



REFLECTIVE COVERING, FIBERGLASS WITH ALUMINUM FOIL THERMAL INSULATOR

WSS-M99G172-A

1. SCOPE

This standard defines the material requirements of a fiberglass textile substrate with aluminum foil laminated to the outer surface, and an acrylic pressure sensitive adhesive on the inner surface of the material.

2. APPLICATION

This specification was released originally for material used to provide thermal protection for wire harnesses.

3. REQUIREMENTS

Material specification requirements are to be used for initial qualification of materials.

3.1 APPROVED SOURCES

This specification requires the use of approved sources. Only the sources identified on the Ford Approved Source List (ASL) can be used when this specification is listed on the drawing, CAD file, or other documents. The list of approved sources is located within Ford at www.mats.ford.com or available externally through a Ford Materials Engineer.

3.2 INFRARED SPECTROPHOTOMETRY AND/OR THERMAL ANALYSIS

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 in a controlled atmosphere of 23 +/- 2 °C and 50 +/- 5 % relative humidity for not less than 24 h prior to testing and tested under the same conditions unless otherwise specified.

3.4 TEAR STRENGTH (ASTM D1117)

Warp	111 N min
Fill	111 N min

Date	Action	Revisions	Rev. 02
2016 09 22	Revised	Updated para 3.7 and 3.8	A. Reaume, NA
2000 09 26	Revised	Updated	A. Cockman, NA
1997 12 01	Activated		L. R. Cullen, NA

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3.5	MULLEN BURST (ASTM D774)	2 MPa min
3.6	TENSILE STRENGTH (ASTM D5035)	
	Warp	35 N/m min
	Fill	22 N/m min
3.7	MATERIAL WEIGHT (ASTM D3776)	250 g/m ² min

3.8	MATERIAL THICKNESS (ASTM D1777)	0.2 mm min
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3.9 FLUID RESISTANCE

Test Procedure: A 2 x 5 inch sample is applied to a stainless steel plate with the same dimensions. A second sample, 1.5 x 4.5 inches, is applied over the first sample. The entire test piece is immersed into one of the automotive fluids until the sample is soaked. After 1 h, 24 h, 48 h, and 72 h, the sample is visually examined for flagging, peeling or any other sign of degradation.

The material passes this test when exposed to any one of the following fluids: gasoline, diesel fuel, brake fluid, windshield washer fluid, 10W-40 motor oil, automatic transmission fluid, engine cleaner, 50 % antifreeze, or battery acid.

3.10 FOGGING

(SAE J1756, 3 h at 100 °C heating, 21 °C cooling plate, post test conditioning 1 h and 16 h)

Fog Number	80 min
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Formation of clear film, droplets or crystals is cause for rejection.

3.11	FLAMMABILITY (ISO 3795/SAE J369)	100 mm/minute max
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3.12 ADDITIONAL REQUIREMENTS

Additional requirements for material and/or manufactured parts may be specified on the Engineering drawing, Engineering parts specification, performance specification, System Design Specification (SDS) and/or Component Design Specification (CDS).