

# Methods of test for motor vehicle paints —

## Part 13: Resistance to deterioration by contact with other materials

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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 — 5R of the Society of Motor Manufacturers and Traders Ltd. (SMMT).

Tests for paints for general purposes are given in BS 3900<sup>1)</sup> and, wherever possible, reference has been made to that standard.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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### Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 4 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.

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<sup>1)</sup> BS 3900, “*Methods of test for paints*”.

## 1 Scope

This Part of this British Standard describes methods for the evaluation of the resistance to deterioration of paint systems by contact with fuels, oils, greases, battery acid, rubbers, plastics adhesives, and other agents liable to stain or damage the finish.

## 2 Preparation of test panels

**2.1** Panels 150 mm × 100 mm or other convenient size (e.g. 150 mm × 50 mm for immersion tests) specified and pretreated in accordance with the requirements of BS 3900-A3<sup>2)</sup> (note particularly Clause 2.2) shall be coated in accordance with the requirements of BS 3900-A4<sup>2)</sup> with the paint system to be tested. Normally, steel panels are used, but it may be appropriate to use other substrates.

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

## 3 Immersion tests

**3.1 Test A.** Test A is suitable for paints for exterior of engines, etc.

**3.1.1 Test fluid.** The test fluid shall be as agreed between the purchaser and the supplier, and shall normally be a commercially available oil.

**3.1.2 Test conditions.** The test conditions shall comprise immersion at  $60 \pm 2$  °C for 2 h or other period by agreement between the purchaser and the supplier.

**3.1.3 Procedure.** A scratch 0.6 mm wide shall be made through the paint film along the centre of the length of the panel and terminating approximately 25 mm from each edge. The panel shall be immersed for 50–75 mm of its length in the test liquid for the required time and at the specified temperature. At the end of this time the panel shall be removed from the liquid and wiped dry with cleaning tissue or lint free cloth. The paint film shall be examined, immediately, for any signs of deterioration. The examination shall be repeated after 1 h and any change noted.

**3.1.4 Assessment of results.** Any swelling, loss of gloss, softening, colour change, staining or other deterioration before and after polishing (if applicable) shall be recorded.

The acceptable degree of change shall be the subject of agreement between the purchaser and the supplier.

**3.2 Test B.** Test B is suitable for paints used within axle casings, etc.

**3.2.1 Test fluid.** The test fluid shall be as agreed between the purchaser and the supplier, and shall normally be a commercially available oil.

**3.2.2 Test conditions.** The test conditions shall comprise immersion at  $100 \pm 2$  °C for 2 h or other period by agreement between the purchaser and the supplier.

**3.2.3 Procedure.** The procedure should be as described in 3.1.3.

**3.2.4 Assessment of results.** The assessment of results shall be carried out as described in 3.1.4.

**3.3 Test C.** Test C is suitable for paints used within engine crankcases, etc.

**3.3.1 Test fluid.** The test fluid shall be as agreed between the purchaser and the supplier, and shall normally be a commercially available oil.

**3.3.2 Test conditions.** The test conditions shall comprise immersion at  $120 \pm 2$  °C for 2 h or other period by agreement between the purchaser and the supplier.

**3.3.3 Procedure.** The procedure shall be as described in 3.1.3.

**3.3.4 Assessment of results.** The assessment of results shall be carried out as described in 3.1.4.

**3.4 Test D.** Test D is suitable for paints subjected to the action of liquids used in production.

**3.4.1 Test fluid.** The test fluid shall be as agreed between the purchaser and the supplier, and shall normally be a commercially available cleaner, cutting fluid, etc.

**3.4.2 Test conditions.** The test conditions shall comprise immersion at  $70 \pm 2$  °C for 15 min, or other period by agreement between the purchaser and the supplier.

**3.4.3 Procedure.** The procedure shall be as described in 3.1.3.

**3.4.4 Assessment of results.** The assessment of results shall be carried out as described in 3.1.4.

**3.5 Test E.** Test E is suitable for paints requiring some degree of petrol resistance.

**3.5.1 Test fluid.** The test fluid shall be as agreed between the purchaser and the supplier, and shall normally be a commercially available petrol.

**3.5.2 Test conditions.** The test conditions shall comprise immersion at  $25 \pm 2$  °C for 3 min, or other period by agreement between the purchaser and the supplier.

<sup>2)</sup> BS 3900-A3, "Preparation of panels prior to painting".  
BS 3900-A4, "Notes for guidance on paint application".