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STN	**Elektroizolačné systémy. Tepelné hodnotenie modifikácií zavedených EIS. Časť 2: EIS s vinutiami so šablónovými cievkami.**	**STN EN 61858-2** 34 7391

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 10/14

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EN 61858-2

May 2014

ICS 29.080.30

English Version

Electrical insulation systems - Thermal evaluation of modifications to an established electrical insulation system (EIS) - Part 2: Form-wound EIS (IEC 61858-2:2014)

Systèmes d'isolation électrique - Évaluation thermique des modifications apportées à un système d'isolation électrique (SIE) éprouvé - Partie 2: Système d'isolation électrique à enroulements préformés (CEI 61858-2:2014)

Elektrische Isoliersysteme - Thermische Bewertung von Veränderungen an einem erprobten elektrischen Isoliersystem (EIS) - Teil 2: EIS mit Flachdraht-Wicklungen (IEC 61858-2:2014)

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN 61858-2:2014 E

Foreword

The text of document 112/253/CDV, future edition 1 of IEC 61858-2, prepared by IEC/TC 112 "Evaluation and qualification of electrical insulating materials and systems" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61858-2:2014.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2014-12-19
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2017-03-19

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Endorsement notice

The text of the International Standard IEC 61858-2:2014 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60172	NOTE	Harmonized as EN 60172.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60034-18-31	2012	Rotating electrical machines - Part 18-31: Functional evaluation of insulation systems - Test procedures for form-wound windings - Thermal evaluation and classification of insulation systems used in rotating machines	EN 60034-18-31	2012
IEC 60085	2007	Electrical insulation - Thermal evaluation and designation	EN 60085	2008
IEC 60216-5	-	Electrical insulating materials - Thermal endurance properties - Part 5: Determination of relative thermal endurance index (RTE) of an insulating material	EN 60216-5	-
IEC 60216-6	-	Electrical insulating materials - Thermal endurance properties - Part 6: Determination of thermal endurance indices (TI and RTE) of an insulating material using the fixed time frame method	EN 60216-6	-
IEC 60317	Series	Specifications for particular types of winding wires	EN 60317	Series
IEC 60317-16 [1)]	-	Specifications for particular types of winding wires - Part 16: Polyester enamelled rectangular copper wire, class 155	EN 60317-16 [1)]	-
IEC 60317-17	-	Specifications for particular types of winding wires - Part 17: Polyvinyl acetal enamelled rectangular copper wire, class 105	EN 60317-17	-
IEC 60317-18	-	Specifications for particular types of winding wires - Part 18 : Polyvinyl acetal enamelled rectangular copper wire, class 120	EN 60317-18	-
IEC 60317-27	-	Specifications for particular types of winding wires - Part 27: Paper tape covered rectangular copper wire	EN 60317-27	-

[1)] Withdrawn publication.

Publication	Year	Title	EN/HD	Year
IEC 60317-28	-	Specifications for particular types of winding wires - Part 28: Polyesterimide enamelled rectangular copper wire, class 180	EN 60317-28	-
IEC 60317-29	-	Specifications for particular types of winding wires - Part 29: Polyester or polyesterimide overcoated with polyamide-imide enamelled rectangular copper wire, class 200	EN 60317-29	-
IEC 60317-30 [1)]	-	Specifications for particular types of winding wires - Part 30: Polyimide enamelled rectangular copper wire, class 220	EN 60317-30	-
IEC 60317-31	-	Specifications for particular types of winding wires - Part 31: Glass-fibre wound resin or varnish impregnated, bare or enamelled rectangular copper wire, temperature index 180	EN 60317-31	-
IEC 60317-32	-	Specifications for particular types of winding wires - Part 32: Glass-fibre wound, resin or varnish impregnated, bare or enamelled rectangular copper wire, temperature index 155	EN 60317-32	-
IEC 60317-33	-	Specifications for particular types of winding wires - Part 33: Glass-fibre wound, resin or varnish impregnated, bare or enamelled rectangular copper wire, temperature index 200	EN 60317-33	-
IEC 60317-39	-	Specifications for particular types of winding wires - Part 39: Glass-fibre braided resin or varnish impregnated, bare or enamelled rectangular copper wire, temperature index 180	EN 60317-39	-
IEC 60317-40	-	Specifications for particular types of winding wires - Part 40: Glass-fibre braided resin or varnish impregnated, bare or enamelled rectangular copper wire, temperature index 200	EN 60317-40	-
IEC 60317-44	-	Specifications for particular types of winding wires - Part 44: Aromatic polyimide tape wrapped rectangular copper wire, class 240	EN 60317-44	-
IEC 60317-47	-	Specifications for particular types of winding wires - Part 47: Aromatic polyimide enamelled rectangular copper wire, class 240	EN 60317-47	-
IEC 60317-53	-	Specifications for particular types of winding wires - Part 53: Aromatic polyamide (aramid) tape wrapped rectangular copper wire, temperature index 220	EN 60317-53	-

[1)] Withdrawn publication.

