SAE International™

SURFACE VEHICLE RECOMMENDED PRACTICE

SAE J80

REV. DEC2004

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Superseding J80 MAY1997

Automotive Rubber Mats

1. Scope

This SAE Recommended Practice covers the requirements for rubber floor mats made from five types of rubber compounds as required by the physical property requirements of the application. The SAE Committee on Automotive Rubber Specifications has concluded that SAE J80 duplicates the information in ASTM D 925 and SAE J200/ASTM D 2000. Attempts to find any company using the specification have not been successful. In light of this fact SAE J80 will be cancelled in 2005.

1.1 Rationale

The SAE Committee on Automotive Rubber Specifications has concluded that J80 duplicates the information in other ASTM and SAE specifications.

2. References

2.1 Applicable Publications

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

2.1.1 SAE PUBLICATION

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J369—Flammability of Automotive Interior Materials—Horizontal Test

2.1.2 AATCC PUBLICATION

Available from the American Association of Textile Chemists and Colorists (AATCC), One Davis Drive, P.O. Box 12215, Research Triangle Park, NC 27709-2215; Phone 919-549-8141; Fax 919-549-8933.

American Association of Textile Chemist and Colorist Test Method 16A

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2.1.3 ASTM PUBLICATIONS

Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959

ASTM D 412—Test Methods for Rubber Properties in Tension
ASTM D 573—Test Method for Rubber—Deterioration in an Air Oven
ASTM D 624—Test Method for Rubber Property—Tear Resistance
ASTM D 1148—Test Method for Rubber Deterioration—Heat and Ultraviolet Light Discoloration of Light-Colored Surfaces
ASTM D 2240—Test Method for Rubber Property—Durometer Hardness

3. General Requirements

The following requirements are minimal product standards:

3.1 Sampling

A representative mat shall be selected from each lot to be tested.

3.2 Workmanship and Finish

The workmanship and finish shall be such as to provide a mat with a clean surface, clearly trimmed edges, holes free from slugs, and otherwise neat appearance.

3.3 Color

The color shall be black unless otherwise specified by purchaser.

3.4 Packing, Marking, and Shipping

Details regarding packing, marking, and shipping are subject to individual arrangements between purchaser and supplier.

3.5 Retests and Rejections

Any lot of mats which fails in one or more tests shall be resampled and retested for which purpose two additional mats shall be selected from the lot that failed to meet the requirements. Failure of either of the retested samples to meet any of the specification requirements shall be cause for final rejection.

4. Physical Test Requirements

4.1 Preaging

Sections of automotive mats or mat samples which have been allowed to rest at least 16 h after cure, are to be conditioned 6 h at 70 °C in an air oven by suspending specimens vertically without touching each other or the sides of the aging chamber. Heated air shall be thoroughly circulated in the oven by means of mechanical agitation. (Conditioning to be in accordance with ASTM D 573.) At the termination of the conditioning interval, the sections shall be removed from the oven, placed on a flat surface and allowed to rest 16 h minimum at room temperature before determining physical properties.

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4.2 Durometer Hardness

Hardness is to be measured with an instrument according to ASTM D 2240.

4.3 Tensile Strength and Elongation

Tensile strength and elongation shall be determined in accordance with ASTM D 412, Die A, except that the average calculation shall be made on not less than three dumbell specimens with the grain and three across the grain, rather than the method specified in ASTM D 412.

4.4 Tear Resistance

Test shall be made in accordance with ASTM D 624, Die C, except that the tear samples shall be based on the minimum thickness rather than the average of the section involved.

4.5 Bend Test

The bend test shall be performed on conditioned test specimens. The test specimen shall not crack when bent around a 1.60 mm (1/16 in) rod at 24 °C ± 3 °C (70 °F ± 5 °F).

4.6 Low Temperature Flexibility Test

A 25 x 300 mm sample strip cut from a mat shall be conditioned for 16 h in a cold box at –29 °C. Immediately following the conditioning period, the sample shall be flexed, while still in the -29 °C cold box around a 125 mm diameter mandrel, and shall not show any cracks or checks in the mat or coating material.

4.7 Tensile Set Test

The tensile set test shall be determined in accordance with ASTM D 412. Elongate the test specimen 100%, hold under strain for 10 min, release quickly without snap back, and allow to rest for 10 minutes. At the end of the 10 min rest period, measure the length and calculate the percent permanent tensile set.

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5. *Test Requirements*

Test requirements are shown in Table 1.

TABLE 1—TEST REQUIREMENTS

Type of Rubber	1	2	3	4	5
Properties After Preaging 6 h at 70°C and Resting 16 h min at 23 °C					
Durometer	70 ± 5	70 ± 5	70 ± 5	70 ± 5	65 ± 5
Tensile strength, mPa, min	2.8	3.5	5.2	6.9	10.4
Elongation, %, min	150	150	150	200	250
Tear resistance, kN/m, min	13.1	14	21	26.3	52.5
Bend test	No cracking	No cracking	No cracking	No cracking	No cracking
Low temperature flexibility test	No cracking	No cracking	No cracking	No cracking	No cracking
Tensile set test, %, max	15	15	15	15	15
Oven Aging 70 h at 70 °C (After Preaging 6 h at 70 °C) and Resting 16 h Min at 23 °C					
Durometer, points increase, max	10	10	10	10	5
Tensile strength, mPa, min	2.1	2.6	4.2	5.6	8.3
Elongation, %, min	115	115	115	150	200
Tear resistance, % loss, max	25	25	25	25	25
Bend test	No cracking	No cracking	No cracking	No cracking	No cracking

6. *Additional Requirements and Recommended Practices*

6.1 Water Spotting

Apply five drops of distilled water to the mat surface and allow to stand at room temperature for 24 h before being examined. There shall be no effect on the surface of the mat.

6.2 Staining (ASTM D 1148)

Samples shall not show objectionable staining or bleaching after 4 h exposure under S-1 or R-S sunlamp.

6.3 Cleanability

Mats must withstand cleaning with detergent and water without showing color transfer to the cloth. A 1% solution of detergent (Tide or equivalent) is used at room temperature with mild rubbing.

6.4 Odor

A mild, non-offensive odor is permitted.

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