



SEALER, HEAT EXPANDING, ANTI-FLUTTER

WSS-M4G183-D

1. SCOPE

The materials defined by this specification are pre-formed, low-expansion, anti-flutter materials.

2. APPLICATION

This specification was released originally to isolate sheet metal components, such as roof bow to roof bow. These materials are designed to be applied over oily metal substrates and expand and cure in the e-coat oven. The material is normally held in position with mechanical fasteners.

Anti-flutter materials are required to perform in a number of applications and closure designs. Each design and/or application has unique requirements. Compliance with this material specification does not guarantee the anti-flutter will function for all potential applications on a vehicle. Selection of the appropriate material should therefore be based on jury evaluations or other NVH test procedures as well as the required functional trial.

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).

3.2 MANUFACTURING REQUIREMENTS

- 3.2.1 Electrocoat Compatibility
(FLTM BV 119-01, use current production paints as identified by the Materials Engineering Activity)

Shall not contaminate electrocoat primer bath or cause electrocoat film irregularities

- 3.2.2 Wash Resistance
(FLTM BV 116-01, Method B, material thickness as defined on the engineering drawing)

No measurable dissolution or evidence of material wash-off

3.3 ENGINEERING REQUIREMENTS

- 3.3.1 Specific Gravity (uncured material), kg/L +/- 0.1
(ASTM D 297, water displacement method;
ref. para 5.2)

The specific gravity tolerance for any one supplier shall be +/- 0.1 based on the recorded specific gravity of their originally approved production sample.

Date	Action	Revisions
2003 08 29	Activated	





ENGINEERING MATERIAL SPECIFICATION

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- 3.3.2 Volatile Organic Compounds (VOC) Content, (EPA Method 24, Procedure B) 0.05 kg/L, max
- 3.3.3 Water Absorption, max. (FLTM BV 117-01, Method A, 8 h soak time use samples prepared in para 5.2 at minimum bake only) 5%
- 3.3.4 Cure Requirements Report
(Define the process cure window for adhesive cure, report minimum and maximum time at temperature requirements to achieve performance.)

Performance shall include, but is not limited to, the following:

Volume expansion, para 3.3.7
Peel Adhesion, para 3.3.8
- 3.3.5 Dimensions as specified on engineering drawings
- 3.3.6 Fogging (SAE J1756, 3 h at 100 °C heating, 21 °C cooling plate, post test conditioning 1 h and 16 h)

Fog Number, min 70

Formation of clear film, droplets or crystals is cause for rejection.
- 3.3.7 Volume Expansion (FLTM BV 108-02, except use die cut material W x Y x Z mm in place of semi-circular bead. Bake schedules para 5.2)
- 3.3.7.1 Minimum bake 200 - 450%
- 3.3.7.2 Maximum bake 200 - 450%
- 3.3.8 Peel Adhesion (ASTM D 1876, substrates per para 5.3, material cure per para 5.2, 76.2 mm overlap, 2.0 +/- 0.4 mm adhesive bondline, condition for 30 minutes at specified 23 +/- 2 °C prior to test.) All materials shall show 100% cohesive failure; report failure mode. 254 mm/min. pull rate.

Report load between 25 and 75 mm cross-head travel.
- Normal, unexposed 0.5 N/ mm
- Salt Spray 0.5 N/mm
(ASTM B 117, 500 h)
- There shall be no corrosion beneath original material contact area