

Varnishes used for electrical insulation —

Part 2: Methods of test

The European Standard EN 60464-2:2001, with the incorporation of amendment A1:2006, has the status of a British Standard

ICS 29.035.99

National foreword

This British Standard was published by BSI. It is the UK implementation of EN 60464-2:2001, incorporating amendment A1:2006 and corrigendum December 2006. It is identical with IEC 60464-2:2001, incorporating amendment 1:2006. It supersedes BS 5629-2:1979 which is withdrawn.

The start and finish of text introduced or altered by IEC amendment is indicated in the text by tags A1 A1. Tags indicating changes to IEC text carry the number of the IEC amendment. For example, text altered by IEC amendment 1 is indicated in the text by A1 A1.

The UK participation in its preparation was entrusted by Technical Committee GEL/15, Insulating material, to Subcommittee GEL/15/3/7, Varnishes and resins.

A list of organizations represented on GEL/15/3/7 can be obtained on request to its secretary.

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 cannot confer immunity from legal obligations.

This British Standard, having been prepared under the direction of the Electrotechnical Sector Policy and Strategy Committee, was published under the authority of the Standards Policy and Strategy Committee on 6 December 2001

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Amendments issued since publication

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English version

Varnishes used for electrical insulation Part 2: Methods of test

Vernis utilisés pour l'isolation électrique
Partie 2: Méthodes d'essai

Elektroisolierlacke
Teil 2: Prüfverfahren

This European Standard was approved by CENELEC on 2001-10-01. CENELEC 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 CENELEC 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 CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Foreword

The text of document 15C/1224/FDIS, future edition 2 of IEC 60464-2, prepared by SC 15C, Specifications, of IEC TC 15, Insulating materials, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60464-2 on 2001-10-01.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2002-07-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2004-10-01

Annexes designated "normative" are part of the body of the standard.
Annexes designated "informative" are given for information only.
In this standard, annex ZA is normative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60464-2:2001 was approved by CENELEC as a European Standard without any modification.

Foreword to amendment A1

The text of document 15/253/FDIS, future amendment 1 to IEC 60464-2:2001, prepared by IEC TC 15, Electrical insulating materials, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as amendment A1 to EN 60464-2:2001 on 2006-02-01.

The following dates were fixed:

- latest date by which the amendment has to be
implemented at national level by publication of
an identical national standard or by endorsement (dop) 2006-11-01
- latest date by which the national standards conflicting
with the amendment have to be withdrawn (dow) 2009-02-01

This European Standard makes reference to International Standards. Where the International Standard referred to has been endorsed as a European Standard or a home-grown European Standard exists, this European Standard shall be applied instead. Pertinent information can be found on the CENELEC web site.

Endorsement notice

The text of amendment 1:2006 to the International Standard IEC 60464-2:2001 was approved by CENELEC as an amendment to the European Standard without any modification.

CONTENTS

INTRODUCTION	4
1 Scope	5
2 Normative references.....	5
3 Definitions	7
4 General notes on methods of test	7
5 Methods of test for undried and/or uncured varnishes	8
5.1 Flashpoint.....	8
5.2 Density	8
5.3 Viscosity.....	8
5.4 Content of non-volatile matter.....	8
5.5 Dilution ability.....	8
5.6 Stability of varnish in an open vessel	9
5.7 Drying and/or curing in thick layer.....	9
5.8 Effect of varnish on enamelled winding wires.....	11
5.9 pH of water or emulsion based varnish (Type W or Type E)	11
6 Methods of test for dried and/or cured varnishes.....	11
6.1 Test specimen	11
6.2 Mechanical properties.....	13
6.3 Thermal properties	13
6.4 Chemical properties.....	14
6.5 Electrical properties.....	16
6.6 Flash rusting of steel by water or emulsion based varnish (Type W or Type E)	19
6.7 Volatile organic compound content of water or emulsion based varnish (Type W or Type E)	19
6.8 Water content of water or emulsion based varnish (Type W or Type E)	19
Annex ZA (normative) Normative references to international publications with their corresponding European publications.....	21
Figure 1 – Test set-up for volume resistivity	19
Figure 2 – Example of electrode arrangement	20
Table 1 – Condition of the top side.....	10
Table 2 – Condition of the bottom side	10
Table 3 – Condition of the interior	10

INTRODUCTION

This part of IEC 60464 is one of a series which deals with varnishes used for electrical insulation. The series consists of three parts:

Part 1: Definitions and general requirements (IEC 60464-1);

Part 2: Methods of test (IEC 60464-2);

Part 3: Specifications for individual materials (IEC 60464-3).

