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400 COMMONWEALTH DRIVE, WARRENDALE, PA 15096

AEROSPACE MATERIAL SPECIFICATION

AMS 4008F
Superseding AMS 4008E

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UNS A93003

ALUMINUM ALLOY SHEET AND PLATE
1.25Mn - 0.12Cu (3003-H14)
Strain Hardened

1. SCOPE:

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

1.2 Application: Primarily for parts where moderately severe forming or spinning is required.

2. APPLICABLE DOCUMENTS: The following publications form a part of this specification to the extent specified herein. The latest issue of Aerospace Material Specifications (AMS) shall apply. The applicable issue of other documents shall be as specified in AMS 2350.

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

2.1.1 Aerospace Material Specifications:

AMS 2202 - Tolerances, Aluminum Alloy and Magnesium Alloy Sheet and Plate
AMS 2350 - Standards and Test Methods
AMS 2355 - Quality Assurance Sampling and Testing of Aluminum-Base and Magnesium-Base Alloys, Wrought Products (Except Forgings and Forging Stock) and Flash Welded Rings

2.2 U.S. Government Publications: Available from Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120.

2.2.1 Military Standards:

MIL-STD-649 - Aluminum and Magnesium Products, Preparation for Shipment and Storage

3. TECHNICAL REQUIREMENTS:

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

	min	max
Manganese	1.0	1.5
Copper	0.05	0.20
Iron	--	0.7
Silicon	--	0.6
Zinc	--	0.10
Other Impurities, each	--	0.05
Other Impurities, total	--	0.15
Aluminum	remainder	

3.2 Condition: Strain hardened.

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

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

TABLE I

Nominal Thickness Inches	Tensile Strength psi	Elongation in 2 in. or 4D %, min
0.009 to 0.012, incl	20,000 - 26,000	1
Over 0.012 to 0.019, incl	20,000 - 26,000	2
Over 0.019 to 0.031, incl	20,000 - 26,000	3
Over 0.031 to 0.050, incl	20,000 - 26,000	4
Over 0.050 to 0.113, incl	20,000 - 26,000	5
Over 0.113 to 0.161, incl	20,000 - 26,000	6
Over 0.161 to 0.249, incl	20,000 - 26,000	7
Over 0.249 to 0.499, incl	20,000 - 26,000	8
Over 0.499 to 1.000, incl	20,000 - 26,000	10

TABLE I (SI)

Nominal Thickness Millimetres	Tensile Strength MPa	Elongation in 50 mm or 4D %, min
0.22 to 0.30, incl	140 - 180	1
Over 0.30 to 0.48, incl	140 - 180	2
Over 0.48 to 0.78, incl	140 - 180	3
Over 0.78 to 1.25, incl	140 - 180	4
Over 1.25 to 2.82, incl	140 - 180	5
Over 2.82 to 4.02, incl	140 - 180	6
Over 4.02 to 6.25, incl	140 - 180	7
Over 6.25 to 12.50, incl	140 - 180	8
Over 12.50 to 25.00, incl	140 - 180	10

3.3.1.1 Tensile properties of plate over 1.000 in. (25.00 mm) in nominal thickness shall be as agreed upon by purchaser and vendor.

3.3.2 Bending: Product 0.249 in. (6.25 mm) and under in nominal thickness shall withstand, without cracking, bending at room temperature through an angle of 180 deg around a diameter equal to the bend factor times the nominal thickness of the product with axis of bend parallel to the direction of rolling.

Nominal Thickness Inch	Nominal Thickness (Millimetres)	Bend Factor
0.009 to 0.113, incl	(0.22 to 2.82, incl)	0
Over 0.113 to 0.249, incl	(Over 2.82 to 6.25, incl)	2

3.3.2.1 Bending requirements for plate over 0.249 in. (6.25 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 internal and external imperfections detrimental to usage of the product.

3.5 Tolerances: Unless otherwise specified, tolerances shall conform to all applicable requirements of AMS 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. Results of such tests shall be reported to the purchaser as required by 4.4. 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 to determine conformance to requirements for composition (3.1), tensile properties (3.3.1), and tolerances (3.5) are classified as acceptance tests and shall be performed on each lot.

4.2.2 Periodic Tests: Tests to determine conformance to requirements for bending (3.3.2) are classified as periodic tests and shall be performed at a frequency selected by the vendor unless frequency of testing is specified by purchaser.

4.3 Sampling: Shall be in accordance with AMS 2355.

4.4 Reports:

4.4.1 The vendor of the product shall furnish with each shipment three copies of a report stating that the product conforms to the chemical composition and other technical requirements of this specification. This report shall include the purchase order number, AMS 4008F, size, and quantity.

4.4.2 The vendor of finished or semi-finished parts shall furnish with each shipment three copies of a report showing the purchase order number, AMS 4008F, contractor or other direct supplier of material, part number, and quantity. When material for making parts is produced or purchased by the parts vendor, that vendor shall inspect each lot of material to determine conformance to the requirements of this specification and shall include in the report either a statement that the material conforms or copies of laboratory reports showing the results of tests to determine conformance.

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

5. PREPARATION FOR DELIVERY:

5.1 Identification: Each sheet and plate shall be marked on one face, in the respective location indicated below, with the alloy number and temper, AMS 4008 or applicable Federal or Military specification designation, manufacturer's identification, and nominal thickness. The characters shall be of such size as to be legible, shall be applied using a suitable marking fluid, and shall be sufficiently stable to withstand normal handling. The markings shall have no deleterious effect on the product or its performance.

5.1.1 Flat Sheet and Plate Under 6 In. (150 mm) Wide: Shall be marked in one or more lengthwise rows of characters recurring at intervals not greater than 3 ft (900 mm).