



SEALER, PREFORMED PART, PAINT SHOP CURING PERFORMANCE REQUIREMENTS

WSS-M18P11-B3

1. SCOPE

This specification defines the performance requirements for a die cut or extruded sealer that expands upon exposure to heat and can be used in applications for sealing on electrocoat surfaces and cured through paint process ovens.

2. APPLICATION

This specification was released originally for material used in the paint shop area for sealing openings in sheet metal surfaces. The material can be supplied with or without an aggressive pressure sensitive adhesive which promotes adhesion to electrocoat primed substrates. The material may expand during the primer or enamel bake schedules noted in the specification. Materials meeting this performance specification are identified on the corporate Approved Source List (ASL). Compliance with this performance specification does not guarantee the sealer will function for all potential applications on a vehicle.

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 SYSTEM COMPATIBILITY

Initial material approval was based on a specific material system which included the substrate, e-coat system, and adhesive/polymer. The originally approved material system was oven cured using specific production process parameters. The choice of substrates, e-coat system, assembly plant processing conditions and specific design application may affect adhesive /polymer / engineered part performance. Manufacturing conditions vary regionally such as paint cure conditions and the applicable regional test protocol should be run for material approval. If any of these parameters are changed, the material performance must be validated using the new parameters.

3.3 DIMENSIONS

Cross sections/dimensions for tape shall be specified on the engineering drawing.

3.4 MATERIAL PROPERTIES

3.4.1 Density +/- 0.1 kg/m³
(ISO 845/ASTM D 3574, Test A, interior density)

The density variation for any one supplier shall be +/- 0.1 kg/m³, based on the recorded density of their original approved production sample.

Date	Action	Revisions	Rev. 0
2012 04 04	Activated	Replaces WSS-M18P11-A2	

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- 3.4.2 Water Absorption
(FLTM BV 117-01, Method A,
8 h soak time, cure material per
paragraph 4.2)

0- 300% Volume expansion	4 % max
300 – 800% Volume Expansion	5 % max
800% or greater Volume Expansion	8 % max

- 3.4.3 Volume Expansion
(FLTM BV 108-02, material cure per para 4.2)

Report

The volume change variation for any one supplier shall be +/- 10%, based on the recorded volume change of their original approved production sample.

- 3.4.4 Volatile Organic Compounds (VOC) Content
(EPA Method 24, Procedure B)

+/- 0.05 kg/L

The VOC Content variation for any one supplier shall be +/- 10%, based on the recorded VOC Content of their original approved production sample.

- 3.4.5 Cure Requirements
(Define the process cure window for material cure. Report minimum
and maximum time at temperature requirements to define performance
boundaries)

Report

Critical performance characteristics shall include, but are not limited to, the following:

- Volume Expansion, para 3.4.3
- Adhesion para 3.5.2

3.5 MANUFACTURING PROPERTIES

- 3.5.1 Differential Scanning Calorimetry
(20 +/- 1 mg sample size, 5 °C/min
heating rate, 25 - 250 °C temperature
range, submit Heat Flow vs. Temperature curve)

Report onset of
reaction

- 3.5.2 Adhesion Characteristics

3.5.2.1 Cured:

Test Method: Apply two 200 mm length ribbons of material to each of two 0.89 x 100x 300 mm steel per para 4.1 and condition panels at 23 +/-2 °C for 1 h. Bake on panel at min and max bake per para 4.2. Position panels in a horizontal attitude during bake. After bake, condition panels at 23 +/-2 °C for 4 h min. Evaluate adhesion by inserting the top of a sharp spatula under the end of the material strip. Grasp the tab of sealer and attempt to peel 180°. The material shall not be removable in a continuous coherent film. Observe for any indication that the material fails to adhere to the substrate or is brittle.