SLOVENSKI STANDARD
oSIST prEN IEC 60455-2:2023

01-januar-2023

Reaktivne zmesi na osnovi smole, ki se uporabljajo za električno izolacijo - 2. del: Preskusne metode

Resin based reactive compounds used for electrical insulation - Part 2: Methods of test

Reaktionsharzmassen für die Elektroisolierung - Teil 2: Prüfverfahren

Composés réactifs à base de résines utilisés comme isolants électriques - Partie 2: Méthodes d'essai

Ta slovenski standard je istoveten z: **prEN IEC 60455-2:2022**

ICS:

29.035.01	Izolacijski materiali na splošno	Insulating materials in general

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COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER: **IEC 60455-2 ED4**	
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IEC TC 15 : SOLID ELECTRICAL INSULATING MATERIALS	
SECRETARIAT: United States of America	SECRETARY: Mr Solomon Chiang
OF INTEREST TO THE FOLLOWING COMMITTEES: TC 112	PROPOSED HORIZONTAL STANDARD: ☐ Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: ☐ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☐ SAFETY	
☒ SUBMITTED FOR CENELEC PARALLEL VOTING	☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING
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TITLE:

Resin based reactive compounds used for electrical insulation - Part 2: Methods of test

PROPOSED STABILITY DATE: 2028

NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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RESIN BASED REACTIVE COMPOUNDS USED FOR ELECTRICAL INSULATION –

Part 2: Methods of test

FOREWORD

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International Standard IEC 60455-2 has been prepared by IEC technical committee 15: Solid electrical insulating materials.

This third edition cancels and replaces the second edition published in 1998. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) Introduction of test methods related to IEC 60455-3-8;

b) Additional and updated test methods for resins

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160 The text of this International Standard is based on the following documents:

Draft	Report on voting
XX/XX/FDIS	XX/XX/RVD

161

162 Full information on the voting for its approval can be found in the report on voting indicated in
163 the above table.

164 The language used for the development of this International Standard, is English.

165 This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in
166 accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available
167 at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are
168 described in greater detail at www.iec.ch/standardsdev/publications.

169 The committee has decided that the contents of this document will remain unchanged until the
170 stability date indicated on the IEC website under webstore.iec.ch in the data related to the
171 specific document. At this date, the document will be

172 • reconfirmed,
173 • withdrawn,
174 • replaced by a revised edition, or
175 • amended.

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INTRODUCTION

This part of IEC 60455 is one of a series which deals with solvent-free resin based reactive compounds and their components used for electrical insulation.

The series consists of three parts:

– Part 1: Definitions and general requirements (IEC 60455-1);

– Part 2: Methods of test (IEC 60455-2);

– Part 3: Specifications for individual materials (IEC 60455-3).

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RESIN BASED REACTIVE COMPOUNDS USED FOR ELECTRICAL INSULATION –

Part 2: Methods of test

1 Scope

This part of IEC 60455 specifies methods of test to be used for testing resin based reactive compounds, their components and cured compounds used for electrical insulation.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050 (all parts), International Electrotechnical Vocabulary (available at http://www.electropedia.org)

IEC 60068-2-10:2005, Environmental testing – Part 2-10: 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 60112:2003, Method for the determination of the proof and the comparative tracking indices of solid insulating materials

IEC 60216 (all parts), Electrical insulating materials – Thermal endurance properties

IEC 60243-1:2013, 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 60296:2012, Fluids for electrotechnical applications – Unused mineral insulating oils for transformers and switchgear

IEC 60426:2007, Electrical insulating materials – Determination of electrolytic corrosion caused by insulating materials – Test methods

IEC 60455-1:1998, Resin based reactive compounds used for electrical insulation – Part 1: Definitions and general requirements

IEC 60455-3 (all parts), Resin based reactive compounds used for electrical insulation – Part 3: Specifications for individual materials

IEC 60455-3-8:2013, Resin based reactive compounds used for electrical insulation – Part 3: Specifications for individual materials – Sheet 8: Resins for cable accessories

