

Australian Standard[®]

Paints and related materials—Methods of test

Method 401.3: Drying times using a BK-type recorder

PREFACE

This Standard was prepared by the Standards Australia Committee on Paints and Related Materials, under the direction of the Chemical Standards Board, at the request of paint manufacturers who required a simple, straightforward method for determining paint drying times—a method which indicated the condition and performance of a coating during its early drying stages after being applied to a surface.

METHOD

1 SCOPE. This Standard describes a procedure for determining the times corresponding to defined drying stages of paints using the BK-type drying recorder.

NOTE: Although this test is primarily intended for conventional solvent-borne paints, it may also be used, as appropriate, to assess the drying and curing characteristics of other types of paints.

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

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| 1580 | Paints and related materials—Methods of test |
| 1580.101.1 | Method 101.1: Air drying conditions |
| 1580.102.1 | Method 102.1: Sampling procedure |
| 1580.103.1 | Method 103.1: Preliminary examination and preparation for testing |

3 DEFINITIONS. For the purpose of this Standard the definitions below apply.

3.1 Wet time—the period corresponding to the length of track traced out between the starting point and the *commencement of the continuous groove* cut to the substrate level in the paint surface (see Figure 1, Point A).

3.2 Surface dry time—the period corresponding to the length of track traced out between the starting point and the *end of the continuous groove* cut to the substrate level in the paint surface (see Figure 1, Point B).

3.3 Through dry time—the period corresponding to the length of track traced out between the starting point and the *end of the last visible tear/break* in the paint surface (see Figure 1, Point C).

NOTE: In the case of chemically-cured paints and paints which dry by evaporation of solvent only, the through-dry time may be the only recognizable drying period.

4 PRINCIPLE. The test paint is applied to the test panel using an applicator. The coated panel is immediately transferred to the test apparatus where the paint film is subjected to the pressure of a prescribed pin drawn over its length at a specified rate. The panel is then examined to determine the periods required to reach defined drying stages.

5 APPARATUS.

5.1 Continuous drying recorder—as illustrated in Figure 2 of which the moving pin assembly shall be cleaned and loaded, as necessary, to produce an effective load of between 3.0 grams and 4.0 grams. The cross-section of the pin shall be of a nominal diameter of 1 mm and, while the tip need not be hemispherical in shape, it shall have rounded edges of radius 0.2 mm or greater. The angle of the main axis of the pin relative to the test panel shall be $90 \pm 5^\circ$, which may be assessed in routine testing by means of a set square. The mechanism driving the pin along the surface of the film shall be capable of controlling the rate of movement at any time during the test to within 2 percent of value specified for the test.