

AERONAUTICAL MATERIAL SPECIFICATION

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

AMS 5517A

Issued 11-1-41

Revised 6-1-42

STEEL SHEET AND STRIP, CORROSION RESISTANT
Cold Rolled High Ductility Type
18 Chromium - 8 Nickel (125,000 T.S.)

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

2. COMPOSITION:

Carbon	0.15 max
Manganese	0.20 to 2.50
Silicon	0.20 to 1.50
Phosphorus	0.04 max
Sulphur	0.04 max
Copper	0.50 max
Chromium	17.00 min
Nickel	7.00 min

3. CONDITION: (a) Hot rolled, solution heat treated, pickled and cold rolled (No. 2B finish)

(b) Tensile test specimens shall be pulled at a rate of 0.05 inch per inch per minute and shall conform to the following requirements:

Tensile Strength, lbs/sq.in.	125,000 - 150,000
Yield Strength, lbs/sq.in.	75,000 min
Extension Under Load, Inch in 2 inches	0.0098
Elongation, % in 2 inches	25 min

For widths 9 inches or over, tensile test specimens shall be taken with the axis perpendicular to the direction of rolling. For widths less than 9 inches, tensile test specimens shall be taken with the axis parallel to the direction of rolling.

(c) Bend test specimens shall withstand bending in any direction through an angle indicated in the following table on a diameter equal to "N" times the least thickness of the specimen, without cracking.

<u>Thickness, Inch</u>	<u>Angle, Deg.</u>	<u>Bend Factor "N"</u>
Up to 0.050	180	1
0.051 and over	90	2

4. QUALITY: (a) This material must be uniform in quality, free from surface or internal defects and must not reveal material defects during fabrication.

(b) All sheets or strips shall be free from grease or other foreign matter, and shall have a workmanlike finish.

(c) The sheets or strips shall not have buckles exceeding the following limits:

Up to 0.016 inch thick	1/4 inch
0.016 to 0.030 inch thick	3/8 inch
Over 0.030 inch thick	1/2 inch

Height of buckle is the maximum rise from a flat surface on which the sheet or strip lies.

(d) The camber of the sheets or strips in any 8 foot length or less shall not exceed the following:

Up to and including 1 1/2 inch wide	1/2 inch
Over 1 1/2 inch wide	1/4 inch

5. **TOLERANCE:** The following variations in thickness are permissible, all dimensions being in inches:

TABLE I
STANDARD SHEET TOLERANCES
Thickness Tolerances
All Finishes

Ordered Thickness Inch	Tolerance Plus or Minus Inch
0.005	0.001
0.006 to 0.007	0.0015
0.008 to 0.0160	0.002
0.0161 to 0.026	0.003
0.027 to 0.040	0.004
0.041 to 0.058	0.005
0.059 to 0.072	0.006
0.073 to 0.083	0.007
0.084 to 0.098	0.008
0.099 to 0.114	0.009
0.115 to 0.130	0.010
0.131 to 0.145	0.012
0.146 to 0.176	0.014

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