

Australian Standard[®]

Paints and related materials—Methods of test

Method 402.1: Bend test

PREFACE

This Standard was prepared by the Standards Australia Committee for Paints and Related Materials, under the direction of the Multitechnics Standards Board, to supersede the 1981 edition.

The Standard is essentially the same as the previous edition but includes a larger range of test mandrels.

The Standard is similar to that described in ISO 1519, *Paints and varnishes – Bend test (cylindrical mandrel)* but differs in that:

- (a) Only the type 1 apparatus of ISO 1519 is used.
- (b) The routine ($23 \pm 3^{\circ}\text{C}$) or referee ($25 \pm 1^{\circ}\text{C}$) temperature conditions of AS 1580.101.4 are adopted instead of a recommended temperature of $23 \pm 2^{\circ}\text{C}$.

METHOD

1 SCOPE This Standard sets out a procedure for assessing the ductility of a paint film by bending a painted test panel around a mandrel.

2 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS

1580	Paints and related materials—Methods of test
1580.101.1	Method 101.1: Air drying conditions
1580.101.3	Method 101.3: Standard procedure for stoving
1580.101.4	Method 101.4: Conditions of test, temperature controlled
1580.104.1	Method 104.1: Recommended materials for test panels

3 PRINCIPLE A painted test panel is inserted in a hinged jig and bent through 180 degrees around a mandrel of a specified diameter. The bent panel is examined for evidence of damage to the paint film.

4 APPARATUS A suitable apparatus is shown in Figures 1 and 2 and is used with test panels of thickness not greater than 0.3 mm. A set of hinges is provided, each incorporating a cylindrical mandrel; the diameters of the mandrels are 2, 3, 4, 5, 6, 8, 10, 12, 16, 20, 25 and 32 mm respectively. The mandrels shall be made of rigid and suitably corrosion-resistant material, e.g. stainless steel, and the tolerance on the nominated mandrel diameter shall be ± 0.1 mm.

The dimensions of the apparatus are not critical, except that the gap between the surface of the mandrel and the plates of the hinge should be 0.55 ± 0.05 mm. The mandrel should be free to rotate on its pin and the apparatus shall be provided with a stop to ensure that when the test panel is bent, the two portions are parallel.

5 TEST PANEL The test panel shall be made from tinplate or soft aluminium complying with the requirements of AS 1580.104.1, and its dimensions shall be 100 mm \times 50 mm.

6 PREPARATION OF PANELS If required, pretreat the test panel by the appropriate method. Coat the panels to the prescribed film thickness by the appropriate method and cure under conditions specified in AS 1580.101.1, AS 1580.101.3, as appropriate or as otherwise specified for the paint being tested.