

STN	Elektroizolačné systémy. Tepelné hodnotenie modifikácií zavedených EIS. Časť 1: EIS vinutých vinutí.	STN EN 61858-1 34 7391
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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

Obsahuje: EN 61858-1:2014, IEC 61858-1:2014

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EN 61858-1

May 2014

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Supersedes EN 61858:2008

English Version

Electrical insulation systems - Thermal evaluation of
modifications to an established electrical insulation system (EIS)
- Part 1: Wire-wound winding EIS
(IEC 61858-1:2014)

Systèmes d'isolation électrique - Évaluation thermique des
modifications apportées à un système d'isolation électrique
(SIE) éprouvé - Partie 1: Système d'isolation électrique à
enroulements à fils
(CEI 61858-1:2014)

Elektrische Isoliersysteme - Thermische Bewertung von
Veränderungen an einem erprobten elektrischen
Isoliersystem (EIS) - Teil 1: EIS mit Runddraht-Wicklungen
(IEC 61858-1:2014)

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Europäisches Komitee für Elektrotechnische Normung

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Foreword

The text of document 112/252/CDV, future edition 1 of IEC 61858-1, 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 61858-1:2014.

The following dates are fixed:

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document have to be withdrawn

This document supersedes EN 61858:2008.

EN 61858-1:2014 includes the following significant technical changes with respect to EN 61858:2008:

- a) this part is specifically for wire-wound winding EIS;
- b) new figures and charts support the contents.

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In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60034-18-21	NOTE	Harmonized as EN 60034-18-21.
IEC 60317-15	NOTE	Harmonized as EN 60317-15.

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 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60085	2007	Electrical insulation - Thermal evaluation and designation	EN 60085	-
IEC 60172	-	Test procedure for the determination of the temperature index of enamelled winding wires	EN 60172	-
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 60317-1	-	Specifications for particular types of winding wires - Part 1: Polyvinyl acetal enamelled round copper wire, class 105		-
IEC 60317-2	-	Specifications for particular types of winding wires - Part 2: Solderable polyurethane enamelled round copper wire, class 130, with a bonding layer	EN 60317-2	-
IEC 60317-3	-	Specifications for particular types of winding wires - Part 3: Polyester enamelled round copper wire, class 155		-
IEC 60317-4	-	Specifications for particular types of winding wires - Part 4: Solderable polyurethane enamelled round copper wire, class 130	EN 60317-4	-
IEC 60317-8	-	Specifications for particular types of winding wires - Part 8: Polyesterimide enamelled round copper wire, class 180	EN 60317-8	-
IEC 60317-12	-	Specifications for particular types of winding wires - Part 12: Polyvinyl acetal enamelled round copper wire, class 120	EN 60317-12	-

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60317-13	-	Specifications for particular types of winding wires - Part 13: Polyester or polyesterimide overcoated with polyamide-imide enamelled round copper wire, class 200	EN 60317-13	-
IEC 60317-19 ¹⁾	-	Specifications for particular types of winding wires - Part 19: Solderable polyurethane enamelled round copper wire overcoated with polyamide, class 130	EN 60317-19	-
IEC 60317-20	-	Specifications for particular types of winding wires - Part 20: Solderable polyurethane enamelled round copper wire, class 155	EN 60317-20	-
IEC 60317-21	-	Specifications for particular types of winding wires - Part 21: Solderable polyurethane enamelled round copper wire overcoated with polyamide, class 155	EN 60317-21	-
IEC 60317-22	-	Specifications for particular types of winding wires - Part 22 : Polyester or polyesterimide enamelled round copper wire overcoated with polyamide, class 180	EN 60317-22	-
IEC 60317-23	-	Specifications for particular types of winding wires - Part 23: Solderable polyesterimide enamelled round copper wire, class 180	EN 60317-23	-
IEC 60317-25	-	Specifications for particular types of winding wires - Part 25: Polyester or polyesterimide overcoated with polyamide-imide enamelled round aluminium wire, class 200	EN 60317-25	-
IEC 60317-26	-	Specifications for particular types of winding wires - Part 26: Polyamide-imide enamelled round copper wire, class 200	EN 60317-26	-
IEC 60317-34 ¹⁾	-	Specifications for particular types of winding wires - Part 34: Polyester enamelled round copper wire, class 130 L	EN 60317-34 ¹⁾	-
IEC 60317-35	-	Specifications for particular types of winding wires - Part 35: Solderable polyurethane enamelled round copper wire, class 155, with a bonding layer	EN 60317-35	-
IEC 60317-36	-	Specifications for particular types of winding wires - Part 36: Solderable polyesterimide enamelled round copper wire, class 180, with a bonding layer	EN 60317-36	-

