SLOVENSKI STANDARD
SIST-TP CLC IEC/TR 62271-307:2019

01-oktober-2019

Visokonapetostne stikalne in krmilne naprave - 307. del: Navodilo za podaljšanje veljavnosti preskusov tipa za izmenične (AC) stikalne in krmilne naprave v kovinskih ohišjih in ohišjih iz trdih izolacijskih materialov za naznačene napetosti nad 1 kV do vključno 52 kV (CLC IEC/TR 62271-307:2019)

High-voltage switchgear and controlgear - Part 307: Guidance for the extension of validity of type tests of AC metal and solid-insulation enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV (CLC IEC/TR 62271-307:2019)

Hochspannungs-Schaltgeräte und -Schaltanlagen - Teil 307: Leitfaden für die Erweiterung des Geltungsbereichs von Typprüfungen von metall- und isolierstoffgekapselten Wechselstrom-Schaltanlagen für Bemessungsspannungen über 1 kV und bis einschließlich 52 kV (CLC IEC/TR 62271-307:2019)

Appareillage à haute tension - Partie 307: Lignes directrices pour l'extension de validité des essais de type d'appareillages en courant alternatif sous enveloppe métallique et d’isolation solide pour tensions assignées supérieures à 1 kV et jusqu'à 52 kV inclus (CLC IEC/TR 62271-307:2019)

Ta slovenski standard je istoveten z: **CLC IEC/TR 62271-307:2019**

ICS:

29.130.10	Visokonapetostne stikalne in krmilne naprave	High voltage switchgear and controlgear

SIST-TP CLC IEC/TR 62271-307:2019 **en**

TECHNICAL REPORT

RAPPORT TECHNIQUE

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English Version

High-voltage switchgear and controlgear - Part 307: Guidance for the extension of validity of type tests of AC metal and solid-insulation enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV (IEC/TR 62271-307:2015)

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This Technical Report was approved by CENELEC on 2019-06-17.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

This document (CLC IEC/TR 62271-307:2019) consists of the text of IEC/TR 62271-307:2015 prepared by SC 17C "Assemblies" of IEC/TC 17 "High-voltage switchgear and controlgear".

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

Endorsement notice

The text of the International Standard IEC/TR 62271-307:2015 was approved by CENELEC as a European Standard without any modification.

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

IEC 60865-1	NOTE	Harmonized as EN 60865-1
IEC 60071-1:2006	NOTE	Harmonized as EN 60071-1:2006 (not modified)
IEC 60071-1:2006/A1:2010	NOTE	Harmonized as EN 60071-1:2006/A1:2010 (not modified)

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where 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.

Publication	Year	Title	EN/HD	Year
IEC 60050-441	1984	International Electrotechnical Vocabulary. Switchgear, controlgear and fuses	-	-
+ A1	2000		-	-
IEC 62271-1	2007	High-voltage switchgear and controlgear -- Part 1: Common specifications	EN 62271-1	2008
+ A1	2011		+ A1	2011
IEC 62271-200	2011	High-voltage switchgear and controlgear - Part 200: AC metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV	EN 62271-200	2012
IEC 62271-201	2014	High-voltage switchgear and controlgear - Part 201: AC solid-insulation enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV	EN 62271-201	2014

IEC TR 62271-307

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colour inside

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CONTENTS

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HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

Part 307: Guidance for the extension of validity of type tests of AC metal and solid-insulation enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV

FOREWORD

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IEC TR 62271-307, which is a technical report, has been prepared by subcommittee 17C: Assemblies, of IEC technical committee 17: High-voltage switchgear and controlgear.

This Technical Report is to be read in conjunction with IEC 62271-200 published in 2011 and IEC 62271-201 published in 2014.

The text of this Technical Report is based on the following documents:

Enquiry draft	Report on voting
17C/625/DTR	17C/632/RVC

Full information on the voting for the approval of this Technical Report 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 62271 series, published under the general title *High-voltage switchgear and controlgear*, 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.

HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

Part 307: Guidance for the extension of validity of type tests of AC metal and solid-insulation enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV

1 General

1.1 Scope

This Part of IEC 62271, which is a Technical Report, refers to prefabricated metal-enclosed and solid-insulation enclosed (both hereinafter called enclosed) switchgear and controlgear assemblies for alternating current of rated voltages above 1 kV and up to and including 52 kV as specified in IEC 62271-200 and IEC 62271-201, and to other equipment included in the same enclosure with any possible mutual influence.

This Technical Report may be used for the extension of the validity of type tests performed on one test object with a defined set of ratings to another switchgear assembly of the same family with a different set of ratings or different arrangements of components. It supports the selection of representative test objects composed of functional units of a family of switchgear and controlgear aimed at the optimization of type tests in order to perform a consistent conformity assessment.

