

Paints and varnishes — Artificial weathering and exposure to artificial radiation — Exposure to filtered xenon-arc radiation

The European Standard EN ISO 11341:2004 has the status of a British Standard

ICS 87.040

National foreword

This British Standard is the official English language version of EN ISO 11341:2004. It is identical with ISO 11341:2004. It supersedes BS EN ISO 11341:1998 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee STI/10, Test methods for paints, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the *BSI Catalogue* under the section entitled “International Standards Correspondence Index”, or by using the “Search” facility of the *BSI Electronic Catalogue* or of British Standards Online.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, the EN ISO title page, the EN ISO foreword page, the ISO title page, pages ii to v, a blank page, pages 1 to 16, an inside back cover and a back cover.

The BSI copyright notice displayed in this document indicates when the document was last issued.

Amendments issued since publication

Amd. No.	Date	Comments

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 20 September 2004

© BSI 20 September 2004

ISBN 0 580 44454 6

English version

Paints and varnishes - Artificial weathering and exposure to
artificial radiation - Exposure to filtered xenon-arc radiation (ISO
11341:2004)

Peintures et vernis - Vieillissement artificiel et exposition au
rayonnement artificiel - Exposition au rayonnement filtré
d'une lampe à arc au xénon (ISO 11341:2004)

This European Standard was approved by CEN on 16 August 2004.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Foreword

This document (EN ISO 11341:2004) has been prepared by Technical Committee ISO/TC 35 "Paints and varnishes" in collaboration with Technical Committee CEN/TC 139 "Paints and varnishes", the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2005, and conflicting national standards shall be withdrawn at the latest by March 2005.

This document supersedes EN ISO 11341:1997.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Endorsement notice

The text of ISO 11341:2004 has been approved by CEN as EN ISO 11341:2004 without any modifications.

INTERNATIONAL STANDARD

ISO
11341

Second edition
2004-09-01

Paints and varnishes — Artificial weathering and exposure to artificial radiation — Exposure to filtered xenon-arc radiation

*Peintures et vernis — Vieillissement artificiel et exposition au
rayonnement artificiel — Exposition au rayonnement filtré d'une lampe
à arc au xénon*



Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	2
5 Required supplementary information	3
6 Apparatus	3
7 Sampling	7
8 Preparation of test panels	7
9 Procedure	8
10 Evaluation of ageing behaviour	10
11 Test report	10
Annex A (normative) Required supplementary information	12
Annex B (informative) Global solar spectral irradiance and spectral transmittance of window glass	13
Bibliography	16

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 11341 was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Subcommittee SC 9, *General test methods for paints and varnishes*.

This second edition cancels and replaces the first edition (ISO 11341:1994), which has been revised both technically and editorially. It also replaces ISO 2809:1976.

The main technical changes compared to ISO 11341:1994 are:

- a) Tables 1 and 2: The spectral irradiance distribution tables have been recalculated from the previous wavelength range of 300 nm to 800 nm to a wavelength range of 300 nm to 400 nm. New tolerances have been introduced based on spectral irradiance measurements made with typical xenon-arc instruments. In Table 2, the central values have been corrected using Table B.1 and B.2.
- b) Subclause 6.2: The required irradiance values have been recalculated from the previous wavelength range of 300 nm to 800 nm to a wavelength range of 300 nm to 400 nm. Additionally, narrow-band spectral irradiance values at 320 nm and 420 nm have been included.
- c) Subclause 6.2: An option for using high irradiance levels (up to about three times that of the sun) has been included.
- d) Subclauses 6.6 and 9.2: Both black-standard and black-panel thermometers are now included.
- e) Subclause 9.3: The test-chamber air temperature is now specified.
- f) Table 3: The values of the relative humidity in cycles A and B have been harmonized with those in cycles C and D.
- g) Clause 9.5: An additional wetting/drying cycle has been included for special applications.

Introduction

Coatings of paints, varnishes and similar materials (subsequently referred to simply as coatings) are exposed to artificial weathering, or to artificial radiation, in order to simulate in the laboratory the ageing processes which occur during natural weathering or during exposure tests under glass cover.

In contrast to natural weathering, artificial weathering involves a limited number of variables which can be controlled more readily and which can be intensified to produce accelerated ageing.

The ageing processes which occur during artificial and natural weathering cannot be expected to correlate with each other because of the large number of factors which influence these processes. Definite relationships can only be expected if the important parameters (distribution of the irradiance over the photochemically relevant part of the spectrum, temperature of the specimen, type of wetting and wetting cycle, and relative humidity) are the same in each case or if their effect on the coatings is known.