¹⁾ Withdrawn publication.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60317-37	-	Specifications for particular types of winding wires - Part 37: Polyesterimide enamelled round copper wire, class 180, with a bonding layer	EN 60317-37	-
IEC 60317-38	-	Specifications for particular types of winding wires - Part 38: Polyester or polyesterimide overcoated with polyamide-imide enamelled round copper wire, class 200, with a bonding layer	EN 60317-38	-
IEC 60317-42	-	Specifications for particular types of winding wires - Part 42: Polyester-amide-imide enamelled round copper wire, class 200	EN 60317-42	-
IEC 60317-43	-	Specifications for particular types of winding wires - Part 43: Aromatic polyimide tape wrapped round copper wire, class 240	EN 60317-43	-
IEC 60317-46	-	Specifications for particular types of winding wires - Part 46: Aromatic polyimide enamelled round copper wire, class 240	EN 60317-46	-
IEC 60317-48	-	Specifications for particular types of winding wires - Part 48: Glass-fibre wound resin or varnish impregnated, bare or enamelled round copper wire, temperature index 155	EN 60317-48	-
IEC 60317-50	-	Specifications for particular types of winding wires - Part 50: Glass-fibre wound silicone resin or varnish impregnated, bare or enamelled round copper wire, temperature index 200	EN 60317-50	-
IEC 60317-51	-	Specifications for particular types of winding wires - Part 51: Solderable polyurethane enamelled round copper wire, class 180	EN 60317-51	-
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	-
IEC 60317-54 ¹⁾	-	Specifications for particular types of winding wires - Part 54: Polyester enamelled round copper wire, class 155L	-	-
IEC 60317-55	-	Specifications for particular types of winding wires - Part 55: Solderable polyurethane enamelled round copper wire overcoated with polyamide, Class 180	EN 60317-55	-

¹⁾ Withdrawn publication.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60317-57	-	Specifications for particular types of winding wires - Part 57: Polyamide-imide enamelled round copper wire, class 220	EN 60317-57	-
IEC 60505	-	Evaluation and qualification of electrical insulation systems	EN 60505	-
IEC 61033	-	Test methods for the determination of bond strength of impregnating agents to an enamelled wire substrate	EN 61033	-
IEC 61857	Series	Electrical insulation systems - Procedures for thermal evaluation	EN 61857	Series
IEC 61857-1	2008	Electrical insulation systems - Procedures for thermal evaluation - Part 1: General requirements - Low-voltage	EN 61857-1	2009
IEC 61857-21	-	Electrical insulation systems - Procedures for thermal evaluation - Part 21: Specific requirements for general-purpose models - Wire-wound applications	EN 61857-21	-
IEC 62317-2	-	Ferrite cores - Dimensions - Part 2: Pot-cores for use in telecommunications, power supply, and filter applications	EN 62317-2	-



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INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Electrical insulation systems – Thermal evaluation of modifications to an established electrical insulation system (EIS) –
Part 1: Wire-wound winding EIS**

**Systèmes d'isolation électrique – Évaluation thermique des modifications
apportées à un système d'isolation électrique (SIE) éprouvé –
Partie 1: Système d'isolation électrique à enroulements à fils**



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IEC 61858-1

Edition 1.0 2014-02

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Electrical insulation systems – Thermal evaluation of modifications to an established electrical insulation system (EIS) –
Part 1: Wire-wound winding EIS**

**Systèmes d'isolation électrique – Évaluation thermique des modifications apportées à un système d'isolation électrique (SIE) éprouvé –
Partie 1: Système d'isolation électrique à enroulements à fils**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRICAL INSULATION SYSTEMS –
THERMAL EVALUATION OF MODIFICATIONS TO
AN ESTABLISHED ELECTRICAL INSULATION SYSTEM (EIS) –****Part 1: Wire-wound winding EIS****FOREWORD**

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International Standard IEC 61858-1 has been prepared by IEC technical committee 112: Evaluation and qualification of electrical insulating materials and systems.

This first edition of IEC 61858-1 cancels and replaces the third edition of IEC 61858, published in 2008. It constitutes a technical and editorial revision.

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

- a) this part is specifically for wire-wound winding EIS;
- b) new figures and charts support the contents.

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

CDV	Report on voting
112/252/CDV	112/275/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 electrical 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.

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INTRODUCTION

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

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

The thermal classification of an EIS is established either by known service life, in accordance with IEC 60505, or evaluated in accordance with the IEC 61857 series.

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

Part 1: Wire-wound winding 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 wire-wound winding 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 the IEC 61857 series.

