STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
METHODS OF TEST FOR PAINTS AND RELATED MATERIALS

METHOD 459.1. RESISTANCE TO WASHING

1 SCOPE. This standard sets out a method for determining the resistance of paint films to washing.

The method is primarily intended to assess the ability of the paint film to resist damage by repeated washing. It does not necessarily assess the ease of stain removal from the paint surface.

2 PRINCIPLE. The paint to be tested is applied to the test panels. After drying and conditioning, the paint films are mechanically washed over a specified number of cycles with a sponge soaked in soap solution. The resistance of the paint film to washing is assessed, particularly in respect to changes in colour and gloss, by comparing it to an unwashed control film.

3 APPARATUS.

3.1 Paint Washability Machine (See Fig. 1). This consists essentially of a mechanism which imparts a lengthwise reciprocating motion to a metal box fitted with a sponge, across the surface of a fixed test panel. The total mass of the dry sponge and its metal box shall be 450 ± 15 g and the reciprocating mechanism shall not impart any vertical force to the metal box.

The length of stroke of the sponge over the test surface shall be about 30 cm.

A constant rate of travel of the sponge over the test surface shall be maintained in the range 30 cycles/min to 40 cycles/min (i.e. 60 strokes/min to 80 strokes/min).

3.2 Sponge. A pre-shrunk sponge cut to a dry size of approximate dimensions 10 cm × 7.5 cm × 4 cm.

3.3 Drip Feed. A constant drip of soap solution shall be applied to the test surface throughout the test period on an area which will not be used for gloss measurements.

3.4 Paint Applicator. An applicator having a gap of approximately 100 μm and producing paint films approximately 12 cm in width.

3.5 Grey Scale. A grey scale conforming to AS 2001.4.1.*

4 SOAP SOLUTION. A 5 g/L solution of anhydrous sodium oleate made up with distilled or deionized water.

5 TEST CONDITIONS. The test shall be carried out under the routine conditions specified in Method 101.4.†

6 TEST PANELS. Two test panels which shall be made from etched glass or black Leneta‡ plastics. The test panel to be used for the washability testing (Panel A) shall have typical dimensions of 15 cm × 45 cm and the control panel (Panel B) shall have dimensions not less than 15 cm × 25 cm.

7 PREPARATION OF PANELS.

(a) Place the panels on a firm, flat surface.

(b) Apply a film of paint to the panels by means of the applicator.

(c) Dry the panels by the appropriate method.

8 PROCEDURE.

(a) Measure the specular gloss of Panel A in accordance with Method 602.2§ using an 85-degree exposure head when the 60-degree gloss of the paint is less than 30.

(b) Secure Panel A in the tray of the washability apparatus and adjust the drip feed so that the soap solution falls onto the test surface at a rate of 0.5 mL/min to 0.8 mL/min (approximately 10 drops/min to 15 drops/min).

(c) Soak the sponge in distilled or deionized water for 5 min, remove from the water and squeeze with one hand, until no water drips from the sponge.

*AS 2001.4.1, Methods of Test for Textiles, Colourfastness Tests Definitions and General Requirements.
†Method 101.4, Conditions of Test, Temperature Controlled.
‡Leneta P-121-ION dull black plastics panels obtainable from the Leneta Co, PO Box 576, Ho-Ho-Kus, N.J., USA.
§Method 602.2, Specular Gloss.

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