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Irish Standard
I.S. EN 62271-107:2012

High-voltage switchgear and controlgear -- Part 107: Alternating current fused circuit-switchers for rated voltages above 1 kV up to and including 52 kV (IEC 62271-107:2012 (EQV))

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SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces:	*This document is based on:*	*Published:*
EN 62271-107:2005	EN 62271-107:2012 EN 62271-107:2005	3 August, 2012 28 October, 2005

This document was published
under the authority of the NSAI and comes into effect on:

10 August, 2012

ICS number:
29.130.10

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 62271-107

August 2012

ICS 29.130.10

Supersedes EN 62271-107:2005

English version

High-voltage switchgear and controlgear - Part 107: Alternating current fused circuit-switchers for rated voltages above 1 kV up to and including 52 kV

(IEC 62271-107:2012)

Appareillage à haute tension -
Partie 107: Circuits-switchers fusiblés pour courant alternatif de tension assignée supérieure à 1 kV et jusqu'à 52 kV inclus
(CEI 62271-107:2012)

Hochspannungs-Schaltgeräte und -Schaltanlagen -
Teil 107: Wechselstrom-Leistungsschalter-Sicherungs-Kombinationen für Bemessungsspannungen über 1 kV bis einschließlich 52 kV
(IEC 62271-107:2012)

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Ref. No. EN 62271-107:2012 E

Foreword

The text of document 17A/997/FDIS, future edition 2 of IEC 62271-107, prepared by SC 17A, "High-voltage switchgear and controlgear", of IEC TC 17, "Switchgear and controlgear" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62271-107:2012.

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)	2013-04-03
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2015-07-03

This document supersedes EN 62271-107:2005.

EN 62271-107:2012 includes the following significant technical changes with respect to EN 62271-107:2005:

– the reference to EN 60694 has been changed to EN 62271-1;

– the new clauses and subclauses from EN 62271-1 have been added and where necessary new wording has been provided:

- 4.11 Rated filling levels for insulation and/or operation;
- 5.19 X-ray emission;
- 5.20 Corrosion;
- 6.10 Additional tests on auxiliary and control circuits;
- 6.11 X-radiation test procedure for vacuum interrupters;
- 12 Influence of the product on the environment;

– the normative references have been updated: EN 60265-1 to EN 62271-103, IEC 60787 to IEC/TR 60787, IEC 60466 to EN 62271-201, and IEC/TR 60787 was moved to the bibliography;

– the figures and tables have been placed in the document where they are first cited;

– the numbering of figures and tables has been changed to obtain the correct order;

– the definition of NSDD was deleted. This definition is included in EN 62271-1;

– the acceptance criteria have been aligned with 6.101.4 of EN 62271-103:2011;

– the various provisions expressed about "extension of the validity of type tests" have been grouped under 6.103: some of the rules were duplicated in Clauses 6 and 8, and it seems better fitted to deal within each type test sub-clause only with the type test to be performed. Conditions have not been changed, but the wording is clearer;

– new numbering of subclauses in Clauses 8 and 9 to avoid conflict with clauses from EN 62271-1.

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This International Standard is to be read in conjunction with EN 62271-1:2008, to which it refers and which is applicable unless otherwise specified. In order to simplify the indication of corresponding requirements, the same numbering of clauses and subclauses is used as in EN 62271-1. Amendments to these clauses and subclauses are given under the same numbering, whilst additional subclauses, are numbered from 101.

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

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The text of the International Standard IEC 62271-107:2012 was approved by CENELEC as a European Standard without any modification.

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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 60282-1	2009	High-voltage fuses - Part 1: Current-limiting fuses	EN 60282-1	2009
IEC 62271-1	2007	High-voltage switchgear and controlgear - Part 1: Common specifications	EN 62271-1	2008
IEC 62271-100	2008	High-voltage switchgear and controlgear - Part 100: Alternating current circuit-breakers	EN 62271-100	2009
IEC 62271-102 + corr. April + corr. February + corr. May	2001 2002 2005 2003	High-voltage switchgear and controlgear - Part 102: Alternating current disconnectors and earthing switches	EN 62271-102 + corr. July + corr. March	2002 2008 2005
IEC 62271-103	2011	High-voltage switchgear and controlgear - Part 103: Switches for rated voltages above 1 kV up to and including 52 kV	EN 62271-103	2011
IEC 62271-105	-	High-voltage switchgear and controlgear - Part 105: Alternating current switch-fuse combinations	EN 62271-105	-
IEC 62271-200	-	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	-
IEC 62271-201	-	High-voltage switchgear and controlgear - Part 201: AC insulation-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV	EN 62271-201	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

Part 107: Alternating current fused circuit-switchers for rated voltages above 1 kV up to and including 52 kV

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 62271-107 has been prepared by subcommittee 17A: High voltage switchgear and controlgear, of IEC technical committee 17: Switchgear and controlgear.

