

AERONAUTICAL MATERIAL SPECIFICATION

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

AMS3940B

Issued 7-1-47

Revised 12-1-51

FIBREBOARD, HARD PRESSED, STRUCTURAL

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 or chemically separated and then heavily compressed to obtain the required strength, using the natural wood lignins or other suitable adhesive 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 | Pine |
| Gumwood | Redwood |
| Aspen | Douglas Fir |
 - 4.2 Laminating: Panels 5/16 in. and under in nominal thickness shall be of one solid sheet. Panels over 5/16 in. in nominal thickness may be of one solid sheet or may be laminated from thinner sheets. Panels 1/4 in. 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: Shall be not lower than the following, when determined in accordance with ASTM D1037-49T, Sections 20 through 25, except that tests in the wet condition are not required; strength shall be approximately equal in all surface directions of panel:

Nominal Thickness
Inch

3/16 and under
Over 3/16

Tensile Strength
psi, min

4100
3100

Section 7C of the SAE Technical Board rules provides that: "All technical reports, including standards approved and practices recommended, are advisory only. Their use by anyone engaged in industry or trade is entirely voluntary. There is no agreement to adhere to any SAE standard or recommended practice, and no commitment to conform to or be guided by any technical report in formulating and reporting technical data. Prospective users of the report are responsible for protecting themselves against liability for infringement of patents, patents which may apply to the subject matter."

- 5.2 Moisture Resistance: Board shall not change in dimensions or weight by more than the following when tested in accordance with ASTM D1037-49T; Sections 46 through 55, except that specimens for dimensional change shall be immersed in water in accordance with Section 50 instead of being exposed to humid air:

| Nominal Thickness Inch | Dimensional Increase %, max | | Weight Increase %, max |
|---------------------------|--------------------------------|-----------|---------------------------|
| | Length and Width | Thickness | |
| 1/10 | 1 | 14 | 15 |
| 1/8 | 1 | 11 | 15 |
| 3/16 | 1 | 10 | 12 |
| 1/4 | 1 | 8 | 10 |
| 5/16 | 1 | 8 | 8 |

- 5.3 Workability: Board shall not crack, split, chip or delaminate when drilled, sawed or nailed perpendicularly to the surface.

6. QUALITY: Material shall be sound, and free from foreign materials and from internal and external defects detrimental to fabrication or to performance of parts. Panels shall be flat and shall have at least one face smooth, except that laminated panels shall be smooth on both faces.

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

7.1 Thickness:

7.1.1 Single Panels:

| Nominal Thickness Inch | Actual Thickness, Inch | |
|---------------------------|------------------------|-------|
| | min | max |
| 1/10 | 0.100 | 0.110 |
| 1/8 | 0.125 | 0.155 |
| 3/16 | 0.175 | 0.205 |
| 1/4 | 0.235 | 0.275 |
| 5/16 | 0.295 | 0.335 |

- 7.1.2 Laminated Panels: Plus and minus 0.005 in. x number of plies.

- 7.2 Length and Width: Plus and minus 0.062 inch.

- 7.3 Squareness: Panels shall be square within 0.125 inch.

8. REPORTS:

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