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INTERNATIONAL
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SURFACE VEHICLE RECOMMENDED PRACTICE

SAE J250

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SYNTHETIC RESIN PLASTIC SEALERS, NONDRYING TYPE

***Foreword*—**This Document has not changed other than to put it into the new SAE Technical Standards Board Format.

***1. Scope*—**The material desired under this recommended practice is a synthetic resin plastic sealer of the nondrying, nonbleeding, and noncorrosive type that may be extruded to the specified size and used as a medium for producing a water tight seal between 2 pressed steel sections or between rubber and steel.

2. References

2.1 Applicable Publications—The following publications form a part of the specification to the extent specified herein.

2.1.1 ASTM PUBLICATIONS—Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM D 217—Test Method for Cone Penetration of Lubricating Grease
ASTM D 553—Discontinued
ASTM D 1321—Test Method of Needle Penetration of Petroleum Waxes

3. Color

3.1 Gray—The color of the sealer must be light and shall not smear in order to facilitate clean up in assembly.

3.2 Black

4. Physical Properties

4.1 Consistency

Requirements No. 1—Cone penetration, 7–10 mm.
Method of Test—ASTM D 217 using 150 g cone plus 150 g additional weight.
Requirement No. 2—Needle penetration, 18–22 mm.
Method Test—ASTM D 1321 using total weight including needle of 100 g.

4.2 Solids—99.0% minimum.

Method of Test—ASTM D 553—Weight 3 g sample and bake for 3 hr at 215 °F.

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4.3 Cold Resistance—Requirement No. 1—Pliable at −20 °F.

Method of Test—A sample of the material applied to a thin polyethylene or polyester film is exposed to a temperature of −20 °F for 4 hr and immediately upon removal from this temperature bent across a 2 1/2 in. diameter mandrel. Cracks shall not be evident.

Requirement No. 2—No evidence of cracking, embrittlement, or loss of adhesion shall be present.

Method of Test—Apply 3/16 x 6 in. bead of sealer to a 4 x 12 in. enameled or lacquered panel. A piece of waxed Kraft paper is placed on top of the beads and rolled with 3 single passes of a 3 lb roller. The panels are then exposed to −20 °F for 4 hr and slammed at 90 deg in a cold slam fixture, see Figure 1.

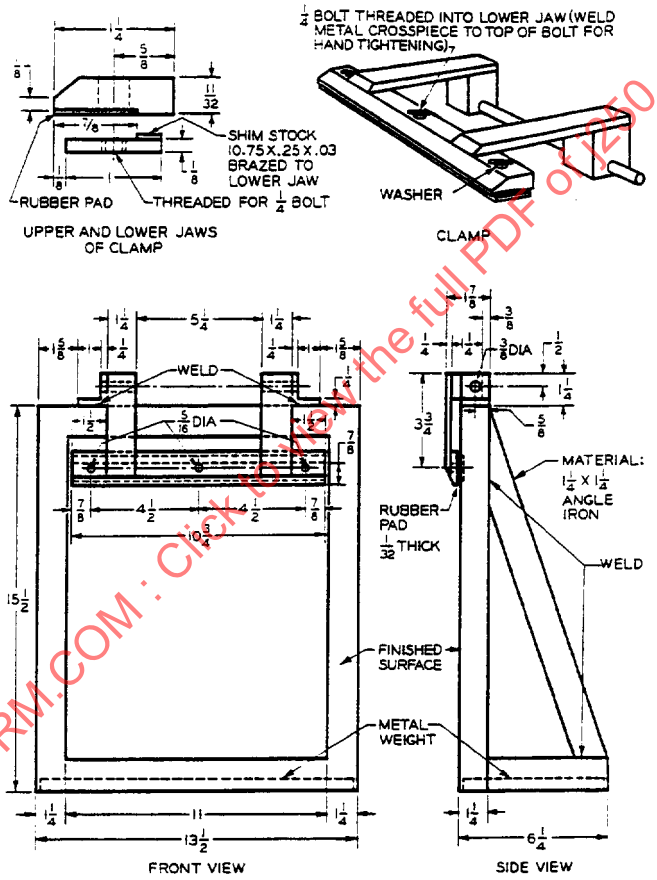

FIGURE 1—DETAILED VIEW OF SLAMMING FIXTURE FOR COLD ADHESION TEST

4.4 Bleeding—No discoloration or migratory staining of the enameled or lacquered finish will be tolerated when the material is subjected to the following test:

