



Quick Setting Adhesive for Repair of Interior and Exterior Trim Pieces

1 Scope

1.1 Material Description. This specification details the requirements for durability and adhesion of a two (2) part urethane general purpose adhesive. Part A is the base or resin; Part B is the accelerator or hardener.

The material is a translucent two (2) part urethane with a 20 s work time and a 30 s tack free time. It adheres well to a wide range of substrates. It is easily dispensed using a hand held applicator.

1.2 Symbols. Not applicable.

1.3 Applicability. Typically used for off-line repair bonding applications.

1.4 Remarks. Not applicable.

2 References

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

2.1 External Standards/Specifications.

ASTM D2240 SAE J1523

2.2 GM Standards/Specifications.

9985568	GMW3221	GMW14444	GMW16853
GMW3059	GMW14124	GMW14729	

3 Requirements

3.1 Requirements on Test Specimens. Reference GMW3221. Sample conditioning: All samples are to be conditioned prior to each requirement test to GMW3221, Code A.

3.1.1 Requirements are average values at 21 °C, 50% Relative Humidity (RH) unless otherwise specified.

3.2 Emissions Testing of Interior Materials and Parts. For all Code E designated parts per GMW14444, reference GMW16853 for emissions testing of interior materials and parts.

3.3 Material Requirements.

3.3.1 Density: Part A is 1.1 gm/cm³ and Part B is 1.0 g/cm³.

3.3.2 Viscosity: Part A is 1600 cps and Part B is 1050 cps.

3.3.3 Work Time: 19 s.

3.3.4 Tack Free Time: 31 s.

3.3.5 Shore D Hardness (ASTM D2240): 70.

3.3.6 Flash Point: 143 °C.

3.3.7 Service Temperature: -40 °C to 121 °C.

3.4 Performance Requirements.

3.4.1 Overlap Shear (OLS) Strength Testing, Method and Sample Preparation. See Table 1 for minimum requirements.

3.4.1.1 Substrate Coupons. For current representative Electrocoat (e-coat), Thermoplastic Olefin (TPO), and current representative clearcoat, substrate coupons are 25.4 mm x 101.6 mm. For Polyvinyl Chloride (PVC), substrate coupons are 15.9 mm x 76.2 mm.

- a. Clean all substrate coupons with isopropyl alcohol. For TPO, apply a consistent coating of 9985568 adhesion promoter to substrate coupon.
- b. Bond appropriate overlap area setting bond thickness to 0.762 mm. For TPO and e-coat, overlap area is 12.7 mm. For clearcoat and PVC, overlap area is 25.4 mm.
- c. Allow samples to cure for 72 h at 21 °C, 50% RH.
- d. Expose four (4) samples of each substrate to each environmental condition outlined in 3.4.1.3.

3.4.1.2 OLS Sample Testing.

- a. Condition samples at Room Temperature (RT) for 4 h after removal from environmental chamber and prior to testing.
- b. Place samples in equipment jaws.
- c. Initiate appropriate jaw separation rate. Rate for e-coat, clearcoat, and TPO is 12.7 mm/minute per SAE J1523. Rate for PVC is 25.4 mm/minute.
- d. Record average OLS shear strength in kilopascal (kPa).

3.4.1.3 Overlap Shear Conditioning. Perform the Overlap Shear Strength Testing after exposure to the conditions in 3.4.1.3a thru 3.4.1.3e.

- a. Green Strength; (1 h at 21 °C, 50% RH).
- b. Three (3) Days at 21 °C, 50% RH.
- c. Seven (7) Days at 70 °C.
- d. Fourteen (14) days humidity per GMW14729.
- e. Environmental cycle per GMW14124 cycle "C", One (1) cycle.

3.4.2 Pluck Strength Testing Method and Sample Preparation. See Table 2 for minimum requirements.

3.4.2.1 Substrate Panels. Size is 50.8 mm x 152.4 mm for TPO, current representative e-coat, and current representative clearcoat. PVC pieces are 25.4 mm x 15.9 mm.

- a. Clean substrate panels and PVC pieces with isopropyl alcohol. For TPO, apply a consistent coat of "3M 05907 Adhesion Promoter".
- b. Bond piece of PVC to substrate panel setting bond thickness at 0.762 mm.
- c. Repeat bonding step for three (3) additional pieces of PVC on each substrate.
- d. Expose pluck samples to environmental conditions as outlined in 3.4.2.3.

3.4.2.2 Pluck Sample Testing.

- a. Condition Pluck samples at RT for 4 h after removal from environmental chamber and prior to testing.
- b. Place substrate panels in 50.8 mm x 152.4 mm slide fixture. Align pluck fixture jaws below lower edges of PVC piece. Tighten fixture around PVC.
- c. Initiate jaw separation rate of 25.4 mm/minute.
- d. Record average pluck strength in kilopascal (kPa).

3.4.2.3 Pluck Strength Sample Conditioning.

- a. Green Strength; (1 h at 21 °C, 50% RH).
- b. Three (3) Days at 21 °C, 50% RH.
- c. Seven (7) Days at 70 °C.
- d. Fourteen (14) days humidity per GMW14729.
- e. Environmental cycle per GMW14124 cycle "C", One (1) cycle.