AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS 3675

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Revised

INSULATION, SOUND AND THERMAL
Resin-Bonded Glass Fiber

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

2. APPLICATION: The product is primarily intended for heat (not exceeding 500 F) and sound insulation.

3. MATERIAL AND FABRICATION: The product shall be composed of glass fibers matted into sheets and bonded with a thermosetting resin.

4. TECHNICAL REQUIREMENTS: (a) When tested in accordance with ASTM C177-45, the thermal conductivity of the material shall not exceed 0.26 Btu per in. of thickness per square foot per hour per degree Fahrenheit temperature difference at a mean temperature of 70 F.

(b) When tested in accordance with ASTM C167-44, the material shall have a density of 0.6 ± 0.09 pound per cubic foot.

(c) When tested in accordance with ASTM C167-44, the thickness shall be 1/2 ± 1/16 in.

(d) Moisture Absorption.- Percentage moisture increase shall not exceed 1% when determined as follows: A 6-in. square specimen, conditioned in accordance with ASTM D578-44T, shall be placed in a suitable weighing bottle and the total weight carefully noted. This weight less the weight of the weighing bottle shall be considered the conditioned weight of the specimen. The specimen shall then be removed from the bottle and brought to a uniform temperature of 120 ± 2 F; subjected to a relative humidity of 95 ± 3% and a temperature of 120 ± 2 F for 96 hours. The specimen shall then be replaced in the weighing bottle and the total weight recorded. The total weight less the weight of the weighing bottle shall be considered the wet weight of the specimen. The percentage of moisture increase shall be calculated by means of the following formula:

$$\text{Percent increase} = \frac{\text{Wet weight} - \text{Conditioned weight} \times 100}{\text{Conditioned weight}}$$

(e) Vibration Resistance.- The percentage weight of material loss during the test shall be not greater than 0.5%. There shall be no appreciable packing, disintegration, or any other imperfections affecting the serviceability or appearance of the assembly after completion of the vibration tests conducted as follows: A specimen at least 20 inches long and 12 inches wide shall be mounted with the long sides vertically clamped in such fashion that the top and bottom shall be open and the entire panel shall be free to vibrate horizontally. The specimen shall be so cut that any stitching which does not cross upon itself shall be vertical. In cases where cross stitching is used, the specimen shall be cut so that the longest dimension of the stitch pattern is vertical. The specimen shall be vibrated horizontally for 12 hours through a double amplitude of at least 0.04 in. at a frequency of 2000 cycles per minute. Before the test is begun, the specimen shall be carefully weighed and after completion of the vibration test, the specimen shall be weighed again, any loss of weight being noted