This second edition cancels and replaces the first edition, published in 2005. It constitutes a technical revision.

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

– the reference to IEC 60694 has been changed to IEC 62271-1;
– the new clauses and subclauses from IEC 62271-1 have been added and where necessary new wording has been provided;
  - 4.11 Rated filling levels for insulation and/or operation
  - 5.19 X-ray emission
  - 5.20 Corrosion

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- 6.10 Additional tests on auxiliary and control circuits
- 6.11 X-radiation test procedure for vacuum interrupters
- 12 Influence of the product on the environment

– the normative references have been updated: IEC 60265-1 to IEC 62271-103, IEC 60787 to IEC/TR 60787, IEC 60466 to IEC 62271-201, and IEC/TR 60787 was moved to the bibliography;

– the figures and tables have been placed in the document where they are first cited;

– the numbering of figures and tables has been changed to obtain the correct order;

– the definition of NSDD was deleted. This definition is included in IEC 62271-1;

– the acceptance criteria have been aligned with 6.101.4 of IEC 62271-103:2011;

– the various provisions expressed about "extension of the validity of type tests" have been grouped under 6.103: some of the rules were duplicated in Clauses 6 and 8, and it seems better fitted to deal within each type test sub-clause only with the type test to be performed. Conditions have not been changed, but the wording is clearer;

– new numbering of subclauses in Clauses 8 and 9 to avoid conflict with clauses from IEC 62271-1.

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

FDIS	Report on voting
17A/997/FDIS	17A/1004/RVD

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.

This International Standard is to be read in conjunction with IEC 62271-1:2007, to which it refers and which is applicable unless otherwise specified. In order to simplify the indication of corresponding requirements, the same numbering of clauses and subclauses is used as in IEC 62271-1. Amendments to these clauses and subclauses are given under the same numbering, whilst additional subclauses, are numbered from 101.

A list of all the parts in the IEC 62271 series, 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 maintenance result 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
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HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

Part 107: Alternating current fused circuit-switchers for rated voltages above 1 kV up to and including 52 kV

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1 General

1.1 Scope

Subclause 1.1 of IEC 62271-1:2007 is not applicable, and is replaced as follows.

This part of IEC 62271 applies to three-pole operated units for distribution systems that are functional assemblies of a circuit-switcher and current-limiting fuses designed so as to be capable of:

– breaking, at the rated recovery voltage, any load or fault current up to and including the rated short-circuit breaking current;
– making, at the rated voltage, circuits to which the rated short-circuit breaking current applies.

They are intended to be used for circuits or applications requiring only a normal mechanical and electrical endurance capability. Such applications cover protection of HV/LV transformers for instance, but exclude distribution lines or cables, as well as motor circuits and capacitor bank circuits.

Short-circuit conditions with low currents, up to the fused circuit-switcher rated take-over current, are dealt with by supplementary devices (strikers, relays, etc.), properly arranged, tripping the circuit-switcher. Fuses are incorporated in order to ensure that the short-circuit breaking capacity of the device is above that of the circuit-switcher.

NOTE 1 In this standard the term "fuse" is used to designate either the fuse or the fuse-link where the general meaning of the text does not result in ambiguity.

This standard applies to fused circuit-switchers designed with rated voltages above 1 kV up to and including 52 kV for use on three-phase alternating current systems of either 50 Hz or 60 Hz. Comparison with other existing switching devices is provided in Clause 8.

NOTE 2 Other circuit-switchers exist; see reference [1][1].

Devices that require a dependent manual operation are not covered by this standard.

Fuses are covered by IEC 60282-1.

Earthing switches forming an integral part of a circuit-switcher are covered by IEC 62271-102.

Installation in enclosure, if any, is covered either by IEC 62271-200 or by IEC 62271-201.

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

[1] Numbers between brackets refer to the Bibliography.

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