VARNISHES USED FOR ELECTRICAL INSULATION –

Part 2: Methods of test

1 Scope

This part of IEC 60464 specifies methods of test to be used for testing varnishes used for electrical insulation. This includes methods of test to be applied before and others to be applied after drying and/or curing of the varnish.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 60464. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of IEC 60464 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60050(212):1990, *International Electrotechnical Vocabulary (IEV) – Chapter 212: Insulating solids, liquids and gases*

IEC 60068-2-10:1988, *Environmental testing – Part 2: Tests – Test J and guidance: Mould growth*

IEC 60093:1980, *Methods of test for volume resistivity and surface resistivity of solid electrical insulating materials*

IEC 60216 (all parts), *Guide for the determination of thermal endurance properties of electrical insulating materials*

IEC 60243-1:1998, *Electrical strength of insulating materials – Test methods – Part 1: Tests at power frequencies*

IEC 60250:1969, *Recommended methods for the determination of the permittivity and dielectric dissipation factor of electrical insulating materials at power, audio and radio frequencies including metre wavelengths*

IEC 60296:1982, *Specification for unused mineral insulating oils for transformers and switchgear*

IEC 60464 (all parts), *Varnishes used for electrical insulation*

IEC 60641-3-1:1992, *Specification for pressboard and presspaper for electrical purposes – Part 3: Specifications for individual materials – Sheet 1: Requirements for pressboard, types B.0.1, B.2.1, B.2.3, B.3.1, B.3.3, B.4.1, B.4.3, B.5.1, B.6.1 and B.7.1*

IEC 60851-4:1996, *Methods of test for winding wires – Part 4: Chemical properties*

IEC 61033:1991, *Test methods for the determination of bond strength of impregnating agents to an enamelled wire substrate*

IEC 61099:1992, *Specifications for unused synthetic organic esters for electrical purposes*

ISO 291:1997, *Plastics – Standard atmospheres for conditioning and testing*

ISO 558:1980, *Conditioning and testing – Standard atmospheres – Definitions*

ISO 760:1978, *Determination of water – Karl Fischer Method (General method)*

ISO 1144:1973, *Textiles – Universal system for designating linear density (Tex System)*

ISO 1513:1992, *Paints and varnishes – Examination and preparation of samples for testing*

ISO 1514:1993, *Paints and varnishes – Standard panels for testing*

ISO 1519:1973, *Paints and varnishes – Bend test (cylindrical mandrel)*

ISO 1520:1999, *Paints and varnishes – Cupping test*

ISO 1523:1983, *Paints, varnishes, petroleum and related products – Determination of flash point – Closed cup equilibrium method*

ISO 11890-1:2000, *Paints and varnishes – Determination of volatile organic component (VOC) content – Part 1: Difference method*

ISO 11890-2:2000, *Paints and varnishes – Determination of volatile organic component (VOC) content – Part 2: Gas chromatographic method*

ISO 2078:1993, *Textile glass – Yarns – Designation*

ISO 2113:1996, *Reinforcement fibres – Woven fabrics – Basis for a specification*

ISO 2431:1993, *Paints and varnishes – Determination of flow time by use of flow cups*

ISO 2555:1989, *Plastics – Resins in the liquid state or as emulsions or dispersions – Determination of apparent viscosity by the Brookfield Test method*

ISO 2578:1993, *Plastics – Determination of time-temperature limits after prolonged exposure to heat*

ISO 2592:2000, *Determination of flash and fire points – Cleveland open cup method*

ISO 2808:1997, *Paints and varnishes – Determination of film thickness*

ISO 2811 (all parts), *Paints and varnishes – Determination of density*

ISO 2812-1:1993, *Paints and varnishes – Determination of resistance to liquids – Part 1: General methods*

ISO 3219:1993, *Plastics – Polymers/resins in the liquid state or as emulsions or dispersions – Determination of viscosity using a rotational viscometer with defined shear rate*