

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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New York City

AMS 3940 A

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COMPOSITION BOARD

1. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
2. FORM: Flat panels.
3. APPLICATION: Primarily for parts requiring moderate strength, such as panelling and sheathing of shipping containers.
4. MATERIAL AND FABRICATION: Wood fibres physically separated and then heavily compressed to obtain the required strength, using the natural wood lignins as the bonding agent, in accordance with the following:

4.1 Wood Species: Shall be one or a combination of the following:

Spruce	Cottonwood
Fir	Willow
Poplar	Yellow Pine
Gumwood	Redwood

Wood fibres shall be short and coarse so as to yield a board of high density and rigidity.

- 4.2 Laminating: Panels 5/16 inch and under in nominal thickness shall be of one solid sheet. Panels over 5/16 inch in nominal thickness may be of one solid sheet or may be laminated from thinner sheets. Panels 1/4 inch and over in nominal thickness and requiring both faces smooth may be laminated from thinner sheets. Bonding of laminated panels shall be accomplished with a thermosetting synthetic resin glue resistant to the formation and growth of molds and fungi.

- 4.3 Chemical Treatment: Panels may be chemically treated to improve strength and abrasion resistance, and to reduce moisture absorption.

5. TECHNICAL REQUIREMENTS:

- 5.1 Tensile Strength: Tensile strength, reported as the average of not less than five determinations, shall be not lower than 4100 psi, when determined as follows; strength properties shall be approximately equal in all surface directions of board:

- 5.1.1 Tensile test specimens shall be approximately 9 in. long x 2 in. wide and shall have a gage section 2 in. long x 1 in. wide. The radius blending the gage section into the grip area shall be not less than 3 in. The rate of travel of movable members of the testing machine shall be 0.05 - 0.25 in. per min.

- 5.2 Moisture Resistance: Board shall not increase in weight by more than 10% and no dimension shall change by more than 1% when tested as follows:

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5.2.1 Specimens shall be conditioned at a temperature of 70-85 F and relative humidity of 50-55% for 24 hr, weighed and measured. Specimens shall then be submerged in tap water at a temperature of 70-85 F for 24 hr, and reweighed and remeasured immediately after removing from water and wiping or blotting off excess moisture.

5.3 Workability: Board shall not crack, split, chip or delaminate when drilled, sawed or nailed in any direction.

6. QUALITY: Panels shall be smooth, flat, and free from foreign materials and from internal and external defects detrimental to fabrication or to performance of parts.

7. TOLERANCES: Unless otherwise specified, tolerances shall conform to the following requirements.

7.1 Thickness:

⊕	Nominal Thickness inch	Tolerance, inch plus and minus
	0.500 and under	0.020
	Over 0.500	0.035

7.2 Length and Width: A tolerance of ± 0.062 in. will be allowed on length and width of panels.

7.3 Squareness: Panels shall be square within 0.125 in.

8. REPORTS:

8.1 Unless otherwise specified, the vendor of composition board shall furnish with each shipment three copies of a notarized report showing the results of tests to determine conformance to the requirements of this specification, or stating that the board conforms to the requirements specified. This report shall include the purchase order number, material specification number, size and quantity.

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

9. IDENTIFICATION: Unless otherwise specified, each panel shall be marked with AMS 3940A and the manufacturer's identification. Markings shall be clearly legible and shall not be obliterated by normal handling.

10. PACKAGING:

10.1 Unless otherwise specified, packaging shall be accomplished in accordance with standard commercial practice and in such a manner as to ensure that the composition board, during shipment and storage, will be protected against damage from exposure to weathering or any normal hazard.