



ENGINEERING STANDARDS

Material Specification

9984182

Sealer – Preformed, Extrudable, Rigid and Flowable

1 Scope

This specification details the requirements of a sealer material that is extrudable and semi-rigid.

1.1 Material Description.

The sealer is intended to melt, then flow and cure, during the Paint Shop Sealer/ Primer Oven Bake. The material is intended to seal body joints against water, dust and air intrusion.

The material must be a smooth homogeneous mixture free of air, lumps, unmixed particles and foreign materials. The material is intended to be used in difficult-to-reach or difficult-to-seal areas with pumpable materials and equipment, where a semi-rigid sealer part can be installed.

Material Identification. Material identification can be found in Table 1. The material must adhere to approved Electrocoated (E-Coat) metal substrates, per GMW3008.

Table 1: Material Identification

Sealer Type	Description
A	High flow – low or high bake
B	Low flow – low or high bake
C	Low flow - low bake for Sheet Molding Compound (SMC)

1.2 Symbols. Not applicable.

1.3 Applicability. Applicable to sealers intended to melt, then flow and cure, during the Paint Shop Sealer/ Primer Oven Bake.

2 References

Note: Only the latest approved standards are applicable unless otherwise specified.

2.1 External Standards/Specifications.

ASTM D5 ASTM D792

2.2 GM Standards/Specifications.

GM4389M	GMW3059	GMW3232	GMW15735
GMW3008	GMW3205	GMW14124	
GMW3016	GMW3221	GMW14729	

2.3 Additional References.

TMC003 Material Safety Data Sheet guidance documents (available at www.gmsupplypower.com).

3 Requirements

Specific material requirements and appropriate test methods are listed throughout Section 3.

3.1 Physical Requirements.

3.1.1 Flow. When baked horizontally on an Electrocoated (E-Coat) panel per the appropriate bake schedule in Table 3, the material must have flow characteristics as shown in Table 2.

Table 2: Material Flow Characteristics

Type A: High Flow		Type B or C: Low Flow	
Material Width (mm)	Flow Range (mm)	Material Width (mm)	Flow Range (mm)
4.8	10 to 20	4.8	5 to 10
6.3	17 to 35	6.3	9 to 17
9.5	40 to 80	9.5	20 to 40
12.7	70 to 140	12.7	35 to 70

3.1.2 Volatile Organic Content (GMW3016). Test and report per the Paint Material Review (PMRV) process.

3.1.3 Odor (GMW3205, Section 4 Procedure). The material shall have a neutral odor before and after curing. In addition, the ED50 value of its toxicity may be required at the time of approval if requested.

3.1.4 Tack The material shall meet the following tack test prior to curing. Press a piece of material 10 mm x 25 mm x 25 mm onto an oily metal panel and hold for 2 s. When the finger is lifted off, there shall be no material transfer to the skin nor lifting of the sealer from the panel.

3.1.5 Density (ASTM D792). A value of 1.2 kg/m³ at 23 °C is typical, however, an individual range for each material, will be set at the time of approval to this specification.

3.1.6 Solids Content. The solids mass must be ≥ 95% of the material mass.

3.1.7 Hardness (ASTM D5 – For Information Only). The hardness measurement of the (uncured) material at 25 °C using a needle penetrometer with a 50 g load and a 5 s duration shall be 5 mm to 15 mm.

3.1.8 Flame Resistance. The material must resist 50 passes with an open flame and be self-extinguishing or meet the requirements of GMW3232.

3.1.9 Smoking Resistance. The sealer must not smoke at ≤ 177 °C with slight smoke allowed > 177 °C to ≤ 191 °C.

3.2 Performance Requirements.

3.2.1 Test Panel Preparation.

3.2.1.1 Material Specimen Preparation. Condition materials per GMW3221, prior to exposing to test environments in Table 4.

3.2.1.2 The material test specimen is to be applied to E-Coated steel panels and baked per Table 3.

Table 3: Test Panel Bake Conditions

Sealer Type	Bake Value ^{Note 1}	Low Bake: Seal/Prime Materials	High Bake: Seal/Prime Materials
A and B	T Seal/Prime	25 minutes @ 130 °C (265 °F) and cool to room temperature	20 minutes @ 163 °C (325 °F) and cool to room temperature
	T Topcoat	25 minutes @ 130 °C (265 °F) and cool to room temperature	25 minutes @ 130 °C (265 °F)
C	T Seal/Prime	25 minutes @ 130 °C (265 °F) and cool to room temperature	Not applicable
	T Topcoat	25 minutes @ 130 °C (265 °F)	Not applicable

Note 1: Unique bake schedules will apply to integrated paint processes. If material compatibility is required for these, contact the Materials/Manufacturing Engineer Vehicle Systems (MEVS) Paint and Seal Engineer(s) for direction.