



ENGINEERING STANDARDS

Material Specification

LIMITED USE
HN2413

Sealer - Pumpable, Body Shop, Weld - Through, Non- Expanding/Expanding, High Washout Resistant Do Not Use on New Programs; No Replacement

1. SCOPE

This specification details the requirements of a high bake, non-paintable, fuel resistant, weld through sealer capable of being pumped at ambient temperatures. This material must have excellent adhesion to oily metal and resist wash-off through phosphate and E-coat. This expandable sealer is intended for use in the body shop to seal body joints against water, dust and air intrusion. The sealer must exhibit very even and controlled expansion characteristics and must not accelerate corrosion of the metal substrate over which it is applied.

The material must be a smooth and homogeneous mixture free of air, lumps, unmixed particles and foreign materials. It must be capable of being dispensed with standard production pumping equipment.

Type 1 defines a non-expanding sealer (0% Expansion)

Type 2 defines an expanding sealer with (65% Expansion)

2. REFERENCES

HN 1000	ASTM B117	GM9832P	HN 0017
GMW3059	GM9021P	GM9037	HN 0234
HN 0142	HN 0214	HN 0019	ASTM D1475

3. REQUIREMENTS

3.1	Specific Gravity	1.2 –1.7
3.2	Solids Content (ASTM D1475)	95% min
3.3	Flash point (ASTM D1475)	>200°C
3.4	Viscosity (GM9021P)	
	Orifice	2.6 mm
	Pressure	60 psi
	Sample Weight	40 g
	Seconds	80 - 100

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A temperature vs viscosity plot shall be submitted at the time of approval.
Temperature range should be $10^{\circ}\text{C} \leq t \leq 60^{\circ}\text{C}$.

3.5 Toxicity

The toxicity shall be disclosed in kind and magnitude, as required by the GM Holden Material Safety Data Sheet. In addition, the material must have full approval of the appropriate medical department prior to production use.

3.6 Expansion (GM9037)

Type 2 only- The sealer must expand 65% +/- 10% when baked at 180°C for 20 min.

3.7 Odour (GM9832P)

The sealer must not have an objectionable odour in either cured or uncured condition.

3.8 Colour

Type 1 = Black

Type 2 = Any colour apart from black.

4. PERFORMANCE REQUIREMENTS

4.1 Adhesion

The sealer must adhere to oily CRS (Cold Rolled Steel), Zn-Ni, Zn, and Zn-Fe panels (oiled with 3 g/m^2 representative body shop pressing oil). Panels are to be prepared as per HN 0234 and baked as per:

- i) Low ELPO bake = 20 min @ 160°C + 40 min @ 130°C (Low Paint bake)
- ii) Nominal ELPO bake = 30 min @ 180°C + 50 min @ 140°C (Nominal Paint bake)
- iii) High ELPO bake = 60 min @ 200°C + 50 min @ 140°C (Nominal Paint bake)

4.1.1 Initially the sealer material must not crack or lose adhesion to the panel during or after bake.

4.1.2 Heat Ageing- panel from 4.1 shall be baked for 2 weeks @ 70°C . There shall be no cracking or loss of adhesion.

Sealer must exhibit cohesive failure after heat ageing.

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