ENGINEERING MATERIAL SPECIFICATION

Material Name	File Control No.	Specification Number
GASKET, ARAMIDE FIBERS AND NBR	SMT5008GA8550	WSK-M8G172-A2

1. SCOPE

The material defined by this specification is a gasket material comprised of aramide fibers bonded with nitrile butadiene rubber (NBR).

2. APPLICATION

This specification was released originally for material used for engine gaskets.

3. REQUIREMENTS

Note: All tests shall be conducted in accordance with ASTM F 104 Type 1 material unless otherwise specified. The requirements of this specification are valid for gasket material of 0.2 to 1.6 mm thickness Test specimens are to be selected from finished gaskets when practicable.

Prior to testing the materials shall be conditioned in an oven at 100 +/- 2 C for 1 hour and allowed to cool to 23 +/- 2 C in a desiccator containing anhydrous calcium chloride.

3.1 STATISTICAL PROCESS

Suppliers must conform to the requirements of Ford Quality System Standard Q-101. A mutually acceptable Control Plan as described therein is required for materials/source approval. Appropriate statistical tools must be used to analyse process/product data so that variation in the final product is continuously reduced.

3.2 INFRARED SPECTROPHOTOMETRY AND/OR THERMAL ANALYSIS

Ford Motor Company, at its option, may conduct infrared and/or thermal analysis of material/parts supplied to this specification. The IR spectra and thermogram established for initial approval shall constitute the reference standard and shall be kept on file at the designated material laboratory. All samples shall produce IR spectra and thermogram that correspond to the reference standard when tested under the same conditions.

Date	Release No.	Release/Revision
1988 11 30	SM/EQ9496 TP	Released M. Siewert

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			Thickness 0.2 - 0.5 mm	Thickness 0.6 - 1.6 mm
3.3	ORIGINAL PROPERTIES			
	3.3.1	Density (ASTM D 297)	1.55 - 1.70 g/cm3	1.55 - 1.65 g/cm3
	3.3.2	Ignition Loss (ASTM F 495)	32 - 38 %	32 to 38 %
	3.3.3	Tensile Strength, min (ASTM F 152 Method A)	12 MPa	16 MPa
	3.3.4	Compressibility (ASTM F 36 Procedure A)	8 - 15 %	8 - 14 %
	3.3.5	Recovery, min (ASTM F 36 Procedure A)	45 %	50 %
3.4	SEALABILITY, max (ASTM F 37, Method A, ASTM Fuel A, 6.9 MPa flange load, 1.7 MPa internal pressure)		1.5 mL/h	1.5 mL/h
3.5	CREEP RELAXATION, max (ASTM F 38, Method B, 22 h at 150 +/- 2 C)		40 %	40 %
3.6	ADHESION AND CORROSION (FLTM BV 123-1)			
	3.6.1	After Heat Aging at 150 +/- 2 C		
		Adhesion, max	Rating 2	Rating 2
		Corrosion, max	Rating 2	Rating 2
	3.6.2	After Aging in Humidity Cabinet		
		Adhesion, max	Rating 2	Rating 2
		Corrosion, max	Rating 2	Rating 2
3.7	HEAT AGING (ASTM D 573, 22 h at 150 +/- 2 C)			
	3.7.1	Weight change	- 2 to + 2 %	- 2 to + 2 %
	3.7.2	Compressibility	9 - 14 %	7 - 12 %
	3.7.3	Recovery, min	45 %	55 %

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