



400 Commonwealth Drive, Warrendale, PA 15096-0001

AEROSPACE MATERIAL SPECIFICATION



AMS 4001G

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Superseding AMS 4001F

Submitted for recognition as an American National Standard

ALUMINUM SHEET AND PLATE 0.12Cu (1100-0) Annealed

UNS A91100

1. SCOPE:

1.1 Form This specification covers aluminum in the form of sheet and plate.

1.2 Application: Primarily for severely formed parts and for parts requiring welding.

2. APPLICABLE DOCUMENTS: The following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order.

2.1 SAE Publications: Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

2.1.1 Aerospace Material Specifications:

AMS 2202 - Tolerances, Aluminum Alloy and Magnesium Alloy Sheet and Plate
MM 2202 - Tolerances, Metric, Aluminum Alloy and Magnesium Alloy Sheet and Plate

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

MM 2355 - Quality Assurance Sampling and Testing of Aluminum Alloys and Magnesium Alloys, Wrought Products (Except Forging Stock) and Flash Welded Rings, Metric (SI) Units

AMS 2811 Identification, Aluminum and Magnesium Alloy Wrought Products

2.2 ASTM Publications: Available from ASTM, 1916 Race Street, Philadelphia, PA 19103-1187.

ASTM B 660 - Packaging/Packing of Aluminum and Magnesium Products

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3. TECHNICAL REQUIREMENTS:

3.1 Composition: Shall conform to the following percentages by weight, determined in accordance with AMS 2355 or MM 2355:

	min	max
Aluminum	99.00	--
Copper	0.05	0.20
Iron + Silicon	--	0.95
Zinc	--	0.10
Manganese	--	0.05
Other Impurities, each	--	0.05
Other Impurities, total	--	0.15

3.2 Condition: Annealed.

3.3 Properties: The product shall conform to the following requirements, determined in accordance with AMS 2355 or MM 2355:

3.3.1 Tensile Properties: Shall be as shown in Table I and 3.3.1.1.

TABLE I

Nominal Thickness Inches	Tensile Strength ksi	Yield Strength at 0.2% Offset ksi, min	Strength 2 Inches or 4D ksi, min	Elongation in % min
0.006 to 0.019, incl	11.0 - 15.5	3.5	15	
Over 0.019 to 0.031, incl	11.0 - 15.5	3.5	20	
Over 0.031 to 0.050, incl	11.0 - 15.5	3.5	25	
Over 0.050 to 0.249, incl	11.0 - 15.5	3.5	30	
Over 0.249 to 3.000, incl	11.0 - 15.5	3.5	28	

TABLE I (SI)

Nominal Thickness Millimeters	Tensile Strength MPa	Yield Strength at 0.2% Offset MPa, min	Strength 50.8 mm or 4D MPa, min	Elongation in % min
0.15 to 0.48, incl	76 - 107	24	15	
Over 0.48 to 0.79, incl	76 - 107	24	20	
Over 0.79 to 1.27, incl	76 - 107	24	25	
Over 1.27 to 6.32, incl	76 - 107	24	30	
Over 6.32 to 76.20, incl	76 - 107	24	28	

3.3.1.1 Tensile property requirements for plate over 3.000 inches (76.20 mm) in nominal thickness shall be as agreed upon by purchaser and vendor.

3.3.2 Bending: Product 0.249 inch (6.32 mm) and under in nominal thickness shall withstand, without cracking, bending at room temperature flat on itself with axis of bend parallel to the direction of rolling.

3.3.2.1 Bending requirements for product over 0.249 inch (6.32 mm) in nominal thickness shall be as agreed upon by purchaser and vendor.

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.

3.5 **Tolerances:** Shall conform to all applicable requirements of AMS 2202 or MAM 2202.

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 performing 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 requirements of this specification.

4.2 **Classification of Tests:**

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

4.2.2 **Periodic Tests:** Tests for bending (3.3.2) are periodic tests 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 or MAM 2355.

4.4 **Reports:** The vendor of the product shall furnish with each shipment a report stating that the product conforms to the chemical composition and other technical requirements. This report shall include the purchase order number, lot number, AMS 4001G, size, and quantity.

4.5 **Resampling and Retesting:** Shall be in accordance with AMS 2355 or MAM 2355.

5. **PREPARATION FOR DELIVERY:**

5.1 **Identification:** Shall be in accordance with AMS 2811.

5.2 **Protective Treatment:** Flat sheet, plate, and circles 12 inches (305 mm) or over in nominal diameter shall be protected, during shipment and storage, by interleaving with suitable paper sheets. Circles under 12 inches (305 mm) in nominal diameter shall be protected as agreed upon by purchaser and vendor.