IEC 60695-11-10:2013, Fire hazard testing – Part 11-10: Test flames – 50 W horizontal and vertical flame test methods

IEC 60814:1997, Insulating liquids – Oil-impregnated paper and pressboard – Determination of water by automatic coulometric Karl Fischer titration

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

IEC 61099:2010, Insulating liquids – Specifications for unused synthetic organic esters for electrical purposes

ISO 37:2011, Rubber, vulcanized or thermoplastic – Determination of tensile stress-strain properties

ISO 62:2008, Plastics – Determination of water absorption

ISO 75 (all parts), Plastics and ebonite – Determination of temperature of deflection under load

ISO 175:2010, Plastics – Determination of the effects of liquid chemicals, including water

239 ISO 178:2010, Plastics – Determination of flexural properties

ISO 179-1:2010, Plastics – Determination of Charpy impact properties – Part 1: None instrumented impact test

ISO 179-2:1997, Plastics – Determination of Charpy impact properties – Part 2: Instrumented impact test

ISO 291, Plastics – Standard atmospheres for conditioning and testing

ISO 306:2013, Plastics – Thermoplastic materials – Determination of Vicat softening temperature (VST)

ISO 527 (all parts), Plastics – Determination of tensile properties

ISO 584:1982, Plastics – Unsaturated polyester resins – Determination of reactivity at 80 degrees C (conventional method)

ISO 604:2002, Plastics – Determination of compressive properties

ISO 868:2003, Plastics and ebonite – Determination of indentation hardness by means of a durometer (Shore hardness)

ISO 1183-1:2012, Plastics – Methods for determining the density of non-cellular plastics – Part 1: Immersion method, liquid pycnometer method and titration method

ISO 1513:2010, Paints and varnishes – Examination and preparation of samples for testing

ISO 1523:2002, Paints, varnishes, petroleum and related products – Determination of flashpoint – Closed cup equilibrium method

ISO 1675:1985, Plastics – Liquid resins – Determination of density by the pycnometer method

ISO 2039-1:1993, Plastics – Determination of hardness – Part 1: Ball indentation method

ISO 2114:1996, Plastics – Unsaturated polyester resins – Determination of partial acid value and total acid value

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

ISO 2535:1997, Plastics – Unsaturated polyester resins – Measurement of gel time at 25 degrees C

ISO 2554:1997, Plastics – Unsaturated polyester resins – Determination of hydroxyl value

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

ISO 2592:1973, Petroleum products – Determination of flash and fire points – Cleveland open cup method

ISO 3001:1997, Plastics – Epoxide compounds – Determination of epoxide equivalent

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

ISO 3451-1:1997, Plastics – Determination of ash – Part 1: General methods

ISO 3521:1997, Plastics – Unsaturated polyester and epoxy resins – Determination of overall volume shrinkage

ISO 3679:1983, Paints, varnishes, petroleum and related products – Determination of flashpoint – Rapid equilibrium method

ISO 4573:1978, Plastics – Epoxide resins and glycidyl esters – Determination of inorganic chlorine

ISO 4583:1998, Plastics – Epoxide resins and related materials – Determination of easily saponifiable chlorine

ISO 4615:1979, Plastics – Unsaturated polyesters and epoxide resins – Determination of total chlorine content

ISO 4625:1980, Binders for paints and varnishes – Determination of softening point – Ring-and-ball method

ISO 4895, Plastics – Liquid epoxy resins – Determination of tendency to crystallize

ISO 7056, Plastics laboratory ware – Beakers

ISO 9396:1997, Plastics – Phenolic resins – Determination of the gel time at a given temperature using automatic apparatus

ISO 11357-2:1999; Plastics – Differential scanning calorimetry (DSC) – Part 2: Determination of glass transition temperature

ISO 11359-2:1999, Plastics – Thermomechanical analysis (TMA) – Part 2: Determination of coefficient of linear thermal expansion and glass transition temperature

ISO 11359-3:2002, Plastics – Thermomechanical analysis (TMA) – Part 3: Determination of penetration temperature