

AEROSPACE MATERIAL SPECIFICATION

SAE AMS3260

REV. C

Issued	1973-05
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Superseding AMS3260B	

Ethylene-Propylene-Diene (EPDM) Rubber
General Purpose
45 - 55

RATIONALE

AMS3260C is a Five Year Review and update of this specification.

1. SCOPE

1.1 Form

This specification covers an ethylene propylene (EPDM) rubber in the form of sheet, strip, tubing, extrusions, and molded shapes.

1.2 Application

This products has been used typically for parts, such as door seals, low-pressure gaskets, dust covers, and shock absorption devices, requiring resistance to weathering, phosphate ester base hydraulic fluids, and polar solvents such as steam, water, and ketones, but usage is not limited to such applications. This material has fair resistance to all materials listed. Where better resistance to a particular fluid is required, use an AMS for the material compounded specifically for good resistance to that fluid.

1.3 Safety-Hazardous Materials

While the materials, methods, applications, and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards which may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

2. APPLICABLE DOCUMENTS

The issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been cancelled and no superseding document has been specified, the last published issue of that document shall apply.

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2.1 SAE Publications

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

AMS2279 Tolerances, Rubber Products
AMS2810 Identification and Packaging, Elastomeric Products

2.2 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 297 Standard Test Methods for Rubber Products - Chemical Analysis
ASTM D 395 Standard Test Methods for Rubber Property - Compression Set
ASTM D 412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers - Rubber Properties in Tension
ASTM D 573 Standard Test Methods for Rubber - Deterioration in an Air Oven
ASTM D 624 Standard Test Methods for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers
ASTM D 2137 Standard Test Methods for Rubber Property - Brittleness Point of Flexible Polymers and Coated Fabrics
ASTM D 2240 Standard Test Methods for Rubber Property - Durometer Hardness

3. TECHNICAL REQUIREMENTS

3.1 Material

Shall be a compound, based on an ethylene propylene terpolymer (EPDM) elastomer, suitably cured to produce a product meeting the requirements of 3.2.

3.2 Properties

The product shall conform to the following requirements in Table 1; tests shall be performed on the product supplied and in accordance with specified ASTM methods, insofar as practicable:

TABLE 1 - PROPERTIES

Paragraph	Property	Requirement	Test Method
3.2.1	As Received		
3.2.1.1	Hardness, Durometer "A" or equivalent	50 ± 5	ASTM D 2240
3.2.1.2	Tensile Strength, minimum	1800 psi (12.4 MPa)	ASTM D 412
3.2.1.3	Elongation, minimum	400%	ASTM D 412
3.2.1.4	Tear Resistance, minimum	100 pounds force per inch (17.5 kN/m) of width	ASTM D 624, Die C
3.2.1.5	Specific Gravity	Preproduction Value ± 0.02	ASTM D 297
3.2.2	Dry Heat Resistance		ASTM D 573 Temperature: 212 °F ± 2 (100 °C ± 1) Time: 70 hours ± 0.5
3.2.2.1	Hardness Change, Durometer "A" or equivalent	0 to +10	
3.2.2.2	Tensile Strength Change	0 to +25%	
3.2.2.3	Elongation Change	0 to -50%	

TABLE 1 – PROPERTIES (CONT.)

Paragraph	Property	Requirement	Test Method
3.2.3	Compression Set		ASTM D 395, Method B Temperature: 158 °F ± 2 (70 °C ± 1) Time: 22 hours ± 0.25
3.2.3.1	Percent of Original Deflection, maximum	30	
3.2.4	Low-Temperature Resistance		ASTM D 2137, Method A Temperature: -67 °F ± 2 (-55 °C ± 1)
3.2.4.1	Brittleness	Pass	

3.3 Quality

The product, as received by purchaser, shall be uniform in quality and condition, smooth, as free from foreign materials as commercially practicable, and free from imperfections detrimental to usage of the product.

3.4 Tolerances

Shall conform to all applicable requirements of AMS2279.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for Inspection

The vendor of the product shall supply all samples for vendor's tests and shall be responsible for the performance of all required tests. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the product conforms to specified requirements.

4.2 Classification of Tests

4.2.1 Acceptance Tests

Tests for the following requirements are acceptance tests and shall be performed on each lot.

TABLE 2 - ACCEPTANCE TESTS

Requirement	Paragraph
Hardness, as received	3.2.1.1
Tensile Strength, as received	3.2.1.2
Elongation, as received	3.2.1.3
Specific Gravity	3.2.1.5
Quality	3.3
Tolerances	3.4

4.2.2 Preproduction Tests

Tests for all technical requirements are preproduction tests and shall be performed prior to or on the initial shipment of the product to a purchaser, when a change in ingredients and/or processing requires reapproval as in 4.4.2, and when purchaser deems confirmatory testing to be required.

4.2.2.1 Manufacturer shall use ingredients, manufacturing procedures, processes, and methods of inspection on production product which are essentially the same as those used on the approved sample. If necessary to make any change in ingredients, in type of equipment for processing, or in manufacturing procedures, manufacturer shall submit for reapproval a statement of the proposed changes in ingredients and/or processing, and, when requested, sample product. Production product made by the revised procedure shall not be shipped prior to receipt of reapproval.

4.3 Sampling and Testing

Shall be as follows:

4.3.1 For Acceptance Tests

Sufficient product shall be taken at random from each lot to perform all required tests. The number of determinations for each requirement shall be as specified in the applicable test procedure or, if not specified therein, not less than three.

4.3.1.1 If specimens cannot be prepared from the product, ASTM test specimens prepared from the same batch and state of cure shall be used. When the product supplied is an extrusion of such shape that suitable test specimens cannot be cut from the product, a separate flat strip test sample from the same production lot shall be supplied upon request. This strip shall be prepared from tubing 1.000 inch $\pm$ 0.063 (25.40 mm $\pm$ 1.60) in OD by 0.075 inch $\pm$ 0.008 (1.90 mm $\pm$ 0.20) in wall thickness, mechanically slit and flattened into a strip while being extruded, and cured in the same manner as production product. When the product is a molded shape from which test specimens cannot be cut, a slab 6 inches (152 mm) square by 0.075 inch $\pm$ 0.008 (1.90 mm $\pm$ 0.20) molded from the same batch of compound shall be supplied upon request.

4.3.1.2 A lot shall be all product from the same batch of compound processed in one continuous run and presented for vendor's inspection at one time. An inspection lot shall not exceed 500 pounds (227 kg) and may be packaged in smaller quantities and delivered under the basic lot approval provided lot identification is maintained.

4.3.1.3 A batch shall be the quantity of compound run through a mill or mixer at one time.

4.3.1.4 Final inspection Sampling Plan; A statistical sampling plan acceptable to the purchaser may be used in lieu of sampling as in 4.3.1. Sample size for visual and dimensional requirements shall be as shown in Table 3; sample unit shall be one molded part and acceptance based on zero defects.

TABLE 3 – Visual and Dimensional Inspection

<u>Lot Size</u>		<u>Sample Size</u>
2 to	8	Entire Lot
9 to	90	8
91 to	150	12
151 to	280	19
281 to	500	21
501 to	1200	27
1201 to	3200	35
3201 to	10,000	38
10,001 to	35,000	46
35,001 to	150,000	56
150,001 and	and Over	65

4.3.2 For Preproduction Tests

As agreed upon by purchaser and manufacturer.