ENGINEERING MATERIAL SPECIFICATION

Material Name	Specification Number
HEAT SHIELD, FIBER MAT, ALUMINUM PLATED STEEL SHEETS	WSK-M8G241-A

1. SCOPE

The material defined by this specification is a non-woven fiber mat consisting of aramide and mineral fibers, silica containing fillers bonded with silicone rubber. This mat is covered by two aluminum plated steel sheets. These three components will be deep drawn and crimped on outside area.

2. APPLICATION

This specification was released originally for heat shields.

Internal Component Temperature, max	320 C
Surface Temperature, max	400 C

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 OF FIBER MAT

All tests shall be conducted in accordance with ASTM F 104 type 7 material unless otherwise specified. The requirements of this specification are valid for mat material of 0.5 to 2.0 mm thickness.

Date	Release No.	Release/Revision
1993-09-01	EP00E10258825000	Revised K. Gerhards
1992-01-06	EP00E10176259000	Released K. Gerhards

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Prior to testing, the material shall be conditioned for at least 4 h at 23 +/- 2 C in a closed chamber containing anhydrous calcium chloride as a dessicant. The air in the chamber shall be circulated by gentle mechanical agitation. Specimens shall then be transferred immediately to a controlled humidity room and conditioned for at least 20 h at 23 +/- 2 C and 50 +/- 5 % relative humidity.

3.4 ORIGINAL PROPERTIES OF FIBER MAT

3.4.1	Ash Content (ASTM F 495, 600 C)	14 %
3.4.2	Tensile Strength, min (ASTM F 152, Method A)	1 MPa
3.4.3	Compressibility (ASTM F 36, Procedure K)	35 - 55 %
3.4.4	Recovery, min (ASTM F 36, Procedure K)	20 %

3.5 HEAT AGING OF FIBER MAT
(ISO 188/ASTM D 573, 150 +/- 50 air changes/h, 22 h at 250 +/- 2 C)

3.5.1	Tensile Strength Change, max (ASTM F 152, Method A)	- 5 %
3.5.2	Compressibility (ASTM F 36, Procedure K)	25 - 50
3.5.3	Recovery, min (ASTM F 36, Procedure K)	15 %
3.5.4	Weight Change, max	- 5 %

3.6 ALUMINUM PLATED STEEL SHEETS

Cold rolled low carbon sheet steel (WSB-M1A250-B1) aluminum coated on both sides

3.7 ADDITIONAL REQUIREMENTS

Specific requirements for material and/or manufactured parts shall be specified on the Engineering drawing, Engineering parts specification and/or performance specifications. All critical areas with respect to these properties shall be clearly designated on the engineering drawing.

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