



SURFACE VEHICLE STANDARD

J315™

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Superseding J315 MAR2010

Fiberboard Test Procedure

RATIONALE

SAE J315 is being revised to remove a duplicate footnote, remove a footnote referencing a now-discontinued product, and edit one footnote to reflect a change in the vendor's name.

1. SCOPE

This SAE Standard provides test methods for determining the critical characteristics of basic or finished fiberboard products. Where applicable, methods of test developed by SAE and ASTM have been referenced.

2. REFERENCES

2.1 Applicable Publications

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

SAE J361	Procedure for Visual Evaluation of Interior and Exterior Automotive Trim
SAE J365	Method of Testing Resistance to Scuffing of Trim Materials
SAE J369	Flammability of Polymeric Interior Materials - Horizontal Test Method
SAE J912	Test Method for Determining Blocking Resistance and Associated Characteristics of Automotive Trim Materials
SAE J913	Test Method for Wicking of Automotive Fabrics and Fibrous Materials
SAE J947	Glossary of Fiberboard Terminology
SAE J948	Test Method for Determining Resistance to Abrasion of Automotive Bodycloth, Vinyl, and Leather, and the Snagging of Automotive Bodycloth

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Full document details: SAE J315_202208

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Documents

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SAE J949	Test Method for Determining Stiffness of Interior Trim Materials and Substrates by a Three Point Bending Test
SAE J1885	Accelerated Exposure of Automotive Interior Trim Components Using a Controlled Irradiance Water Cooled Xenon-Arc Apparatus
SAE J2412	Accelerated Exposure of Automotive Interior Trim Components Using a Controlled Irradiance Xenon-Arc Apparatus

2.1.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM D95	Method of Test for Water in Petroleum Products and Other Bituminous Materials
ASTM D644	Method of Test for Moisture in Paper
ASTM D645	Standard Test Method for Thickness of Paper and Paperboards
ASTM D747	Test Method for Apparent Bending Modulus of Plastics by Means of a Cantilever Beam
ASTM D774	Method of Test for Bursting Strength of Paper
ASTM D5420	Standard Test Method for Impact Resistance of Flat, Rigid Plastic Specimen by Means of a Striker Impacted by a Falling Weight
ASTM D5628	Standard Test Method for Impact Resistance of Flat, Rigid Plastic Specimen by Means of a Striker Impacted by a Falling Dart

3. FIBERBOARD TERMINOLOGY

Refer to SAE J947.

4. RECOMMENDATIONS

Fiberboard fabrication and finishing techniques, such as crease bending, scoring, forming, perforating, and the application of barrier coatings or paints, will modify the characteristics of the producer's basic material. Consequently, it is recommended that separate but related specifications be established for (1) the properties of the basic product and (2) the finished processed material.

5. CONDITIONING

Tests for material classification and for arbitration purposes shall be made on material conditioned to a constant weight in a controlled atmosphere of $21\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$ ($70\text{ }^{\circ}\text{F} \pm 2\text{ }^{\circ}\text{F}$) and 50 or 65% relative humidity (as specified by the user). Quality control tests can be conducted on unconditioned specimens unless otherwise specified by the user.

6. THICKNESS

Thickness shall be measured by a micrometer having two plane, parallel faces, the smaller of which should be circular and 161 to 212 mm² (0.25 to 0.33 in²) in area. When the specimen is clamped between the faces, it should be under a steady pressure of 48.23 to 62.0 kPa (7.0 to 9.0 psi). The graduations of the dial face should be such as to permit estimating the thickness to at least 0.013 mm (0.0005 inch).

The sample should be comprised of at least three representative specimens, each of which should be tested in four separate places. The test should be made by placing the specimen between the jaws of the micrometer and lowering the pressure foot gently upon the surface of the specimen, taking care that the edge of the foot is at least 6.3 mm (0.25 inch) from the edge of the specimen. The average thickness should be reported to the nearest 0.013 mm (0.0005 inch), and shall be supplemented by maximum and minimum readings.

Fundamental technique and apparatus used shall be similar to those of ASTM D645.

NOTE: Specimens cut for dimensional stability tests are satisfactory for these measurements.

7. WEIGHT

The weight shall be determined by weighing 305 × 305 mm (1 × 1 foot) of material to the nearest 0.10 gram. Dimensions shall be measured accurately to the nearest 0.25 mm (0.01 inch). Three representative specimens shall be weighed and the average weight per area computed and reported in grams per square meter. This calculated weight per area can also be converted to and expressed in pounds per 1000 ft².

8. DENSITY

Density in kilograms per cubic meter (pounds per cubic foot) shall be computed using data obtained from the average thickness and weight report.

9. BURSTING STRENGTH

The bursting strength shall be determined using the conventional power-driven hydraulic type machine. The average value to the nearest 34.5 kPa (5 psi) obtained by making five bursts on each side of three specimens is to be reported. Fundamental technique and apparatus used shall conform to ASTM D774, Method of Test for Bursting Strength of Paper.

10. COHESIVE STRENGTH

This test is designed to measure the force required to rupture a sample of paperboard at the weakest layer.

10.1 Apparatus

Jumbo Mullen Tester (Figure 1):

- a. Brass disks, 1.6 mm (0.063 inch) thick and 60.71 mm (2.390 inch) diameter
- b. Annular brass disks, 1.6 mm (0.063 inch) thick, 76 mm (3 inch) outer diameter, and 34.93 mm (1.375 inch) inner diameter
- c. Steel sleeve, approximately 69.9 mm (2.75 inch) inside diameter, 13 mm (0.5 inch) high, and 3.18 mm (0.125 inch) thick
- d. Means of cleanly cutting an annular sample of 60.71 mm (2.390 inch) outer diameter and 34.93 mm (1.375 inch) inner diameter

10.2 Procedure

Cut a 356 × 76 mm (14 × 3 inch) sample of the board to be tested. Cover each side with a strip of 76 mm (3 inch) double-face, pressure-sensitive tape or equivalent without peeling the protective liner, and die cut four annular specimens for testing. Peel one of the protective liners from each sample and press lightly to one of the solid disks; then peel the other liner and place an annular disk on the other side, using the hole in each for alignment.