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| SURFACE VEHICLE RECOMMENDED PRACTICE | J200 | JUN2015 |
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| Superseding J200 DEC2011 | | |
| Classification System for Rubber Materials | | |

RATIONALE

Added SAE J2979 for Compression Stress Relaxation as an available suffix in Table 4. Acronym for Compression Stress Relaxation added to table 3. Section 7.1.1 provides a method to use “F” and “SR” callouts that are unavailable in the suffix requirements tables 6AA thru 6KK, since round robins are not available to add these new or revised suffix requirements to J200. Section 8.4 is an example describing how to use “SR” suffix since CSR usually is run as multiple data points at different time intervals to develop a sealing force degradation curve.

FOREWORD

The original version of this SAE Recommended Practice was prepared jointly by the Society of Automotive Engineers and the American Society for Testing and Materials and bore the designation SAE J200/ANSI/ASTM D 2000. This document superseded and replaced SAE J14/ASTM D 735 and was intended to be used as a source of material quality “line call-out” specifications on procurement documents and drawings.

This Recommended Practice is now under the sole jurisdiction of the SAE Committee on Automotive Rubber Specifications and bears the designation SAE J200.

This document is based on basic physical properties of rubber materials obtained directly from standard compression molded test specimens. Test specimens may be fashioned from finished products or by alternate methods. However, test specimens so prepared may be affected by forming of the product or sample and/or by shaping them for testing. Therefore, test results prepared from finished products or by alternate methods may not duplicate values obtained from standard test specimens.

1. SCOPE

This classification system tabulates the properties of vulcanized rubber materials (natural rubber, reclaimed rubber, synthetic rubbers, alone or in combination) that are intended for, but not limited to, use in rubber products for automotive applications.

NOTE 1: The SAE Committee on Automotive Rubber Specifications (CARS) has the sole responsibility for SAE J200. CARS Works closely with and receives input from ASTM Subcommittee D11.30 on Classification of Rubber Compounds with the goal to keep SAE J200 and ASTM D 2000 technically equivalent. Candidate materials presented for development of new tables or for inclusion in Tables A1 or A2 of SAE J200 or Table X1.1 of ASTM D 2000 shall be initiated with the SAE CARS Committee. The procedure to be followed is detailed in Appendix C of SAE J200.

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NOTE 2: This document may serve many of the needs of other industries in much the same manner as SAE numbered steels. It must be remembered, however, that this system is subject to revision when required by automotive needs. It is recommended that the latest revision always be used. This document is based on the premise that all rubber materials intended for use in rubber products can be arranged into characteristic designations. These designations are determined by types, based on resistance to heat aging, and classes, based on resistance to swelling by oil. Basic levels are thus established which, together with values describing additional requirements, permit complete description of the quality of all rubber materials. In all cases where provisions of this document would conflict with those of the detailed specifications for a particular product, the latter shall take precedence.

NOTE 3: When the rubber product is to be used for purposes where the requirements are too specific to be completely prescribed by this classification system, it is necessary for the purchaser to consult the supplier in advance to establish the appropriate properties, test methods, and specification test limits.

1.1 Purpose

1.1.1 The purpose of this document is to provide guidance to the engineer in the selection of practical, commercially available rubber materials, and further to provide a method for specifying these materials by the use of a simple line call-out designation.

1.1.2 This document was developed to permit the addition of descriptive values for future rubber materials without complete reorganization of the classification system and to facilitate the incorporation of future new methods of test to keep pace with changing industry requirements.

2. REFERENCES

2.1 Applicable Documents

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 J2979 Test Method for Vulcanized Rubber and Thermoplastic Elastomer Determination of Compressive Stress Relaxation (CSR) Response

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 D 395 Test Methods for Rubber Property - Compression Test

ASTM D 412 Test Methods for Rubber Properties in Tension

ASTM D 429 Test Methods for Rubber Property - Adhesion to Rigid Substrates

ASTM D 430 Test Methods for Rubber Deterioration - Dynamic Fatigue

ASTM D 471 Test Methods for Rubber Property - Effect of Liquids

ASTM D 573 Test Methods for Rubber Deterioration in an Air Oven

ASTM D 575 Test Methods for Rubber Properties in Compression

ASTM D 624 Test Methods for Rubber Property - Tear Resistance

- ASTM D 865 Test Methods for Rubber Deterioration by Heating in Air (Test Tube Enclosure)
- ASTM D 925 Test Methods for Rubber Property - Staining of Surfaces (Contact, Migration, and Diffusion)
- ASTM D 945 Test Methods for Rubber Properties in Compression or Shear (Mechanical Oscillograph)
- ASTM D 1053 Test Method for Rubber Property - Stiffening at Low Temperature; Flexible Polymers and Coated Fabrics
- ASTM D 1149 Standard Test Method for Rubber Deterioration - Surface Ozone Cracking in a Chamber
- ASTM D 1171 Test Method for Rubber Deterioration - Surface Ozone Cracking Outdoors or Chamber (Triangular Specimens)
- ASTM D 1329 Test Method for Evaluating Rubber Property - Retraction at Low Temperatures (TR Test)
- ASTM D 1349 Practice for Rubber - Standard Temperatures for Testing
- ASTM D 1418 Practice for Rubber and Rubber Lattices - Nomenclature
- ASTM D 2137 Test Methods for Rubber Property - Brittleness Point of Flexible Polymers and Coated Fabrics
- ASTM D 2240 Test Method for Rubber Property - Durometer Hardness
- ASTM D 3183 Practice for Rubber - Preparation of Pieces for Test Purposes from Products

2.1.3 ISO Publications

Available from American National Standards Institute, 25 West 43rd Street, New York, NY 10036-8002, Tel: 212-642-4900, www.ansi.org.

ISO 162 Rubber and Latices - Nomenclature

ISO 17025 General Requirements for the Competence of Testing and Calibration Laboratories

3. TYPE AND CLASS

3.1 The prefix letter M shall be used to indicate that this classification system is based on SI units.

NOTE 4: Call-outs not prefixed by the letter M refer to an earlier classification system based on U.S. customary units. This was published in editions prior to 1979.

3.2 Rubber materials shall be designated on the basis of type (heat aging resistance) and class (oil swelling resistance). Type and class are each indicated by letter designations as shown in Tables 1 and 2 and illustrated in 8.1. Type is the first letter after the grade number and class is the second letter. See Appendix A for the types of polymers most often used to meet the specification.