

# AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.  
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## AMS 5519B

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STEEL SHEET AND STRIP, CORROSION RESISTANT  
Cold Rolled High Ductility Type  
18 Chromium - 8 Nickel (185,000 T.S.)

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

2. COMPOSITION:

Carbon	0.15 max
Manganese	0.20 to 2.50
Silicon	0.20 - 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.	185,000 min
Yield Strength, lbs/sq. in.	140,000 min
Extension Under Load, Inch in 2 inches	0.0148
Elongation % in 2 inches	
Thicknesses up to 0.015	8 min
Thicknesses over 0.015	9 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</u>
0.030 and Under	180	4
0.031 to 0.050	90	3

4. QUALITY: (a) This material must be uniform in quality, free from surfaces 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 inches wide    1/2 inch  
 Over 1 1/2 inches 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