AERONAUTICAL
MATERIAL SPECIFICATIONS
SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York 17, N.Y.

AMS 4028

Issued 8-15-58
Revised

ALUMINUM ALLOY SHEET AND PLATE
4.5Cu - 0.8Si - 0.8Mn - 0.5Mg (2014-0)

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.

2. APPLICATION: Primarily for formed parts requiring high strength after heat treatment.

3. COMPOSITION:

Copper	3.9 - 5.0
Silicon	0.50 - 1.2
Manganese	0.40 - 1.2
Magnesium	0.20 - 0.8
Iron	1.0 max
Zinc	0.25 max
Titanium	0.15 max
Chromium	0.10 max
Other Impurities, each	0.05 max
Other Impurities, total	0.15 max
Aluminum	remainder

4. CONDITION: Annealed.

5. TECHNICAL REQUIREMENTS:

5.1 Tensile Properties: Test specimens shall conform to ASTM E8-54T except from material less than 3/4 in. wide, and shall be cut across the direction of rolling except from material less than 9 in. wide. Elongation requirements apply only to material 3/4 in. and over in width.

Nominal Thickness Inch	Tensile Strength psi, max	Yield Strength at 0.2% Offset or at Extension Indicated (E = 10,400,000) psi, max	Extension Under Load in. in 2 in.	Elongation % in 2 in. min
0.020 to 0.499, incl	32,000	16,000	0.0071	16
Over 0.499 to 1.000, incl	32,000	--	--	10

5.1.1 When a dispute occurs between purchaser and vendor over the yield strength value, yield strength determined by the offset method shall apply.

5.2 Bending: Material 0.499 in. and under in thickness shall be capable of withstanding, 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 material, with axis of bend parallel to direction of rolling.

Nominal Thickness Inch	Bend Factor
0.124 and under	2
Over 0.124 to 0.249, incl	4
Over 0.249 to 0.499, incl	6

5.3 Properties After Heat Treatment: Material after proper solution and precipitation heat treatment shall conform to the following requirements.

5.3.1 Tensile Properties:

Nominal Thickness Inches	Tensile Strength psi, min	Yield Strength at 0.2% Offset or at Extension Indicated (E = 10,400,000) psi, min	Extension Under Load in, in 2 in.	Elongation % in 2 in. min
0.020 to 0.039, incl	64,000	57,000	0.0150	6
Over 0.039 to 0.499 incl	67,000	59,000	0.0153	8
Over 0.499 to 1.000, incl	67,000	59,000	0.0153	6

5.3.1.1 When a dispute occurs between purchaser and vendor over the yield strength value, yield strength determined by the offset method shall apply.

5.3.1.2 Tensile properties of plate thicker than 1.000 in. shall be as agreed upon by purchaser and vendor.

5.3.2 Bending: Material 0.499 in. and under in thickness shall be capable of withstanding, 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 material, with axis of bend parallel to direction of rolling.

Nominal Thickness Inch	Bend Factor
0.020 to 0.039, incl	5
Over 0.039 to 0.050, incl	6
Over 0.050 to 0.124, incl	8
Over 0.124 to 0.249, incl	10
Over 0.249 to 0.499, incl	12

6. QUALITY: Material shall be uniform in quality and condition, clean, sound, and free from foreign materials and from internal and external imperfections detrimental to fabrication or to performance of parts.

7. TOLERANCES: Unless otherwise specified, tolerances shall conform to the latest issue of AMS 2202 as applicable. Thickness tolerances shall conform to Table II.