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First edition
2013-11-15

Paints and varnishes — Methods of exposure to laboratory light sources —

Part 1: General guidance

Peintures et vernis — Méthodes d'exposition à des sources lumineuses de laboratoire —

Partie 1: Lignes directrices générales



Reference number
ISO 16474-1:2013(E)

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Published in Switzerland

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Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	2
4.1 General.....	2
4.2 Significance.....	2
4.3 Use of accelerated tests with laboratory light sources.....	4
5 Requirements for laboratory exposure devices	4
5.1 Irradiance.....	4
5.2 Temperature.....	6
5.3 Humidity and wetting.....	8
5.4 Other requirements for the exposure device.....	9
6 Test specimens — Preparation, replicates, storage and conditioning	9
6.1 Handling of test specimens.....	9
6.2 Form, shape, preparation.....	9
6.3 Number of test specimens.....	10
6.4 Storage and conditioning.....	10
7 Test conditions and procedure	11
7.1 Set points for exposure conditions.....	11
7.2 Property measurements on test specimens.....	11
8 Periods of exposure and evaluation of test results	12
8.1 General.....	12
8.2 Sampling.....	12
8.3 Determination of changes in properties after exposure.....	12
8.4 Use of control materials.....	12
8.5 Use of results in specifications.....	12
9 Test report	13
Annex A (informative) Procedure for measuring the irradiance uniformity in the specimen exposure area	15
Annex B (informative) Factors that decrease the degree of correlation between artificial accelerated weathering or artificial accelerated irradiation exposures and actual-use exposures	18
Annex C (informative) Solar spectral irradiance standard	21
Bibliography	22

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 35, *Paints and varnishes*, Subcommittee SC 9, *General test methods for paints and varnishes*.

This first edition of ISO 16474-1, together with ISO 16474-2, cancels and replaces ISO 11341:2004, which has been technically revised. This first edition of ISO 16474-1, together with ISO 16474-3, cancels and replaces ISO 11507:2007, which has been technically revised.

ISO 16474 consists of the following parts, under the general title *Paints and varnishes — Methods of exposure to laboratory light sources*:

- *Part 1: General guidance*
- *Part 2: Xenon-arc lamps*
- *Part 3: Fluorescent UV lamps*
- *Part 4: Open-flame carbon-arc lamps*

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Introduction

Coatings from paints, varnishes and similar materials are often used outdoors or in indoor locations where they are exposed to solar radiation or to solar radiation behind glass for long periods. It is therefore very important to determine the effects of solar radiation, heat, moisture and other climatic stresses on the colour and other properties of polymers. Outdoor exposures to solar radiation and to solar radiation filtered by window glass are described in ISO 2810^[9]. However, it is often necessary to determine more rapidly the effects of light, heat and moisture on the physical, chemical and optical properties of coatings with artificial accelerated weathering or artificial accelerated irradiation exposures that use specific laboratory light sources. Exposures in these laboratory devices are conducted under more controlled conditions than found in natural environments and are intended to accelerate polymer degradation and product failures. Relating results from accelerated weathering or artificial accelerated irradiation exposures to those obtained in actual-use conditions is difficult because of variability in both types of exposure and because laboratory tests often do not reproduce all the exposure stresses experienced by coatings exposed in actual-use conditions. In addition, the increase in rate of degradation by the accelerated test compared with natural exposure conditions varies with the type of material and its formulation. No single laboratory exposure test can be specified as a total simulation of actual-use exposures. The relative durability of materials in actual-use exposures can be very different depending on the location of the exposure because of differences in solar radiation, time of wetness, temperature, pollutants and other factors. Therefore, even if results from specific accelerated weathering or artificial accelerated irradiation exposures are found to be useful for comparing the relative durability of materials exposed in a particular outdoor location or in particular actual-use conditions, it cannot be assumed that they will be useful for determining the relative durability of materials exposed in a different outdoor location or in different actual-use conditions.