



ENGINEERING MATERIAL SPECIFICATION

Material Name

Specification Number

GASKET, ARAMIDE FIBRE SHEETS, REINFORCED

ESK-M8G177-A3

1. SCOPE

The materials defined by this specification are synthetic rubber bonded aramide fibre sheets reinforced with a steel sheet core.

2. APPLICATION

The specification was released originally for material used for cylinder head gaskets.

3. REQUIREMENTS

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 material/source approval. Appropriate statistical tools must be used to analyze 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 thermograms 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 thermograms that correspond to the reference standard when tested under the same conditions.

3.3 CONDITIONING AND TEST CONDITIONS

All test values indicated herein are based on material conditioned according to ASTM F 104, material type 1, prior to testing and tested under the same conditions unless otherwise specified.

3.4 TEST SPECIMENS (Test Sheets)

The requirements of this specification are valid for gasket material of 0.9 - 1.1 mm thickness.

Date	Release No.	Released
1994 12 08		Revised and Retyped
1986 04 25	SM/EQ5604TP	Released

WP 3948-a

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- 3.4.1 Material of Core
St 2 DIN 1624, thickness 0.20,
DIN 1544 Type V, Zinc plated
according to specification S-M1P5-A
- 3.4.2 Compressibility 4 - 10 %
(ASTM F 36, Procedure A)
- 3.4.3 Recovery, min 40 %
(ASTM F 36, Procedure A)
- 3.4.4 Immersion in ASTM Fuel C
(ASTM F 146, tests according to type 1
material, 22 h at 23 +/- 2 C)
- 3.4.4.1 Compressibility 6 - 13 %
- 3.4.4.2 Recovery, min 50 %
- 3.4.4.3 Thickness Change 0 to + 8 %
- 3.4.4.4 After immersion the fibre sheets shall be firm and
must not separate from the core.
- 3.4.5 Immersion in ASTM Oil No. 3
(ASTM F 146, tests according to type 1
material, 22 h at 150 +/- 2 C)
- 3.4.5.1 Compressibility 4 - 10 %
- 3.4.5.2 Recovery, min 40 %
- 3.4.5.3 Thickness Change 0 to + 6 %
- 3.4.5.4 After immersion the fibre sheets shall be firm and
must not separate from the core.
- 3.4.6 Immersion in long life coolant concentrate according to
specification SS-M97B9103-A and distilled water (50:50) by
using a suitable distillation flask and a reflux condenser
for 70 h at boiling temperature. After immersion store
specimens for 30 minutes at 23 +/- 2 C and 50 +/- 5 %
relative humidity before testing. Tests according to type 1
material.
- 3.4.6.1 Compressibility 5 - 11 %
- 3.4.6.2 Recovery, min 50 %
- 3.4.6.3 Thickness Change 0 to + 8 %
- 3.4.6.4 After immersion the fibre sheets shall be firm and
must not separate from the core.