



AEROSPACE MATERIAL SPECIFICATION

AMS3204™

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Superseding AMS3204M

Rubber Synthetic
Low-Temperature Resistant
25 - 35

RATIONALE

This specification is being revised to clarify the responsibilities for product approval.

1. SCOPE

1.1 Form

This specification covers a synthetic rubber in the form of sheet, strip, tubing, extrusions, and molded shapes.

1.2 Application

These products have been typically used for parts, such as sleeves, fairings, grommets, and window channels, where resistance to low temperature is of prime importance, but usage is not limited to such applications. Each application should be considered individually.

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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Documents
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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 +1 724-776-4970 (outside USA), www.sae.org.

AMS2279 Tolerances Rubber Products

AMS2810 Identification and Packaging Elastomeric Products

AMS2817 Packaging and Identification Preformed Packings

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 D395 Standard Test Methods for Rubber Property - Compression Set

ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers - Tension

ASTM D471 Standard Test Methods for Rubber Property - Effect of Liquids

ASTM D573 Standard Test Methods for Rubber Property - Deterioration in an Air Oven

ASTM D624 Standard Test Methods for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers

ASTM D792 Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement

ASTM D1149 Standard Test Methods for Rubber Deterioration - Cracking in an Ozone Controlled Environment

ASTM D2137 Standard Test Methods for Rubber Property - Brittleness Point of Flexible Polymers and Coated Fabrics

ASTM D2240 Standard Test Methods for Rubber Property - Durometer Hardness

3. TECHNICAL REQUIREMENTS

3.1 Material

Shall be a compound, based on a synthetic elastomer, usually polychloroprene, 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 - Test requirements

Property		Requirement	Test Method
3.2.1	Hardness, Durometer "A"	30 ± 5	ASTM D2240
3.2.2	Tensile Strength, min.	1000 psi (6.9 MPa)	ASTM D412, Die B or C
3.2.3	Elongation, min.	350%	ASTM D412, Die B or C
3.2.4	Tensile Stress at 100% Elongation, max.	200 psi (1.38 MPa)	ASTM D412, Die B or C
3.2.5	Tear Resistance, min.	100 pounds force/inch (17.5 kN/m)	ASTM D624, Die B
3.2.6	Specific Gravity	Preproduction Value ±0.02	ASTM D792 (Hydrostatic Method)
3.2.7	Petroleum Hydraulic Oil Resistance		ASTM D471 IRM 903 oil (see 8.4) Temperature: 158 °F ± 2 °F (70 °C ± 1 °C) Time: 70 hours ± 0.5 hour
3.2.7.1	Hardness Change, Durometer "A"	-15 to +5	
3.2.7.2	Tensile Strength Change, max	-60%	
3.2.7.3	Elongation Change, max.	-35%	
3.2.7.4	Volume Change	0 to +75%	
3.2.7.5	Decomposition	None	
3.2.7.6	Surface Tackiness	None	
3.2.8	Dry Heat Resistance		ASTM D573 Temperature: 212 °F ± 2 °F (100 °C ± 1 °C) Time: 70 hours ± 0.5 hour
3.2.8.1	Hardness Change, Durometer "A"	0 to +15	
3.2.8.2	Tensile Strength Change, max.	-35%	
3.2.8.3	Elongation Change, max.	-35%	
3.2.9	Compression Set		ASTM D395 Method B Time: 70 hours ± 0.5 hour
	Percent of Original Deflection, max.	75	
3.2.10	Low-Temperature Resistance		
3.2.10.1	Brittleness	Pass	ASTM D2137 Method C Temperature: -40 °F ± 2 °F (-40 °C ± 1 °C)
3.2.11	Weathering		ASTM D1149 Temperature: 104 °F ± 2 °F (40 °C ± 1 °C) Time: 168 hours ± 1 hour
	Cracking or Checking at 20% Extension	None	