

# AEROSPACE MATERIAL SPECIFICATION

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Superseding AMS 4025J

Aluminum Alloy, Sheet and Plate  
1.0Mg - 0.60Si - 0.28Cu - 0.20Cr (6061-0)  
Annealed

(Composition similar to UNS A96061)

## 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 where moderate formability and response to solution and precipitation heat treatment are required, 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 canceled and no superseding document has been specified, the last issue of that document shall apply.

### 2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale PA 15096-0001 or 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

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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](http://www.astm.org).

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

## 2.3 ANSI Publications:

Available from ANSI, 25 West 43rd Street, New York, NY 10036 or [www.ansi.org](http://www.ansi.org).

ANSI H35.2 Dimensional Tolerances for Aluminum Mill Products  
 ANSI H35.2M Dimensional tolerances for Aluminum Mill Products (Metric)

## 3. TECHNICAL REQUIREMENTS:

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

TABLE 1 – Composition

Element	min	max
Silicon	0.40	0.8
Iron	--	0.7
Copper	0.15	0.40
Manganese	--	0.15
Magnesium	0.8	1.2
Chromium	0.04	0.35
Zinc	--	0.25
Titanium	--	0.15
Other Elements, each	--	0.05
Other Elements, total	--	0.15
Aluminum	remainder	

## 3.2 Condition:

Annealed in accordance with AMS 2772.

## 3.3 Properties:

The product shall conform to the following requirements, determined on the mill produced size in accordance with AMS 2355 and as specified herein:

## 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 Inches	Tensile Strength ksi, max	Yield Strength at 0.2% Offset ksi, max	Elongation in 2 Inches or 4D %, min
0.006 to 0.007, incl	22.0	12.0	10
Over 0.007 to 0.009, incl	22.0	12.0	12
Over 0.009 to 0.020, incl	22.0	12.0	14
Over 0.020 to 0.128, incl	22.0	12.0	16
Over 0.128 to 0.499, incl	22.0	12.0	18
Over 0.499 to 1.000, incl	22.0	--	18
Over 1.000 to 3.000, incl	22.0	--	16

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
0.15 to 0.18, incl	152	83	10
Over 0.18 to 0.23, incl	152	83	12
Over 0.23 to 0.51, incl	152	83	14
Over 0.51 to 3.25, incl	152	83	16
Over 3.25 to 12.67, incl	152	83	18
Over 12.67 to 25.40, incl	152	--	18
Over 25.40 to 76.20, incl	152	--	16

3.3.1.1.1 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 product with axis of bend parallel to the direction of rolling.

TABLE 3 – Bending Parameters

Nominal Thickness Inch	Nominal Thickness Millimeters	Bend Factor
0.006 to 0.020, incl	0.15 to 0.51, incl	0
Over 0.020 to 0.128, incl	Over 0.51 to 3.25, incl	1
Over 0.128 to 0.249, incl	Over 3.25 to 6.32, incl	2
Over 0.249 to 0.499, incl	Over 6.32 to 12.67, incl	3

3.3.2 After Heat Treatment: The product, as received by purchaser, shall have the following properties after solution heat treatment and aging to the T62 temper (see AS1900) in accordance with AMS 2772.

## 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 %
0.006 to 0.007, incl	42.0	35.0	4
Over 0.007 to 0.009, incl	42.0	35.0	6
Over 0.009 to 0.020, incl	42.0	35.0	8
Over 0.020 to 0.499, incl	42.0	35.0	10
Over 0.499 to 1.000, incl	42.0	35.0	9
Over 1.000 to 2.000, incl	42.0	35.0	8
Over 2.000 to 3.000, incl	42.0	35.0	6

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 %
0.15 to 0.18, incl	290	241	4
Over 0.18 to 0.23, incl	290	241	6
Over 0.23 to 0.51, incl	290	241	8
Over 0.51 to 12.67, incl	290	241	10
Over 12.67 to 25.40, incl	290	241	9
Over 25.40 to 50.80, incl	290	241	8
Over 50.80 to 76.20, incl	290	241	6

## 3.3.2.2 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 5 times the nominal thickness of the product with axis of bend parallel to direction of rolling.

TABLE 5 – Bending Parameters

Nominal Thickness Inch	Nominal Thickness Millimeters	Bend Factor
0.006 to 0.020, incl	0.15 to 0.51, incl	2
Over 0.020 to 0.036, incl	Over 0.51 to 0.91, incl	3
Over 0.036 to 0.064, incl	Over 0.91 to 1.63, incl	4
Over 0.064 to 0.128, incl	Over 1.63 to 3.25, incl	5
Over 0.128 to 0.249, incl	Over 3.25 to 6.32, incl	6
Over 0.249 to 0.499, incl	Over 6.32 to 12.67, incl	7

## 3.4 Quality:

The product, 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 product.