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# AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.

29 West 39th Street

New York City

AMS

4037

## ALUMINUM ALLOY SHEET

Copper Magnesium Manganese

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

2. **COMPOSITION:**

Copper	3.8 - 4.9
Magnesium	1.2 - 1.8
Manganese	0.3 - 0.9
Iron	0.5 max
Silicon	0.5 max
Chromium	0.25 max
Zinc	0.03 max
Other Impurities, each	0.03 max
Other Impurities, total	0.10 max
Aluminum	remainder

3. **CONDITION:** (a) Heat treated conforming to the following minimum physical properties when test pieces are cut from the sheet in any direction:

<u>Thickness,</u> <u>inches</u>	<u>Tensile Strength,</u> <u>lb per sq in.</u>	<u>Yield Strength,</u> <u>lb per sq in.</u>	<u>Elongation,</u> <u>% in 2 in.</u>	<u>Bend</u> <u>Factor</u>
0.010 - 0.020	62,000	40,000	12	4
0.021 - 0.040	"	"	15	4
0.041 - 0.051	"	"	15	5
0.052 - 0.128	"	"	17	6
0.129 - 0.250	"	"	15	8
0.251 - 0.500	"	"	12	10
0.501 - 1.000	"	"	8	—

(b) The material shall not crack when cold bent 180° over a diameter equal to the thickness times the above bend factor, the axis of the bend being parallel to the direction of rolling.

4. **QUALITY:** The material shall be uniform in quality, and temper, straight, flat, clean and smooth, free from seams, laminations, blisters and other defects. Material revealing defects during fabrication is subject to rejection.

5. **TOLERANCE:** The following variations in thickness are permissible for widths 36" and less. All dimensions are in inches:

<u>Thickness</u>	<u>Tolerance, plus or minus</u>
0.249 - 0.129	4% of thickness
0.128 - 0.092	0.0045
0.091 - 0.051	0.003
0.050 - 0.037	0.0025
0.036 - 0.018	0.002
0.017 - 0.010	0.0015