

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
29 West 39th Street
New York City

AMS 4032B

Issued 12-5-39
Cancelled 4-1-43
Revised 11-1-44

ALUMINUM ALLOY SHEET AND PLATE Copper Manganese Magnesium (17S-T)

Page 1 of 3 pages

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

2. **COMPOSITION:**
- | | |
|-------------------------|-------------|
| Copper | 3.50 - 4.50 |
| Manganese | 0.40 - 1.00 |
| Magnesium | 0.20 - 0.80 |
| Iron | 1.00 max |
| Silicon | 0.80 max |
| Chromium | 0.25 max |
| Titanium | 0.15 max |
| Zinc | 0.10 max |
| Other Impurities, each | 0.05 max |
| Other Impurities, total | 0.15 max |
| Aluminum | remainder |

3. **CONDITION:** Solution heat treated and aged, conforming to the following minimum physical properties. Test specimens shall be cut across direction of rolling, except from sheet less than 9 inches wide. Material up to and including 0.500 inch thick shall not crack when bent 180°, at room temperature, with axis of bend parallel to direction of rolling, over a diameter equal to bend factor times thickness of material. Test specimens shall conform to ASTM E8.

Thickness, Inches	Tensile Strength, psi	Yield Strength at 0.2% Offset or at 0.0106 in. Extension in 2 in., psi	Elongation % in 2 in.	Bend Factor
0.010 - 0.020	58,000	34,000	15	3
0.021 - 0.040	58,000	34,000	17	3
0.041 - 0.128	58,000	34,000	18	4
0.129 - 0.249	58,000	34,000	15	6
0.250 - 0.500	58,000	34,000	12	8
0.501 - 1.000	58,000	34,000	10	-

4. **QUALITY:** The material shall be uniform in quality and temper, commercially flat, clean, sound, smooth, and free from buckles, seams, cracks, laminations, blisters, and other injurious defects within the limits of best commercial manufacturing practices. Material revealing defects during fabrication shall be subject to rejection.

5. **TOLERANCE:** Thickness shall be within the following tolerances:

(a) Flat sheet.-

Nominal Thickness, Inches	Tolerance in % of Nominal Thickness (%T) or in inches, plus or minus						
	Widths up to 36"	Widths over 36" to 42"	Widths over 42" to 48"	Widths over 48" to 54"	Widths over 54" to 60"	Widths over 60" to 66"	Widths over 66" to 72"
	incl.	incl.	incl.	incl.	incl.	incl.	incl.
*Up to 0.014	0.0015						
0.015 - 0.018	0.002						
0.019 - 0.025	0.002	0.0025					
0.026 - 0.032	0.002	0.0025	0.0025				
0.033 - 0.040	0.0025	0.003	0.003	0.004	0.005		
0.041 - 0.064	0.003	0.004	0.004	0.005	0.006	0.006	0.007
0.065 - 0.091	0.003	0.004	0.004	0.005	0.006	0.008	0.010
0.092 - 0.125	0.0045	0.005	0.005	0.005	0.007	0.010	0.012
0.126 - 0.249	4%T	5%T	5%T	5%T	6%T	8%T	10%T

*Tolerance applies up to maximum width of 28 inches

Nominal Thickness, Inches	Tolerance in % of Nominal Thickness (%T) or in inches, plus or minus				
	Widths over 72" to 78"	Widths over 78" to 84"	Widths over 84" to 90"	Widths over 90" to 96"	Widths over 96" to 102"
	incl.	incl.	incl.	incl.	incl.
0.051 - 0.064	0.008	0.009			
0.065 - 0.091	0.010	0.011	0.012		
0.092 - 0.125	0.013	0.014	0.016	0.018	0.020
0.126 - 0.249	10%T	11%T	11%T	12%T	14%T

(b) Coiled sheet.-

Nominal Thickness, Inches	Tolerance in inches, plus or minus	
	Widths up to 18" incl.	Widths over 18" to 24" incl.
Up to 0.016	0.0015	0.0015
0.017 - 0.025	0.0015	0.002
0.026 - 0.040	0.002	0.0025
0.041 - 0.064	0.0025	0.003
0.065 - 0.072	0.0035	0.004
0.073 - 0.081	0.004	0.004
0.082 - 0.091	0.0045	0.005
0.092 - 0.102	0.005	0.005

(c) Plate.-

Nominal Thickness, Inches	Tolerance in % of Nominal Thickness, plus or minus			
	Widths up to 54"	Widths over 54" to 72"	Widths over 72" to 90"	Widths over 90" to 120"
	incl.	incl.	incl.	incl.
0.250 - 0.374	5%T	6%T	7%T	8%T
0.375 - 0.500	5%T	5%T	6%T	7%T
0.501 - 1.000	4%T	4%T	5%T	6%T