



## SEALANT, POLYACRYLATE RUBBER, MOISTURE CURED, HIGH VISCOSITY

WSS-M4G327-A1

### 1. SCOPE

The material defined by this specification is a one component thixotropic spreadable polyacrylate rubber based sealant/adhesive. It is capable of being pumped, metered and distributed into a gasket profile. These materials are ready for use as received, requiring no catalyst or heat cure. This material has a lower permeation rate and a longer open time versus silicone based sealants. Unlike silicone, this material will not leach siloxanes into engine oil, resulting in foaming and sensor contamination issues.

### 2. APPLICATION

This specification was released originally for materials used for form-in-place gaskets such as on engine oil pans, front covers, cylinder blocks and engine ladder frames, electrified powertrain, also transmission and axle housings where operating temperatures up to 150°C may be encountered. The material is a high viscosity, medium modulus, moisture cured material with excellent blowout resistance and long assembly time, excellent oil resistance, excellent adhesion and good joint movement on stamped coated steel, cast iron, aluminum and composites. This RTV will have lower permeability than silicone based RTV's. This material should not be used for water/glycol applications.

### 3. REQUIREMENTS

Material specification requirements are to be used for initial qualification of materials.

#### 3.1 APPROVED SOURCES

This specification requires the use of approved sources. Only the sources identified on the Ford Approved Source List (ASL) can be used when this specification is listed on the drawing, CAD file, or other documents. The list of approved sources is located within Ford at [www.mats.ford.com](http://www.mats.ford.com) or available externally through a Ford Materials Engineer.

#### 3.2 SPECIFIC GRAVITY (ASTM D 792, Method A)

1.30-1.37

#### 3.3 EXTRUSION RATE

Test method: Use a Semco 440 (or 4" by 0.125" equivalent) nozzle at 0.63 MPa pressure. Test to be done at 25 °C +/- 2 °C and 50% RH +/-5%. Weight material dispensed for 15 seconds. Multiply the weight by 4.

| bulk packs  | <300 ml containers |
|-------------|--------------------|
| 25-65 g/min | 10-65 g/min        |

| Date       | Action   | Revisions | Rev. 0 |
|------------|----------|-----------|--------|
|            |          |           |        |
|            |          |           |        |
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- 3.4 BLOW OUT RESISTANCE** 60 s min  
(ASTM F 2523, Method A, 14 kPa pressure, cured for 1 minute at 23 °C +/- 2 °C and 50% RH +/-5%, 0.50 mm gap)
- 3.5 SKIN OVER TIME** (Assembly Open Time) 60 minutes max  
(FLTM BV 127-02 or FLTM BV 125-01 at 25°C +/- 2°C and 50% RH +/-5%)
- 3.6 CURED PROPERTIES**  
Properties determined after curing the sealant for 168 h +/- 2 h at 23 °C +/- 2 °C and 50% RH +/-5% on a 2.0 mm cross-section.
- |                                                         |             |
|---------------------------------------------------------|-------------|
| Original Tensile Strength<br>(ASTM D 412, Die C)        | 1.0 MPa min |
| Elongation                                              | 150 % min   |
| Modulus                                                 | 0.5 MPa min |
| Durometer Hardness<br>(ISO 868, Shore A, Instantaneous) | 25-35       |
- 3.7 OIL IMMERSION**  
(ASTM D 471, 168 h at 150 °C +/- 2 °C, ASTM SF 105 Oil or its equivalent replacement after cure as per paragraph 3.6)
- |                                                          |            |
|----------------------------------------------------------|------------|
| Tensile Strength Change<br>(ASTM D 412, Die C)           | 0 to +10 % |
| Elongation Change                                        | -60 % max  |
| Volume Change                                            | -20 max    |
| Hardness Change<br>(ASTM D 2240, Shore A, instantaneous) | +40 max    |
- 3.8 LAP SHEAR ADHESION & JOINT MOVEMENT**  
(SAE J1523, material thickness 1mm. Cure sealant for 168h at 23 °C +/- 2 °C and 50% RH +/-5%. Joint movement is defined as extension (mm) when at maximum load, minus any slack in the test fixture.
- 3.8.1** Clean lap shears, no oil aging
- |                                                                      |             |
|----------------------------------------------------------------------|-------------|
| 2024 Alclad aluminum to Alclad aluminum<br>Adhesion (Shear Strength) | 1.0 MPa min |
| Joint movement                                                       | 1.5 mm min  |
- 3.8.2** Clean lap shears, oil aged  
(Age for 168h at 150 °C +/- 2 °C in ASTM SF 105 oil or its equivalent replacement, after cure as per paragraph 3.6)
- |                                         |  |
|-----------------------------------------|--|
| 2024 Alclad aluminum to Alclad aluminum |  |
|-----------------------------------------|--|