

3.3 Performance Requirements.

3.3.1 Adhesion. One set of sealer panels per each current production E-Coat.

Sealer materials prepared per 3.3.1 shall then be baked per bake cycle in Table 1.

Table 1: Sealer Materials Bake Cycle

Bake System	Time and Temperature
High	25 minutes at 157 °C plus 25 minutes at 157 °C
Low	25 minutes at 115 °C plus 25 minutes at 115 °C

3.3.1.1 The sealer material must not crack or lose adhesion to the substrate during or after exposure to the environmental conditions in Table 2.

Table 2: Sealer Material Test Conditions

Environmental Conditions	Requirements
Initial	After cooling to ambient temperatures
Heat Aging	336 h at 70 °C
Humidity (GMW14729)	168 h at 38 °C and 100% Relative Humidity (RH)
Exterior Cycle (GMW14124, Cycle F)	12 Cycles
Cold Resistance (GMW16982)	10 slams at -30 °C

3.3.2 Appearance. Sealer samples shall be prepared with a representative production topcoat technology from each of the major paint suppliers from both car and truck lines. The material must be checked under primer surfacer followed by topcoat as well as under topcoat only. Colors used for testing are: white, light blue (or light silver or light gray), red and black. The topcoat must not show any loss of gloss, cracking, discoloration, tack, drag or loss of adhesion to the sealer material during or after the environmental conditions in Table 3.

Table 3: Sealer Appearance Test Conditions

Environmental Conditions	Requirements
Initial	After cooling to ambient temperatures
Heat Aging	336 h at 70 °C
Exterior Cycle (GMW14124, Cycle F)	12 Cycles

3.3.3 Porosity. The material must show no sign of trapped air from either an external observation or a sectional view after curing.

3.3.4 Shrinkage (GMW15481). Material baked per 3.3.1 shall be allowed a maximum shrinkage of 5%.

3.3.5 Corrosion Resistance. Apply two (2) strips of sealer 3 mm x 40 mm x 200 mm to the surface of a phosphated steel panel (inspect the panel first to be sure it is free of surface corrosion). Bake the panel for 1 h at 205 °C. Remove the panel from the oven and let it cool to room temperature.

3.3.5.1 Initial Adhesion. The material must exhibit good adhesion to the substrate with no cracking, separation or other deleterious effects. Remove one bead of sealer from the panel. There must be no corrosion on the surface of the panel underneath the sealer bead.

3.3.5.2 Humidity (GMW14729). Expose the panel with the remaining bead to 168 h of humidity at 38 °C and 100% RH.