2 Normative references

Les documents suivants sont cités en référence de manière normative, en intégralité ou en partie, dans le présent document et sont indispensables pour son application. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

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

IEC 60172, *Test procedure for the determination of the temperature index of enamelled winding wires*

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

IEC 60317-1, *Specifications for particular types of winding wires – Part 1: Polyvinyl acetal enamelled round copper wire, class 105*

IEC 60317-2, *Specifications for particular types of winding wires – Part 2: Solderable polyurethane enamelled round copper wire, class 130, with a bonding layer*

IEC 60317-3, *Specifications for particular types of winding wires – Part 3: Polyester enamelled round copper wire, class 155*

IEC 60317-4, *Specifications for particular types of winding wires – Part 4: Solderable polyurethane enamelled round copper wire, class 130*

IEC 60317-8 *Specifications for particular types of winding wires – Part 8: Polyesterimide enamelled round copper wire, class 180*

IEC 60317-12, *Specifications for particular types of winding wires – Part 12: Polyvinyl acetal enamelled round copper wire, class 120*

IEC 60317-13, *Specifications for particular types of winding wires – Part 13: Polyester or polyesterimide overcoated with polyamide-imide enamelled round copper wire, class 200*

IEC 60317-19, *Specifications for particular types of winding wires – Part 19: Solderable polyurethane enamelled round copper wire overcoated with polyamide, class 130* (withdrawn)¹

IEC 60317-20, *Specifications for particular types of winding wires – Part 20: Solderable polyurethane enamelled round copper wire, class 155*

IEC 60317-21, *Specifications for particular types of winding wires – Part 21: Solderable polyurethane enamelled round copper wire overcoated with polyamide, class 155*

IEC 60317-22, *Specifications for particular types of winding wires – Part 22: Polyester or polyesterimide enamelled round copper wire overcoated with polyamide, class 180*

IEC 60317-23, *Specifications for particular types of winding wires – Part 23: Solderable polyesterimide enamelled round copper wire, class 180*

IEC 60317-25, *Specifications for particular types of winding wires – Part 25: Polyester or polyesterimide overcoated with polyamide-imide enamelled round aluminium wire, class 200*

IEC 60317-26, *Specifications for particular types of winding wires – Part 26: Polyamide-imide enamelled round copper wire, class 200*

IEC 60317-34, *Specifications for particular types of winding wires – Part 34: Polyester enamelled round copper wire, class 130 L* (withdrawn)¹

IEC 60317-35, *Specifications for particular types of winding wires – Part 35: Solderable polyurethane enamelled round copper wire, class 155, with a bonding layer*

IEC 60317-36, *Specifications for particular types of winding wires – Part 36: Solderable polyesterimide enamelled round copper wire, class 180, with a bonding layer*

IEC 60317-37, *Specifications for particular types of winding wires – Part 37: Polyesterimide enamelled round copper wire, class 180, with a bonding layer*

IEC 60317-38, *Specifications for particular types of winding wires – Part 38: Polyester or polyesterimide overcoated with polyamide-imide enamelled round copper wire, class 200, with a bonding layer*

IEC 60317-42, *Specifications for particular types of winding wires – Part 42: Polyester-amide-imide enamelled round copper wire, class 200*

IEC 60317-43, *Specifications for particular types of winding wires – Part 43: Aromatic polyimide tape wrapped round copper wire, class 240*

IEC 60317-46, *Specifications for particular types of winding wires – Part 46: Aromatic polyimide enamelled round copper wires, class 240*

IEC 60317-48, *Specifications for particular types of winding wires – Part 48: Glass-fibre wound resin or varnish impregnated, bare or enamelled round copper wire, temperature index 155*

¹ Withdrawn.

IEC 60317-50, *Specifications for particular types of winding wires – Part 50: Glass-fibre wound silicone resin or varnish impregnated, bare or enamelled round copper wire, temperature index 200*

IEC 60317-51, *Specifications for particular types of winding wires – Part 51: Solderable polyurethane enamelled round copper wire, class 180*

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

IEC 60317-54, *Specifications for particular types of winding wires – Part 54: Polyester enamelled round copper wire, class 155 L*
(withdrawn)²

IEC 60317-55, *Specifications for particular types of winding wires – Part 55: Solderable polyurethane enamelled round copper wire overcoated with polyamide, class 180*

IEC 60317-57, *Specifications for particular types of winding wires – Part 57: Polyamide-imide enamelled round copper wire, class 220*

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

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

IEC 61857 (all parts), *Electrical insulation systems – Procedures for thermal evaluation*

IEC 61857-1:2008, *Electrical insulation systems – Procedures for thermal evaluation – Part 1: General requirements – Low voltage*

IEC 61857-21, *Electrical insulation systems – Procedures for thermal evaluation – Part 21: Specific requirements for general purpose models – Wire-wound applications*

IEC 62317-2, *Ferrite cores – Dimensions – Part 2: Pot-cores for use in telecommunications, power supply, and filter applications.*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN

² Withdrawn.