AEROSPACE
MATERIAL SPECIFICATIONS
SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York 17, N.Y.

AMS 3940D

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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 chamically 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 D1037-56T, 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	Tensile Strength psi, min
3/16 and under	4100
Over 3/16	3100

5.2 Moisture Resistance: Board shall not change in dimensions or weight by more than the following when tested in accordance with 5.2.1.

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

5.2.1 Tests shall be conducted in accordance with ASTM D1037-56T, Sections 69 through 79, except as follows:

5.2.1.1 Original dimensions of specimens for determining dimensional increases ϕ shall be those measured after conditioning the specimens as in Section 71.

5.2.1.2 Specimens for weight increase shall be submerged horizontally for 24 hours. Specimens for dimensional increase shall be submerged horizontally for 24 hr instead of being exposed to humid air and shall not be oven dried as in Section 74.

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 imperfections 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	0.090	0.110
1/8	0.115	0.145
3/16	0.170	0.200
1/4	0.225	0.260
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 0.016 in. per foot of length or width.