SAE Aerospace
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AEROSPACE MATERIAL SPECIFICATION

SAE AMS 4267

Issued FEB 2005

Aluminum Alloy, Sheet (7055-O)
8.0Zn - 2.3Cu - 2.0Mg - 0.16Zr
Annealed

(Composition similar to UNS A97055)

1. SCOPE:

1.1 Form:

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

1.2 Application

This product is used for formed structural parts, which will be subsequently heat treated and require high strength and good corrosion resistance, 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, Aluminum Alloys and Magnesium Alloys, Wrought Products, Except Forging Stock and Rolled, Forged, or Flash Welded Rings
AMS 2770	Heat Treatment of Aluminum Alloy Parts
AMS 2772	Heat Treatment of Aluminum Alloy Raw Material
ARP 823	Minimizing Stress-Corrosion Cracking in Wrought Heat-Treatable Aluminum Products
AS 1990	Aluminum Alloy Tempers

TO PLACE A DOCUMENT ORDER: Tel: 877-606-7323 (inside USA and Canada)
Tel: 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: custsvc@sae.org

SAE WEB ADDRESS: http://www.sae.org

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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
ASTM E 1004	Determine Electrical Conductivity using the Electromagnetic (Eddy Current) Method
ASTM G 34	Exfoliation Corrosion Susceptibility in 2xxx and 7xxx Series Aluminum Alloys (EXCO Test)

2.3 ANSI Publications:

Available from ANSI, 25 West 43rd Street, New York, NY 10036 or 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	--	0.10
Iron	--	0.15
Copper	2.0	2.6
Manganese	--	0.05
Magnesium	1.8	2.3
Chromium	--	0.04
Zinc	7.6	8.4
Titanium	--	0.06
Zirconium	0.08	0.25
Other elements, each	--	0.05
Other elements, total	--	0.15
Aluminum	remainder	

3.2 Condition:

Annealed in accordance with AMS 2772 to the “O” temper. (see AS 1990).

3.3 Properties:

The product shall conform to Table 2, determined in accordance with AMS 2355 on the mill produced size.

3.3.1 As Annealed:

3.3.1.1 Tensile Properties: Shall be as shown in Table 2.

Table 2A -Tensile Properties, Inch/Pound Units

Nominal Thickness Inch	Tensile Strength ksi max.	Yield Strength at 0.2% Offset ksi max.	Elongation in 2 Inches or 4D % min
0.040 to 0.125, incl	38.0	25.0	14
Over 0.126 to 0.249, incl	35.0	25.0	11

TABLE 2B - Tensile Properties, SI Units

Nominal Thickness Millimeters	Tensile Strength MPa max	Yield Strength at 0.2% Offset MPa max	Elongation in 50.8 mm or 4D % min
1.01 to 3.20, incl	262	172	14
Over 3.20 to 6.30, incl	241	172	11

3.3.1.2 Bending: Product 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 sheet with axis of bend parallel to the direction of rolling.

Table 3 - Bending Parameters

Nominal Thickness Inch	Nominal Thickness Millimeters	Bend Factor
0.020 to 0.090, incl	0.51 to 2.29, incl	5
Over 0.090 to 0.249, incl	Over 2.29 to 6.32, incl	4

3.3.2 Response to Heat Treatment: Sheet shall have the following properties after being solution and precipitation heat treated to the -T762 temper in accordance with AMS 2772 for the following times and temperatures (See 8.4):

- Solution temperature 875 °F ±10 (468 °C ±6)
- Soak times per Figure 2 of AMS 2772
- It is recommended that 96 hours of room temperature aging be allowed prior to precipitation aging to achieve maximum properties in the -T762 temper
- Precipitation temperature 250 °F ±10 (121 C ±6) for 24 hours followed by 320 °F ±10 (160 °C ±6) for 4 hours

3.3.2.1 Tensile Properties: Shall be as shown in Table 4.

TABLE 4A - Minimum Tensile Properties, Inch/Pound Units

Nominal Thickness Inches	Tensile Strength ksi	Yield Strength at 0.2% Offset ksi	Elongation in 2 Inches or 4D %
0.040 to 0.125, incl	81.0	78.0	8
Over 0.126 to 0.249, incl	83.0	80.0	9

TABLE 4B - Minimum Tensile Properties, SI Units

Nominal Thickness Millimeters	Tensile Strength MPa	Yield Strength at 0.2% Offset MPa	Elongation in 50.8 mm or 4D %
1.01 to 3.20, incl	558	538	8
Over 3.20 to 6.30, incl	572	552	9

3.3.2.2 Electrical Conductivity: Shall be not lower than 34.5% IACS (International Annealed Copper Standard) (20.0 MS/m), determined on the surface of the test coupon in accordance with ASTM E 1004.

3.3.3 Exfoliation Corrosion Resistance: Specimens cut from sheet shall not exhibit exfoliation corrosion at the surface greater than that illustrated by Photograph B, Figure 2, of ASTM G 34.

3.4 Quality:

Product, as received by purchaser, shall be uniform in quality and condition, sound and free from foreign materials and from conditions detrimental to usage of the sheets.

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 products 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 products conform to specified requirements.