



## Sealer – Preformed, Floor Pan Patch

### 1 Scope

This specification details the performance requirements of a preformed sealer (compound), which is applied to the Body Floor Pan. This material adheres to the Electrodeposition Primer (ELPO) paint layer on the Body to prevent water, dust or air intrusion.

**1.1 Material Description.** The material must be a smooth and homogenous mixture; free of air, lumps and foreign particles. Material must show no sign of trapped air from either an external observation or a sectional view before and after curing and must not be tacky. The material must not accelerate the rusting of the substrate over which it is applied. See Table 1.

Table 1: Material Types

| Type <sup>Note</sup> | Description                 |
|----------------------|-----------------------------|
| A                    | High/Low Bake, Non-magnetic |
| F                    | High/Low Bake, Magnetic     |

**Note:** Material Types removed from this specification include; **Type B** (Gas Resistant), no MATSPC entries; reference 9984194 Types A and B for more information; **Type C** (High Heat Resistant) due to no identified Test Method, no MATSPC entries; **Types D and E**, reference GMW15174 and GMW15410 for more information.

**1.2 Symbols.** Not applicable.

**1.3 Applicability.** All vehicles. These sealers are manually installed in the Paint Shop, on the Sealer Line.

**1.4 Remarks.**

**1.4.1 Technology Approval Documentation.** At the conclusion of testing to this specification, the Supplier must provide a document package with the following:

**1.4.1.1 Product Data.** Documentation of all attributes and test results are required for the material, per Section 3 of this specification. All test panels should be identified and photographed for full documentation.

**1.4.1.2 Bake Charts.** A Bake window that identifies the Bake Conditions where the sealer meets and no longer meets all requirements of the specification, must be provided. Key Product Characteristics to include, at minimum; Initial Adhesion and Adhesion after Cycle Test. The Bake Chart is to reflect; Time at Metal Temperature on x-axis (minimum range: 0 minutes to 90 minutes) and Temperature on y-axis (minimum range: 130 °C to 200 °C). Additional direction to be provided by the approving material engineer.

**1.4.2** Additional information may be requested by the responsible GM Engineer, including Manufacturing site and trend charting of these attributes for (x) number of the initial production material batches.

### 2 References

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

#### 2.1 External Standards/Specifications.

EPA Method 24

ISO 1183

## 2.2 GM Standards/Specifications.

|         |          |          |          |
|---------|----------|----------|----------|
| GMW3005 | GMW3059  | GMW14706 | GMW16152 |
| GMW3008 | GMW3221  | GMW14729 | GMW16639 |
| GMW3016 | GMW3232  | GMW15635 | GMW17056 |
| GMW3019 | GMW14124 | GMW15735 |          |

## 3 Requirements

### 3.1 Physical Properties.

**3.1.1 Specific Gravity (ISO 1183, Part 1, Method B).** The typical range for the material in the uncured state is 1.00 to 1.70. A specific gravity range will be set at the time of approval and become a requirement for the material.

**3.1.2 Odor (GMW16639).** The material shall have a neutral odor that is not unpleasant in the uncured or cured condition and the material must not adversely affect those personnel handling it. In addition, the supplier must submit a complete GM Material Safety Data Sheet (MSDS) and must have full approval of the appropriate medical department before production use.

**3.1.3 Flame Resistance (GMW3232).** After Target Bake per Table 2, the cured material shall have a maximum burn rate of 100 mm/minute.

**Table 2: Sealer Bake Conditions on Substrate Layers**

|                                                                                                     | High Bake, Types A and F                                                                                                                       | Low Bake, Types A and F                                                                                                                        |
|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Minimum</b>                                                                                      | 15 minutes at 158 °C                                                                                                                           | 15 minutes at 125 °C                                                                                                                           |
| <b>Target</b>                                                                                       | 20 minutes at 165 °C                                                                                                                           | 20 minutes at 130 °C                                                                                                                           |
| <b>Maximum</b>                                                                                      | 60 minutes at 190 °C<br>(Powder Primer)                                                                                                        | 90 minutes at 158 °C                                                                                                                           |
| <b>Full Process</b><br>(Minimum Sealer Bake plus three<br>(3) times through Target Topcoat<br>Bake) | 15 minutes at 158 °C plus<br>20 minutes at 140 °C plus<br>20 minutes at 140 °C plus<br>20 minutes at 140 °C<br>(Cool to ambient between bakes) | 15 minutes at 125 °C plus<br>20 minutes at 140 °C plus<br>20 minutes at 140 °C plus<br>20 minutes at 140 °C<br>(Cool to ambient between bakes) |

**3.1.4 Plant Emissions Volatile Organic Compounds (VOC) (GMW3016 (and Environmental Protection Agency (EPA) Test Method 24 for U.S.)).** Test and report per the Productive Material Review (PMRV) process.

**3.1.4.1 Solids Content.** The solids content must be > 97% of the material mass.

**3.1.4.2 Aldehyde and Ketone Emissions from Interior Materials (GMW15635).** Test sample shall be baked at Target Bake per Table 2 and tested within 7 days of Baking and reported per the PMRV process.

**3.1.5 Smoke Resistance.** The sealer must not smoke up to 177 °C and must not be classified as any more than slight, up to or at 191 °C.

**3.1.6 Bridging (GMW17056).** The material, when baked as described in Table 2 (Full Process Condition), must bridge and seal, up to a 5 mm offset. Use a sample size of 30 mm × 210 mm × 2 mm and test panel size of 30 mm × 210 mm × 0.88 mm. Report the individual and average expansion, after each of the bake conditions. This average will become the requirement for this specific material.

**3.1.7 Shrinkage.** Baked material(s) must have no more than 5% shrinkage after High and Low Bake Sealer Maximums (see Table 2).

**3.1.8** There shall be no telegraphing of material or staining of carpet after installation of such in General Assembly (GA).

### 3.2 Performance Requirements.