

Methods of test for motor vehicle paints —

Part 14: Resistance to outdoor exposure

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Foreword

This Part of this British Standard has been prepared under the authority of the Automobile Industry Standards Committee and is based on Information Sheets Nos. 147 and NM – 5 of the Society of Motor Manufacturers and Traders Ltd. (SMMT).

Tests for paints for general purposes are given in BS 3900¹⁾ and, wherever possible, reference has been made to that standard.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 and 2 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

¹⁾ BS 3900, “*Methods of test paint*”,
BS 3900-A3, “*Preparation of panels prior to painting*”,
BS 3900-A4, “*Notes for guidance on paint application*”.

1 Scope

This Part of this British Standard describes a method to be used for the evaluation of the durability of paint systems for motor vehicles.

The size of test panels is given and their disposition in racks. The equipment necessary for the outdoor exposure test is described and the method of testing specified.

2 Preparation of test panels

2.1 Panels, not smaller than 150 mm × 100 mm, specified and pretreated in accordance with the requirements of BS 3900-A3²⁾ (note particularly Clause 2.2) shall be coated in accordance with the requirements of BS 3900-A4²⁾, with the paint system to be tested.

2.2 Panels shall be aged under normal laboratory conditions for 7 days before testing unless otherwise agreed.

3 Equipment

3.1 Exposure racks. Suitable racks to support the exposure panels at an angle of 5° or 45° to the horizontal, as may be specified. If the panels are supported in grooves, then suitable drain holes shall be provided to prevent accumulation of water.

Panels shall be insulated from metal during the period of exposure.

The racks shall be so positioned that the panels face south in the northern hemisphere, and north in the southern hemisphere, and shall not become shaded from the sun at any time, except by clouds.

3.2 Scriber. The scriber shall be made from mild steel 0.6 mm thick and shaped to give a chisel edge capable of giving a cut in the film, 0.6 mm wide, penetrating to the metal substrate.

4 Test methods

4.1 Evaluation of corrosion

1) The test panel shall be damaged, with the scriber, by making 2 longitudinal scratches, 0.6 mm wide, through to the metal substrate. They shall extend at least $\frac{2}{3}$ the length of the panel and shall be positioned centrally in each vertical half.

2) The panel shall be exposed for the specified period and shall be examined at monthly intervals.

3) The panel shall be washed monthly, on the right hand vertical half only, using distilled water containing 0.5 % mild detergent applied with a soft sponge and finally rinsed thoroughly with distilled water.

4) On the final examination part, or all, of the paint film shall be removed with a suitable paint remover to reveal any corrosion.

4.2 Evaluation of durability

1) The panel shall be exposed for the specified period and shall be examined at monthly intervals.

2) The panel shall be washed monthly, on the right hand vertical half only, using distilled water containing 0.5 % mild detergent applied with a soft sponge and finally rinsed thoroughly with distilled water.

3) At the end of the exposure period, the panel shall be polished, as required, with the test polish specified in Appendix A. It may sometimes be appropriate to polish a portion of the panel at intervals during the exposure period.

5 Assessment of results

After the specified period, the panel shall be examined for spread of corrosion, general corrosion, loss of gloss, chalking, change of colour, and micro-breakdown, as relevant.

²⁾ BS 3900, "Methods of test paint",
BS 3900-A3, "Preparation of panels prior to painting",
BS 3900-A4, "Notes for guidance on paint application".