INTERNATIONAL STANDARD 1517

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Paints and varnishes — Surface-drying test — Ballotini method

First edition — 1973-12-15

UDC 667.612.8

Ref. No. ISO 1517-1973 (E)

Descriptors : paints, varnishes, tests, drying.

Price based on 2 pages

FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up has the right to be represented on that Committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

Prior to 1972, the results of the work of the Technical Committees were published as ISO Recommendations; these documents are now in the process of being transformed into International Standards. As part of this process, International Standard ISO 1517 replaces ISO Recommendation R 1517-1970 drawn up by Technical Committee ISO/TC 35, *Paints and varnishes.*

The Member Bodies of the following countries approved the Recommendation :

Australia	Iran	South Africa, Rep. of
Austria	Ireland	Spain
Denmark	Israel	Sweden
Egypt. Arab Rep. of	Italy	Switzerland
France	Netherlands	Turkey
Germany	Peru	United Kingdom
Greece	Poland	U.S.S.R.
India	Portugal	

No Member Body expressed disapproval of the Recommendation.

Printed in Switzerland

Paints and varnishes — Surface-drying test — Ballotini method

0 INTRODUCTION

This International Standard is one of a series dealing with the sampling and testing of paints, varnishes and related products. It should be read in conjunction with ISO 1512, ISO 1513 and ISO 1514.

The method of test specified requires to be completed, for any particular application, by the following supplementary information. This information should be derived from the national standard or other document for the material under test or, where appropriate, should be the subject of agreement between the interested parties.

a) Nature and surface preparation of substrate.

b) Method of application of test coating to substrate.

c) Thickness, in micrometres, of the dry coating, including method of measurement, and whether it is a single coating or a multicoat system.

d) Duration and conditions of drying of primer and/or undercoat before testing.

e) Duration of drying before testing, if applicable.

1 SCOPE AND FIELD OF APPLICATION

1.1 This International Standard specifies a method for determining the surface-drying characteristics of a coating of a paint or varnish which dries by the action of air or by chemical reaction of its components.

The method is not intended to apply to stoving products.

1.2 The method described may be carried out

either as a "go/no go" test, by determining the surface-drying state after a specified time, to assess compliance with a particular requirement,

or by determining the surface-drying state at suitable intervals until the surface-drying time is obtained.

2 REFERENCES

ISO 1512, *Paints and varnishes — Sampling.*

ISO 1513, *Paints and varnishes — Examination and preparation of samples for testing.*

ISO 1514, *Paints and varnishes — Standard panels for testing.*

ISO 2808, *Paints and varnishes — Determination of film thickness.*

3 DEFINITIONS

3.1 surface-drying state : General term describing the state of the surface of a coating of paint or varnish, i.e. whether "surface-dry" or not.

3.2 surface-dry : Surface-drying state of a coating of paint or varnish when ballotini can be lightly brushed away without damaging the surface of the coating.

3.3 surface-drying time : Period of time between that at which a coating of paint or varnish is applied to a prepared test panel and that at which the coating is assessed as just surface-dry by the test procedure specified in clause 7.

4 APPARATUS

4.1 Ballotini (small transparent glass spheres).

The material shall be obtained by sieving from a suitable commercial grade of ballotini and shall be graded so that none passes a sieve of nominal mesh aperture 125 μm and all passes a sieve of nominal mesh aperture 250 μm.

4.2 Brush, soft-haired.

4.3 Stop-watch or **stop-clock.**

5 SAMPLING

A representative sample of the product to be tested shall be taken as specified in ISO 1512. The samples shall be examined and prepared for testing as specified in ISO 1513.

6 TEST PANELS

6.1 Material and surface preparation

Unless otherwise specified or agreed, the test panel shall be of glass, burnished steel, burnished tinplate or burnished aluminium complying with the requirements of ISO 1514, and the surface shall be prepared for painting as specified therein.

6.2 Coating the panel

6.2.1 If required, the test panel shall be coated with the appropriate primer and/or undercoat and allowed to dry for an agreed period before applying the product under test.

6.2.2 The test panel shall be coated with the product under test by the specified or agreed method of application.

7 PROCEDURE

7.1 Drying the test panel

Allow the coated test panel to dry in a vertical position, shielded from air currents, in the absence of direct sunlight and under ambient conditions of $23 \pm 2\ ^{\circ}C$ and $50 \pm 5\ \%$ relative humidity, unless otherwise stated.

7.2 Assessment of surface-drying state after a specified time

7.2.1 After the completion of the specified time, place the test panel in a horizontal position.

7.2.2 Pour approximately 0,5 g of the ballotini (4.1) onto the surface of the coating from a height of not less that 50 mm and not more than 150 mm.

NOTE – It is convenient to pour the ballotini down a glass tube of appropriate length and with an internal diameter of approximately 25 mm, in order to avoid undue spreading of the ballotini and thus enable further tests to be made, if necessary, on other areas of the same panel.

7.2.3 After 10 s, hold the panel at an angle of 20° to the horizontal and brush the coating lightly.

7.2.4 Examine the surface of the coating, using normal corrected vision. The coating is "surface-dry" if all the ballotini can be brushed away without damage to the surface.

7.3 Determination of surface-drying time

Prepare a number of similar coated test panels as specified in clause 6 and allow to dry as specified in 7.1. At appropriate intervals, starting shortly before the coating is expected to be surface-dry and using a different panel for each test (or an untouched area of the same panel, if the tube described in the Note to 7.2.2 is used) carry out the test as specified in 7.2 until the test shows the coating to be surface-dry. Record the time taken for the coating to become just surface-dry.

7.4 Determination of thickness of coating

Determine the thickness, in micrometres, of the dry coating by the method specified, using one of the procedures specified in ISO 2808.

8 TEST REPORT

The test report shall include the following information :

a) a reference to this International Standard or to a corresponding national standard;

b) the type and identification of the product under test;

c) the items of supplementary information referred to in the Introduction to this International Standard;

d) the national standard or other document supplying the information referred to in c) above;

e) any deviation, by agreement or otherwise, from the test procedure specified;

f) the result of the test; report, as required :

- *either* whether or not the coating was "surface-dry" after the specified time,
- *or* the "surface-drying time";

g) the date of the test.