Naturally Aged

Shall be as shown in Table 2.

TABLE 2 - MINIMUM TENSILE PROPERTIES

Property	Value
Tensile Strength	40.0 ksi (276 MPa)
Yield Strength at 0.2% Offset	21.0 ksi (145 MPa)
Elongation in 2 inches (50.8 mm)	20%

3.3.2 Response to Heat Treatment

Sheet, precipitation heat treated to the T62 temper (AS1990) in accordance with AMS 2772 shall have the properties shown in Table 3.

TABLE 3 - MINIMUM TENSILE PROPERTIES

Property	Value
Tensile Strength	52.0 ksi (359 MPa)
Yield Strength at 0.2% Offset	46.0 ksi (317 MPa)
Elongation in 2 Inches (50.8 mm)	8%

3.4 Quality

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

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 sheet 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 sheet conforms to specified requirements.

4.2 Classification of Tests

4.2.1 Acceptance Tests

Composition (3.1), tensile properties (3.3), response to heat treat (3.3.2) and tolerances (3.5) are acceptance tests and except for composition, shall be performed on each lot.

4.3 Sampling and Testing

Shall be in accordance with AMS 2355.

4.4 Reports

The vendor of sheet shall furnish with each shipment a report stating that the sheet conforms to the composition and tolerances and showing the numerical results of tests on each inspection lot to determine conformance to the other test requirements. This report shall include the purchase order number, inspection lot number, AMS 4347C, size, and quantity. The report shall also identify the producer, 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 B 666/B 666M.