This Technical Report utilises a combination of sound technical and physical principles, manufacturer and user experience and calculations to establish guidance for the extension of validity of type tests, covering various design and rating aspects.

1.2 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 60050-441:1984, *International Electrotechnical Vocabulary. Switchgear, controlgear and fuses*
IEC 60050-441:1984/AMD1:2000

IEC 62271-1:2007, *High-voltage switchgear and controlgear – Part 1: Common specifications*
IEC 62271-1:2007/AMD1:2011

IEC 62271-200:2011, *High-voltage switchgear and controlgear – Part 200: AC metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV*

IEC 62271-201:2014, *High-voltage switchgear and controlgear – Part 201: AC solid-insulation enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV*

2 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-441, IEC 62271-1, IEC 62271-200, IEC 62271-201, as well as the following apply.

NOTE Some standard terms and definitions are recalled here for ease of reference.

2.101
switchgear and controlgear
general term covering switching devices and their combination with associated control, measuring, protective and regulating equipment, also assemblies of such devices and equipment with associated interconnections, accessories, enclosures and supporting structures

[SOURCE: IEC 60050-441:1984, 441-11-01]

2.102
family of switchgear and controlgear
functional units designed to be physically combined in assemblies and providing a range of ratings and characteristics (e.g. current, voltage, degree of protection)

2.103
functional unit (of an assembly)
a part of an assembly of switchgear and controlgear comprising all the components of the main circuits and auxiliary circuits that contribute to the fulfilment of a single function

Note 1 to entry: Functional units may be distinguished according to the function for which they are intended e.g.: incoming unit, through which electrical energy is normally fed into the assembly, outgoing unit through which electrical energy is normally supplied to one or more external circuits.

[SOURCE: IEC 60050-441:1984, 441-13-04]

2.104
assembly (of switchgear and controlgear)
a combination of switchgear and/ or controlgear completely assembled with all internal electrical and mechanical interconnections

Note 1 to entry: An assembly is comprised of one or more functional units

[SOURCE: IEC 60050-441:1984, 441-12-01, modified – addition of a note to entry.]

2.105
component
essential part of the high voltage or earthing circuits of metal and solid-insulation enclosed switchgear and controlgear which serves a specific function

Note 1 to entry: Examples of components include: circuit-breaker, disconnector, switch, fuse, instrument transformer, bushing, bus-bar.

[SOURCE: IEC 62271-200:2011, 3.113, modified – rephrasing of the definition and addition of a note to entry.]

2.106
main circuit
all the high voltage conductive parts of metal and solid-insulation enclosed switchgear and controlgear included in a circuit which is intended to carry the rated normal current

[SOURCE: IEC 60050-441:1984, 441-13-02, modified – rephrasing of the definition.]

2.107
test object
item submitted to a test, including any accessories, unless otherwise specified

[SOURCE: IEC 60050-151:2001, 151-16-28]

2.108
extension (of validity) criterion
criterion based on the design parameters, which can be applied to validate the performance of an untested assembly based on the positive results of a test performed on another assembly for a specific characteristic

2.109
homogeneous group
group of functional units of a family of switchgear and controlgear having design parameters which allows for a specific characteristic extending the validity of the result of a type test performed on one member of the group to the rest of the group

2.110
clearance
the distance between two conductive parts along a string stretched the shortest way between these conductive parts

[SOURCE: IEC 60050-441:1984, 441-17-31]

2.111
clearance between phases
the clearance between any conductive parts of adjacent phases

[SOURCE: IEC 60050-441:1984, 441-17-32; modified – modification of the term.]

2.112
clearance to earth
the clearance between any conductive parts and any parts which are earthed or intended to be earthed

[SOURCE: IEC 60050-441:1984, 441-17-33]

2.113
centre distance between phases
distance between the centres of adjacent phase conductors

3 Use of extension criteria

3.1 General

Because of the variety of types of functional units, ratings and possible combinations of components, it is not practical to perform type tests with all the possible assemblies of enclosed switchgear and controlgear. Therefore, the performance of a particular assembly may be evaluated by reference to type test reports of other assemblies of the same family of switchgear and controlgear. Subclauses 4.1 to 4.6 provide for each kind of type test (or characteristic) a non-exhaustive list of design parameters, which should be analysed for extension of validity.

The analysis should be based on sound technical and physical principles and may be supported by calculations, if applicable.

Each design parameter of the assembly to be assessed listed in the respective column of the tables in 4.1 to 4.6 should be compared with the design parameter of the already type tested assembly applying the acceptance criteria provided in the same tables. The affirmation of every extension criterion allows a test performed on one assembly having specific characteristics to be applied to another assembly of the same family with different characteristics (e.g. some of the ratings or dimensions). For example, the affirmation of