



Adhesive, One-Part, Antiflutter High Expansion, Low Strength

1 Scope

1.1 Material Description. This specification describes an expanding, high solids, low strength, pumpable one-part heat cured elastomeric adhesive.

1.2 Symbols. Not applicable.

1.3 Applicability. This adhesive is suitable for bonding exterior automotive body panels for stiffening and/or antiflutter applications, e.g., roof panel to roof rail or roof bow panel.

1.4 Remarks. This material will expand and cure in the heat of the Electrodeposition Paint Operation (ELPO) oven. The resulting bond provided by the curing reaction in the oven shall provide an adhesive strength within the material to the substrate (i.e., oily cold rolled eight (CR8) or galvanized), that is greater than the materials cohesive strength.

1.4.1 This system must be capable of being dispensed with current production equipment. It shall be compatible with production phosphate systems, ELPO paint systems and paint bake oven temperatures up to 205 °C.

1.4.2 Adhesive materials approved to this specification must also be tested and approved to the 9984273 Sealer Specification. This requirement is to allow for greater capacity and flexibility in regard to Body Shop dispensing robot utilization.

2 References

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

2.1 External Standards/Specifications.

ASTM D570	ASTM D1875	ASTM D4339	SAE J1524
ASTM D638	ASTM D2240	ASTM E502	SAE J1864
ASTM D1056	ASTM D2369	SAE J243	

2.2 GM Standards/Specifications.

9984273	GMW14270	GMW15481	GMW17056
GMW3059	GMW14874	GMW15735	

2.3 Additional References.

 None.

3 Requirements

3.1 Material Properties: Uncured Adhesive. See Table 1.

Table 1: Material Properties – Uncured Adhesive

Properties	Values	Test Methods
Color	Black or Grey	Visual
Odor	The material shall not have a noxious odor in either cured or uncured condition.	ASTM D4339
Sag Resistance	No sag or slide at room temperature or during bake.	SAE J243, ADS-10, C
Solids Content	>99%	ASTM D2369
Viscosity	75 s $\pm$ 15 s	SAE J1524 (Aged per GMW15735)
Density	1.33 g/cm ³ $\pm$ 03 g/cm ³	ASTM D1875
Flash Point	>205 °C (400 °F)	ASTM E502
Homogeneity	Material must be homogenous and free of lumps or air bubbles.	Visual
Volume Density	525% $\pm$ 75%	GMW15481
Ramp Expansion	150% $\pm$ 10%	GMW17056

3.2 Material Properties: Cured Adhesive. See Table 2.

Table 2: Material Properties – Cured Adhesives

Properties	Values	Test Methods
Hardness	10 $\pm$ 5	ASTM D2240,A
Moisture Absorption	<5%	ASTM D570
Tensile Strength	68.94 kPa to 103.42 kPa (10 psi to 15 psi) At 6.0 mm bond thickness	ASTM D638 (aged per GMW15735)
Compression/Deflection	50% at 34.47 kPa $\pm$ 13.78 kPa (5 psi $\pm$ 2 psi) 75% at 193.05 kPa $\pm$ 48.26 kPa (28 psi $\pm$ 7 psi)	ASTM D1056
Bondline Readthrough	No unacceptable bondline readthrough	Visual

3.3 Adhesive Performance Requirements. Materials approved to this specification shall meet the requirements of GMW14874-HE-LS

3.4 Restricted and Reportable Substances. All materials supplied to this standard must comply with GMW3059, Restricted and Reportable Substances, including the requirement to submit a full material composition disclosure to GM via the International Material Data System (IMDS) or via a completed GMW3059 report form.

4 Manufacturing Process

4.1 Storage Stability (GMW15735). Material conditioned using potential storage conditions shall be capable, of passing all the requirements of this specification.

4.2 Elevated Temperature Stability. As shipped, the adhesive shall be capable, of withstanding a temperature of 55 °C for 72 h, without separation or caking.