

AERONAUTICAL MATERIAL SPECIFICATION

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Revised

PLASTIC SHEET AND PLATE Cotton Fabric Reinforced Phenol-Formaldehyde.

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. **APPLICATION:** Primarily intended for parts where good mechanical properties are important but electrical properties are of secondary importance and no post-forming is required. Often used for fairleads and tubing supports.
3. **MATERIAL AND FABRICATION:** Flat sheets, consisting of laminations of cotton fabric which have been impregnated with a thermosetting, phenolic type of synthetic resin, and properly cured.
4. **TECHNICAL REQUIREMENTS:**
 - 4.1 **General:**
 - 4.1.1 **Color:** Unless otherwise specified, the color shall be natural. Supplementary coloring, when specified, shall be substantially uniform throughout the sheet. The faces of the sheets shall be substantially free from streaks or stains.
 - 4.1.2 **Finish:** Semi-gloss.
 - 4.1.3 **Weathering:** When specified, the product shall have weather resistance acceptable to the purchaser as determined by a procedure agreed upon by purchaser and vendor.
 - 4.1.4 **Corrosion:** The product shall not have a corrosive or other deleterious effect on other materials when exposed to conditions normally encountered in service. Discoloration of metal shall not be considered objectionable.
 - 4.2 **Properties:** Unless otherwise specified, the product shall conform to the following requirements in both warp and filling directions; tests shall be performed on the product supplied and in accordance with the listed ASTM methods, insofar as practicable:

<u>Property</u>	<u>Value</u>	<u>Test Method</u>
Tensile Strength, psi, min	7,500	ASTM D229-46
Ultimate Compressive Strength Flatwise, psi, min	35,000	ASTM D229-46
Flexural Strength, Flatwise, psi, min	16,000	ASTM D790-45T
Impact Strength, Edgewise, (Notched Izod) ft-lb per in. of notch, min	2.0	ASTM D256-47T

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<u>Property</u>	<u>Value</u>	<u>Test Method</u>
Water Absorption, (24-hr immersion)		ASTM D570-42
% gain, max		
1/32 in. thickness	7.5	
1/16	4.4	
3/32	3.2	
1/8	2.5	
3/16	1.9	
1/4	1.6	
1/2	1.2	
3/4	1.1	
1 and over	1.0	

Note: For intermediate thicknesses not given in this table, the value for the next smaller thickness applies.

4.3 Machinability: Sheet shall not split, crack, chip or delaminate when drilled, sawed, tapped or machined in any direction.

4.4 Resistance to Heat: Sheet shall not soften, split, or crack when heated at 250F + 2 for five hours.

5. QUALITY: The sheet shall be uniform in quality and condition, free from blisters, wrinkles, cracks, crazing and surface roughness, and reasonably free from other small defects such as scratches and dents.

6. SIZES AND TOLERANCES: Unless otherwise specified, the following shall apply:

6.1 Length and Width: Shall not vary more than ± 1 in. from the nominal dimensions.

6.2 Thickness: Standard thicknesses and tolerances shall be as follows:

Nominal Thickness Inch	Tolerance, In. Plus and Minus	Nominal Thickness Inch	Tolerance, In. Plus Only	Nominal Thickness Inches	Tolerance, In. Plus Only
1/32	0.0065	1/4	0.030	1	0.065
3/64	0.0075	5/16	0.035	1 1/8	0.069
1/16	0.0075	3/8	0.040	1 1/4	0.073
3/32	0.009	7/16	0.044	1 3/8	0.077
1/8	0.010	1/2	0.048	1 1/2	0.081
5/32	0.011	5/8	0.053	1 5/8	0.085
3/16	0.0125	3/4	0.058	1 3/4	0.089
7/32	0.014	7/8	0.062	1 7/8	0.093
				2	0.097

6.3 Warp and Twist: The warp and twist are determined by suspending the sheet in a vertical position against a horizontal straight edge at least 36 in. long and measuring the greatest deviation. The deviation from the straight edge shall not exceed 1% for thicknesses up to and including 1/4 in., or 0.5% for thicknesses over 1/4 in. and including 1/2 in. Warp or twist shall be stated as a percentage of the 36-in. length in the direction measured.