AERONAUTICAL MATERIAL SPECIFICATION

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

AMS 3607A
Issued 5-1-48
Revised 6-15-53

PLASTIC SHEET AND PLATE
Cotton Fabric Reinforced Phenol-Formaldehyde

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

2. APPLICATION: Primarily for parts where good mechanical properties are important but electrical properties are of secondary importance and no postforming 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 sheets. The faces of the sheets shall be substantially free from streaks or stains.

4.1.2 Finish: Semi-gloss, unless otherwise specified.

4.1.3 Weathering: When specified, the sheet 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 effect on other materials when exposed to conditions normally encountered in service. Discoloration of metals shall not be considered objectionable.

4.1.5 Machinability: Sheet, at room temperature shall not split, crack, chip or delaminate when punched in thicknesses 1/8 in. and under or when drilled, sawed or machined in any thickness.

4.1.6 Resistance to Heat: Sheet shall not soften, split, or crack when heated at 250 F ± 2 for 5 hours.

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 listed ASTM methods, or as otherwise specified.

4.2.1	Tensile Strength, psi, min	7,500	ASTM D638-49T
4.2.2	Ultimate Compressive Strength Flatwise, psi, min	35,000	ASTM D695-49T
4.2.3	Flexural Strength Flatwise, psi, min	16,000	ASTM D790-49T
4.2.4	Impact Strength, Edgewise (Notched Izod) ft-lb per in. of notch, min	2.0	ASTM D256-47T
ø 4.2.5	Afterglow (as received), sec, max	4	See 4.3
4.2.6 ø	Afterglow (after conditioning 168 hr at 225 F), sec, max	15	See 4.3

Note. Material shall be capable of meeting this requirement but individual lots need not be tested.

4.2.7 Water absorption (24 hr immersion) % gain, max — ASTM D570-42

ø

Nominal Thickness, Inch	
1/32	8.0
3/64	5.2
1/16	4.4
3/32	3.2
1/8	2.5
5/32	2.2
3/16	1.9
7/32	1.8
1/4	1.6
1/2	1.2
3/4	1.1
1 and over	1.0

Note. For intermediate thicknesses not listed in the table, the value for the next smaller thickness shall be used.

4.3 Test Method - Afterglow: Three specimens, 6 x 1/2 in., shall be placed in a shielded area of subdued light, such as an unlighted fume hood, mounted horizontally as in ASTM D635-44, except that the screen need not be used. A Meker or similar large top burner with a flame 1 in. long shall be placed so that the tip of the flame contacts the plastic, and 1 in. of the plastic is covered by the flame. The specimens shall be heated 15 sec for each 1/32 in. of thickness and fraction thereof. At the end of the ignition period the burner shall be removed and the flame on the specimen shall be blown out. The duration of visible glow shall then be noted.

5. QUALITY: The product 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	5/16	0.035	1	0.065
3/64	0.0075	3/8	0.040	1 1/8	0.069
1/16	0.0075	7/16	0.044	1 1/4	0.073
3/32	0.009	1/2	0.048	1 3/8	0.077
1/8	0.010	5/8	0.053	1 1/2	0.081
5/32	0.011	3/4	0.058	1 5/8	0.085
3/16	0.0125	7/8	0.062	1 3/4	0.089
7/32	0.014			2	0.097
1/4	0.30				

6.3 Warp and Twist: Shall not exceed 1% based on a 36 in. length, and shall be determined in accordance with ASTM D709-49T.

7. REPORTS:

7.1 Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a report stating that the product meets the requirements of this specification. This report shall include the purchase order number, material specification number, vendor's compound number, size, thickness, and quantity.

7.2 Unless otherwise specified, the vendor of finished or semi-finished parts shall furnish with each shipment three copies of a report showing the purchase order number, material specification number, contractor or other direct supplier of material, part number, and quantity. When material for making parts is produced or purchased by the parts vendor, that vendor shall inspect each lot of material to determine conformance to the requirements of this specification, and shall include in the report a statement that the material conforms, or shall include copies of laboratory reports showing the results of tests to determine conformance.