

EDS

Engineering,
GM DAEWOO Auto & Technology
Standards

PRIMER SURFACER (LOW BAKE TYPE)

EDS-M-8740

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VERSION: 7

1. SCOPE

This standard specifies the physical properties of the primer surfacer used to improve quality of the coated surface, such as adhesion and chipping resistance.

2. GENERAL PHYSICAL PROPERTIES OF MATERIAL

The primer surfacer contains polyester and melamine resin as the base material with addition of color pigment and permits both manual application with a general air spray gun and automatic application by the electrostatic bell machine.

3. TEST CONDITIONS

3.1. Standard conditions of test place

The test sites shall basically maintain temperature at $20 \pm 2^{\circ}\text{C}$ and humidity at $65 \pm 5\%$, be free of direct sunlight under the conditions that there shall be no gas generation and less ventilation. If not, temperature and humidity shall be recorded in the test sheet.

3.2. Material condition of test piece

The test piece shall basically be the finished vehicle built to the determined coating spec, but the one built of the same material to the same spec may be used.

3.3. Baking condition

3.3.1. Test piece curing conditions shall basically be $(145 \pm 5)^{\circ}\text{C} \times 20\text{minutes}(\text{effective time})$.

3.3.2. The curing time and temperature shall be based on the point when the temperature of the material to coat on reaches a designated point after the test piece is put into a dry oven.

4. REQUIREMENTS

4.1. Properties of delivered material

4.1.1. Color : According to color specifications by models

4.1.2. Delivery viscosity (EDS-T-7908)

(1) Ford cup #4, 20°C

(2) Specified value ± 2 Sec.

4.1.3. Non-Volatile (EDS-T-7937)

(1) $120^{\circ}\text{C} \times 2$ hours

(2) Specified value ± 1.5

4.1.4. Dilution thinner :

(1) EDS-M-8710 : Solid thinner

4.1.5. Electric resistance (EDS-T-7913, based on diluted paint).

- (1) Exterior primer surfacer : 300 ~ 1,100 kΩ.
- (2) Interior primer surfacer : 500 ~ 2,000 kΩ.

4.1.6. Specific gravity (EDS-T-7965, clause 7)

- (1) 100 cc Specific gravity cup, 20 °C
- (2) Specified value ± 0.02

4.2. Material condition at coating

4.2.1. Dilution viscosity (EDS-T-7908, FORD CUP No. 4 at 20 °C)

Add EDS-M-8710 solid thinner to the undiluted paint to adjust to specified viscosity at 20 °C.

4.2.2. Storage stability (undiluted solution, EDS-T-7963)

- (1) Check the paint condition after exposure to 50 °C × 120 hours and subsequent exposure from the room temperature to 20 °C ± 2K.
- (2) After storage, the paint shall be free from gel and seeding and the viscosity increase compared to the initial state shall less than 20 Sec.
- (3) No abnormalities in workability and external appearance after storage stability.

4.2.3. Dilution stability.

- (1) No precipitation after dilution to the specified viscosity, *fill it in mass cylinder* and subsequent exposure to room temperature for 2 hours.
- (2) Vessel : Mass cylinder capable of 500ml

4.2.4. Coating method

- (1) Automatic application by the electrostatic BELL machine.
- (2) Automatic application by the uninterruptible Robot
- (3) Manual application with a general air spray gun.

4.2.5. Film composition of the steel plate for primer surfacer coating

- (1) Phosphate film
- (2) Phosphate film + EDS-M-8773(Electro coat)

4.2.6. Flash - off time

Maintain approximately 8 minutes at a temperature of 40 ~ 45 °C.

4.2.7. Drying method : convection drying.

4.2.8. Drying period and temperature : Maintain 20 minutes(effective time) at 145 ± 5 °C (based on body temperature).

4.2.9. Appearance after drying : After drying, the coated surface shall show no sign of defects, such as run or pinholes etc.

5. REQUIREMENTS AFTER DRYING

5.1. Film thickness (EDS-T-7970)

5.1.1. Exterior primer surfacer : 30 ~ 35 μm .

5.1.2. Interior primer surfacer : 15 ~ 25 μm .

5.2. Hiding power (EDS-T-7914)

5.2.1. For the interior primer surfacer, which is applied for finishing of the hood and trunk resistance parts, and exterior primer surfacer, the practical hiding power shall not exceed 20 μm on the electro coating film.

5.2.2. Hiding power with the black and white sheets shall conform to the primer surfacer color characteristics as long as it does not affect work (practical hiding power shall not exceed 20 μm) in the line.

5.3. Paint film composition of test piece.

5.3.1. Condition A : Phosphate film + EDS-M-8773 + EDS-M-8740.

5.3.2. Condition B : Phosphate film + EDS-M-8740.

5.3.3. Condition C : Phosphate film + EDS-M-8773 + EDS-M-8740 (Exterior primer surfacer) + EDS-M-8731, EDS-M-8732.

5.4. Requirements after exposure to room temperature for 24 hours

5.4.1. Distinction Of Image / Gloss (EDS-T-7907, BYK HAZE-Gloss Meter)

To be 80% min. when measured under test piece conditions A with an angle of 60° .

5.4.2. Adhesion (EDS-T-7910)

(1) Tape : 3M #610

(2) Cutter : Use a cutter to JIS K 5400 or equivalent cutter (NT cutter A type is recommended)

(3) Tape peel angle : 90°

(4) Cutter angle : approximately 30°

(5) Adhesion under test piece conditions A and C shall be GT-0 and there shall be no drop in adhesion after elapse of 4 weeks

5.4.3. Hardness (EDS-T-7948)

(1) Hardness under test piece Condition A shall be 80 ~ 100.

5.4.4. Cupping (EDS-T-7974)

(1) Cupping under test piece Conditions A shall be more than 5.0mm and there shall be no drop in cupping after elapse of 4 weeks.

(2) Cupping under test piece Conditions C shall be more than 4mm (But, there shall be more than 5mm, when coating under EDS-M-8732) and there shall be no drop in cupping after elapse of 4 weeks.