INTERNATIONAL STANDARD 3248

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Paints and varnishes — Determination of the effect of heat

Peintures et vernis — Détermination des effets de la chaleur

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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.

International Standard ISO 3248 was drawn up by Technical Committee ISO/TC 35, *Paints and varnishes*, and circulated to the Member Bodies in May 1973.

It has been approved by the Member Bodies of the following countries :

Brazil	Iran	Spain
Bulgaria	Ireland	Sweden
Canada	Israel	Switzerland
Chile	Netherlands	Thailand
Czechoslovakia	New Zealand	Turkey
Egypt, Arab Rep. of	Poland	United Kingdom
France	Portugal	Yugoslavia
Germany	Romania	
India	South Africa, Rep. of	

No Member Body expressed disapproval of the document.

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Paints and varnishes — Determination of the effect of heat

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 the following documents :

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 1518, *Paints and varnishes — Scratch test.*

ISO 1519, *Paints and varnishes — Bend test (cylindrical mandrel).*

ISO 1520, *Paints and varnishes — Cupping test.*

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

ISO . . ., *Paints and varnishes — Rapid deformation test.*[1)]

It specifies an empirical test procedure for assessing the resistance of coatings of paints, varnishes and related products to change of gloss and/or colour, blistering, cracking and/or detachment from the substrate under conditions of moderately elevated temperature.

The method of test specified below 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 product under test or, where appropriate, shall be the subject of agreement between the interested parties.

a) Material and surface preparation of substrate.

b) Method of application of test coating to substrate, including duration and conditions of drying between coats in the case of a multicoat system.

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 the coated panel before testing (or conditions of stoving and ageing, if applicable).

e) What characteristics of the test coating are to be considered in evaluating the resistance properties of the coating.

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a general procedure for determining the resistance of single coatings or multicoat systems of paints or related products to the effect of heat.

The procedure is applicable to products intended for use on domestic radiators or other articles likely to be subjected to similar temperatures.

2 SAMPLING

A representative sample of the product to be tested (or of each product in the case of a multicoat system) shall be taken as specified in ISO 1512. The sample shall then be examined and prepared for testing as specified in ISO 1513.

3 TEST PANELS

3.1 Materials and dimensions

Unless otherwise specified, the test panels shall be of steel, tinplate, aluminium or glass as appropriate and shall comply with the requirements of ISO 1514. Unless otherwise specified, the panels shall be 150 mm × 100 mm.

3.2 Preparation and coating of panels

The test panels shall be prepared in accordance with ISO 1514, unless otherwise specified, and shall then be coated by the specified method with the product or system under test.

1) In preparation.

3.3 Drying and conditioning of the test panels

The coated test panels shall be dried (or stoved and aged) for the specified time and under the specified conditions and, unless otherwise specified, shall be conditioned at a temperature of 23 ± 2 °C and a relative humidity of 50 ± 5 % for a minimum of 16 h. The test procedure shall then be carried out as soon as possible.

3.4 Thickness of coating

The thickness, in micrometres, of the dry coating shall be determined by the method specified, using one of the procedures specified in ISO 2808.

4 PROCEDURE

4.1 Temperature and duration of test

Carry out the test procedure at a temperature of 125 ± 2 °C for a period of 24 h, unless otherwise agreed.

4.2 Determination

Place the panels in an oven with air circulation at the specified temperature, not less than 100 mm from the sides of the oven and not closer than 20 mm apart, and maintain them at that temperature for the specified time. The preferred method of ensuring even heating of the coated panels is to suspend them by means of fine wires. Alternatively, the panels may be supported in a rack made from suitable heat-insulating material or placed, paint side uppermost, on a piece of asbestos board resting on supports.

At the end of the specified time, remove the panels from the oven and allow them to cool to a temperature of 23 ± 2 °C. Examine the panels for change of colour or signs of other deterioration of the coating, by comparison with identically prepared, but unheated, panels.

When specified, both heated and unheated panels shall be subjected, not less than 16 h after completing the heating period, to one of the test procedures specified in ISO 1518, ISO 1519, ISO 1520, ISO . . .[1], or other agreed test procedures, and examined for compliance with the specified requirement.

5 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) a reference to any 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 in terms of the stated requirements;

g) the date of the test.

1) *Paints and varnishes — Rapid deformation test.* (In preparation.)