



NVH RUBBER, HOT APPLIED, ELECTROCOAT OVEN HEAT CURING

WSS-M4G449-A1

1. SCOPE

The body shop NVH materials defined by these specifications are extruded, hot applied and cured in the electrocoat oven.

2. APPLICATION

These materials were originally released for damping of closure outer panels. The materials are hot (60°C) applied to oiled sheet metal body parts.

The materials are applied on oiled surfaces with acceptable oil film weights (European applications limit the oil / pre-lubricant film weight to max 3 g/m², see para. 3.19)

Note: Care must be taken to ensure that the local oil film weight in the area of the NVH application does not exceed the critical limit. Monitoring of the film thickness, adequate storage of the part and / or cleaning of the surface prior to NVH application is necessary to avoid critical film thickness values, which would cause malfunction of the NVH material.

3. REQUIREMENTS

3.1 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS

Material suppliers and part producers must conform to the Company's Standard Requirements for Production Materials (WSS-M99P1111-A)

Part producers using this material in their products, must use Ford approved materials and must conform to a process control plan which has been approved by STA and/or the relevant Materials Activity.

3.2 SOLIDS (FLTM BV 150-10)	99.0% min
3.3 ASH CONTENT (FLTM BV 150-10)	+/- 10% from Initial sample
3.4 FLASHPOINT (ASTM D 93, Method A)	100 °C min

Note: If testing at higher temperatures is not feasible because of gelling of test material, the supplier must certify in writing that each separate volatile ingredient has a flash point greater than 100 °C.

Date	Action	Revisions	Rev. 0
2012 02 15	Activated		

**3.5 VISCOSITY AT 60 °C**

(FLTM BV 103-01, 0.392MN/m² line pressure, nozzle diameter 2 mm)

Suppliers must submit flow characterization data to Ford Motor Company for flow modeling and process window determination. For a specified temperature range, the requested properties include, but are not limited to, viscosity, yield stress, apparent activation energy for viscosity and apparent activation energy for yield stress. This data constitutes the referenced standard and shall be kept on file at the designated material laboratory.

3.5.1 As Received

15 - 25 seconds

3.5.2 After Aging
(14 days at 35 +/- 2 °C)

20 - 30 seconds

Note: Final approval of a specific viscosity of material for production shipments shall be made by the affected Manufacturing Division. In all cases, however, the viscosity shall be within the limits specified above and the material shall meet all requirements of this specification.

3.6 TEST PANEL PREPARATION

Prepare a test panel (300 x 100 x 0.8 mm) according to FLTM BZ 150-11, see para 3.19. Apply a ribbon of NVH rubber material (250 x 30 x 5 mm) to the panel at 60°C. Condition for 2 h at 23 +/- 2°C. Cure specimens at the min and max curing cycle according to FLTM BV 150-05, for each applicable region.

3.7 PANEL SINK MARKS

No visible sink marks on black painted outer closure panel, where the material is applied on the inner side. The test panel is compared directly after aging to an unaged panel without material. Curing condition acc. 3.6

3.7.1 Cold Aging
(7 days at -40 +/- 1 °C)

The painted panel (500 x 500 x 0.8 mm) is applied with the NVH rubber (200 x 300 x 2.5 mm), approximately 150 mm away from the edges.

3.7.2 Heat Aging
(14 days at 90 +/- 2 °C)

The painted panel (420 x 440 x 0.8 mm) is applied with the NVH rubber (230 x 170 x 2.5 mm), approximately 110 mm away from the edges.

3.8 ADHESION

The material at all ranges of coating thickness must not be peeled-off in a coherent film.

Test Method

1. Prepare test panels per para 3.6. and then apply the NVH rubber to cover 300 x 100 mm so after the min and max curing cycle, according to FLTM BV 150-05 for each region, a dry coating thickness of 0.3 mm beginning at one edge of the test panel and increasing to 3 mm at the other edge is obtained.