Method of Test—Apply a 3/16 x 6 in. bead of the material to a steel panel which has been primed, painted, and baked according to the users specification and subject to a baking temperature of 280 °F for 1 hr.

4.5 Stability—Method of Test No. 1—A sample of the material shall be exposed for 24 hr to a temperature of 158 °F and after exposure the surface must remain tacky with no appreciable hardening. Bead must be readily removed from backing without stretching over 15%. As received the sealer shall not stretch over 10%.

Method of Test No. 2—A sample of the material after being exposed for 2 weeks to a temperature of 158 °F shall not leach its oils or show cracks when bent across a 1 in. diameter mandrel.

4.6 Water Resistance—The water resistance of the material shall conform to the following:

Method of Test—A sample of the material is held under water, at room temperature, and kneaded with the fingers for 1 minute. During the kneading the material shall not disintegrate nor become short showing loss of cohesion. The sealer must be unaffected by water or a 5% sodium chloride solution when immersed for a period of 24 hr at room temperature.

4.7 Solvent Resistance (When Specified)—The solvent resistance of the material shall conform to the following:

Method of Test—A 3/16 x 2 in. bead shall be immersed in gasoline for a period of 70 hr at room temperature. There shall be no deterioration, evidence of solubility, or loss of adhesion to the metal.

4.8 Sag Characteristics—The material shall not sag, blister, nor pull away from a horizontal metal surface when tested under the following conditions:

Method of Test—Apply a 1/2 in. bead of sealer to the angle joint of the fixture shown in Figure 2. (Fixture is to be made from 036–042 gage standard body steel and phosphate coated.) Brush or trowel the bead against the sides of the angle so that the material takes a concave shape. This may be done with the angle pointing up. Immediately invert the panel and block so that one leg is vertical. Place in the inverted position in an oven and heat for 1/2 hr at 400 °F.

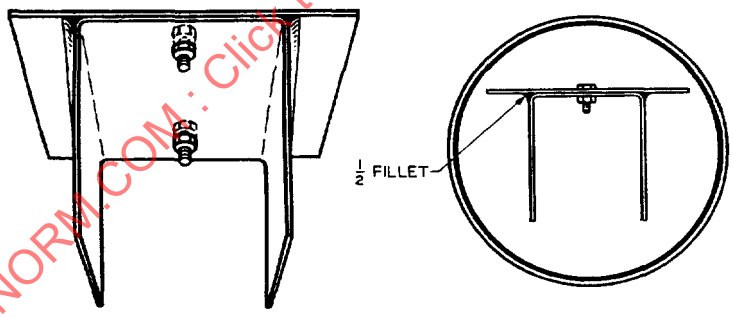

FIGURE 2—FIXTURE FOR SAG CHARACTERISTICS TEST

4.9 Aged Adhesion—The adhesion shall be greater than the cohesive strength of the material when an attempt is made to strip or peel a bead of the sealer from a metal panel after being subjected to the following test:

Method of Test—Apply a 3/16 x 6 in. bead of the material to a 4 x 12 in. steel panel which has been primed, painted, and baked according to the users specifications. A piece of waxed Kraft paper is placed on top of the bead and rolled with 3 single passes of a 3 lb roller. The panel shall then be aged for 1 hr at 280 °F followed by 1 week at 158 °F and a cold cycle of –20 °F for 6 hr.

5. Packaging—Beads shall be supplied as specified by the user and must be packaged in such a manner as to prevent the beads from sticking together.

PREPARED BY THE SAE NONMETALLIC MATERIALS COMMITTEE