Publication	Year	Title	EN/HD	Year
IEC 60317-58	-	Specifications for particular types of winding wires - Part 58: Polyamide-imide enamelled rectangular copper wire, class 220	EN 60317-58	-
IEC 60505	-	Evaluation and qualification of electrical insulation systems	EN 60505	-

IEC 61858-2

Edition 1.0 2014-02

INTERNATIONAL STANDARD

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Electrical insulation systems – Thermal evaluation of modifications to an established electrical insulation system (EIS) – Part 2: Form-wound EIS

Systèmes d'isolation électrique – Évaluation thermique des modifications apportées à un système d'isolation électrique (SIE) éprouvé – Partie 2: Système d'isolation électrique à enroulements préformés

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTRICAL INSULATION SYSTEMS – THERMAL EVALUATION OF MODIFICATIONS TO AN ESTABLISHED ELECTRICAL INSULATION SYSTEM (EIS) –

Part-2: Form-wound EIS

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 61858-2 has been prepared by IEC technical committee 112: Evaluation and qualification of electrical insulating materials and systems.

The text of this standard is based on the following documents:

CDV	Report on voting
112/253/CDV	112/274/RVC

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 61858 series, published under the general title *Electrical insulation systems – Thermal evaluation of modifications to an established insulation system (EIS)*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

This International Standard describes procedures for the evaluation of changes to an established electrical insulation system (EIS) for form-wound electro technical devices and the effect of these changes on the thermal classification of the established EIS.

This Part 2 of IEC 61858 is for form-wound EIS. Part 1 of IEC 61858 addresses modifications of wire-wound EIS.

General principles for evaluation and qualification of EIS can be found in IEC 60505. Unless the procedures of this standard indicate otherwise, the principles of IEC 60505 should be followed.

ELECTRICAL INSULATION SYSTEMS – THERMAL EVALUATION OF MODIFICATIONS TO AN ESTABLISHED ELECTRICAL INSULATION SYSTEM (EIS) –

Part-2: Form-wound EIS

1 Scope

This part of IEC 61858 lists the required test procedures for qualification of modifications of an established electrical insulation system (EIS) with respect to its thermal classification. This standard is applicable to EIS used in form-wound electrotechnical devices. The test procedures are comparative in that the performance of a candidate EIS is compared to that of a reference EIS, which has proven service experience in accordance with IEC 60505 or has been evaluated by one of the procedures given in IEC 60085 and IEC 60034-18-31.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60085:2007, *Electrical insulation – Thermal evaluation and designatio*n

IEC 60034-18-31:2012, *Rotating electrical machines – Part 18-31: Functional evaluation of insulation systems – Test procedures for form-wound windings – Thermal evaluation and classification of insulation systems used in rotating machines*

IEC 60216-5, *Electrical insulating materials – Thermal endurance properties – Part 5: Determination of relative thermal endurance index (RTE) of an insulating material*

IEC 60216-6, *Electrical insulating materials – Thermal endurance properties – Part 6: Determination of thermal endurance indices (TI and RTI) of an insulating material using the fixed time frame method*

IEC 60317 (all parts), *Specifications for particular types of winding wires*

IEC 60317-16, *Specifications for particular types of winding wires – Part 16: Polyester enamelled rectangular copper wire, class 155*
(withdrawn)[1]

IEC 60317-17, *Specifications for particular types of winding wires – Part 17: Polyvinyl acetal enamelled rectangular copper wire, class 105*

IEC 60317-18, *Specifications for particular types of winding wires – Part 18: Polyvinyl acetal enamelled rectangular copper wire, class 120*

IEC 60317-27, *Specifications for particular types of winding wires – Part 27: Paper tape covered rectangular copper wire*

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1 Withdrawn in 2012.

IEC 60317-28, *Specifications for particular types of winding wires – Part 28: Polyesterimide enamelled rectangular copper wire, class 180*

IEC 60317-29, *Specifications for particular types of winding wires – Part 29: Polyester or polyesterimide overcoated with polyamide-imide enamelled rectangular copper wire, class 200*

IEC 60317-30, *Specifications for particular types of winding wires – Part 30: Polyimide enamelled rectangular copper wire, class 220*
(withdrawn)[2]

IEC 60317-31, *Specifications for particular types of winding wires – Part 31: Glass-fibre wound, polyester or polyesterimide varnish-trated, bare or enamelled rectangular copper wire, temperature index 180*

IEC 60317-32, *Specifications for particular types of winding wires – Part 32: Glass-fibre wound resin or varnish impregnated, bare or enamelled rectangular copper wire, temperature index 155*

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IEC 60317-40, *Specifications for particular types of winding wires – Part 40: Glass-fibre braided, silicone varnish-tratead, bare or enamelled rectangular copper wire, temperature index 200*

IEC 60317-44, *Specifications for particular types of winding wires – Part 44: Aromatic polyimide tape wrapped rectangular copper wire, class 240*

IEC 60317-47, *Specifications for particular types of winding wires – Part 47: Aromatic polyimide enamelled rectangular copper wire, class 240*

IEC 60317-53, *Specifications for particular types of winding wires – Part 53: Aromatic polyamide (aramid) tape wrapped rectangular copper wire, temperature index 220*

IEC 60317-58, *Specifications for particular types of winding wires – Part 58: Polyamide-imide enamelled rectangular copper wire, class 220*

IEC 60505, *Evaluation and qualification of electrical insulation systems*

2 Withdrawn in 2009.