



## **Flow of Preformed Paint Shop Sealers**

### **1 Introduction**

**Note:** Nothing in this standard supercedes applicable laws and regulations.

**Note:** In the event of conflict between the English and domestic language, the English language shall take precedence.

**1.1 Purpose.** This test procedure is intended to measure the flow of paint shop preformed sealers.

**1.2 Applicability.**

**1.2.1** Paint has been intentionally omitted from this test procedure, although it can be expected to have a significant effect on the flow properties of a paintable sealer.

**1.2.2** The gauge repeatability and reproducibility (R&R) of this test procedure is poor. This test procedure is most appropriately used for making general flow comparisons between sealer materials, sealer parameters (e.g., thickness), or sealer processing conditions (e.g., bake) tested side by side.

**1.3 Remarks.** Not applicable.

### **2 References**

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

**2.1 External Standards/Specifications.**

None

**2.2 GM Standards/Specifications.**

None

**2.3 Additional References.**

None

### **3 Resources**

**3.1 Facilities.**

**3.1.1 Calibration.** The test facilities and equipment shall be in good working order and shall have a valid calibration label.

**3.1.2 Alternatives.** Alternative test facilities and equipment may also be used. However, all measuring variables as specified in this standard shall be determined correctly with respect to their physical definition.

**3.2 Equipment.**

**3.2.1 Straight Edge.** Length: 150 mm minimum.

**3.2.2 Scribe Tool or Fine Point Marker.**

**3.2.3 Cutting Die.** Sharp cutting die capable of producing consistent circular test samples with 25 mm diameter unless otherwise specified.

**3.2.4 Heat Gun.** Required for non-tacky sealers only.

**3.2.5 Panel Stand.** Panel stand capable of holding the test panel at a 45 degree angle through the sealer baking process unless a different angle is specified. Panel stand shall not act as a heat sink or interfere with the flow of the sealer. For typical examples, see Figure 1.

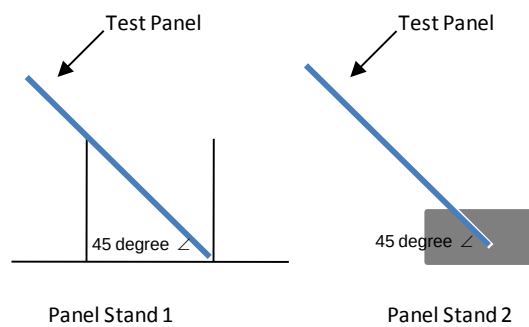


**Figure 1: Typical Panel Stands**

**3.2.6 Oven.** Forced air, circulating type oven capable of maintaining a set temperature within  $\pm 3$  °C.

**3.2.7 Measuring Scale.** With 1 mm increments.

### 3.3 Test Vehicle/Test Piece.

**3.3.1 Sealer Test Material.** Sheet stock of preformed sealer to be tested. Cut into discs with original diameter ( $D_0$ ) of 25 mm unless otherwise specified. Sealer thickness shall be 1.5 mm unless otherwise specified.

**3.3.2 Electrocoated Sheet Metal.** Electrocoated (ELPO) sheet metal with ELPO coating applied at standard film thickness and standard bake. Approximate panel size for one (1) test condition is 150 mm in length, 100 mm in width, and 0.8 mm thick. Larger panels, with approximate size of 300 mm in length, 100 mm in width, and 0.8 mm thick, are preferred for evaluating two (2) test conditions side by side.

**3.3.3 Number of Test Samples.** Testing shall be completed with a minimum of three (3) test samples per condition unless otherwise specified. All three (3) test samples shall be applied to the same test panel to minimize variability.

### 3.4 Test Time.

Calendar time: 1 d

Test time: 1 h

Coordination time: 1 h

**3.5 Test Required Information.** Record the flow of each test part and the average.

**3.6 Personnel/Skills.** Technicians capable of running this test per the instructions.

## 4 Procedure

### 4.1 Preparation.

**4.1.1 Mark the Test Panel.** Use the straight edge and the scribe tool or marker to draw a straight line parallel to the long edge of the ELPO test panel approximately 10 mm from the top edge.

**4.1.2 Heat Stake. Note:** Non-tacky sealer samples only. Use the heat gun to heat the area of the test panel where the top edge of the sealer will be applied to approximately 75 °C to 100 °C. When heat staking is required, apply the sealer to the metal panel within approximately 30 s from the time the heat source is removed.

**4.1.3 Prepare the Test Piece.** Place sealer discs along the scribed line so that the top edge of the sealer disc is touching the line. Sealer discs should be spaced to prevent interaction between samples. See Figure 2. Place the test panel in the panel stand.