NSAI
Standards

Irish Standard
I.S. EN 50180-1:2015

Bushings above 1 kV up to 52 kV and from 250 A to 3,15 kA for liquid filled transformers - Part 1: General requirements for bushings

I.S. EN 50180-1:2015

Incorporating amendments/corrigenda/National Annexes issued since publication:

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I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

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This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

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Údarás um Chaighdeáin Náisiúnta na hÉireann

National Foreword

I.S. EN 50180-1:2015 is the adopted Irish version of the European Document EN 50180-1:2015, Bushings above 1 kV up to 52 kV and from 250 A to 3,15 kA for liquid filled transformers - Part 1: General requirements for bushings

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 50180-1

October 2015

ICS 29.080.20

Supersedes EN 50180:2010

English Version

Bushings above 1 kV up to 52 kV and from 250 A to 3,15 kA for liquid filled transformers - Part 1: General requirements for bushings

Traversées de tensions supérieures à 1 kV jusqu'à 52 kV et de 250 A à 3,15 kA pour transformateurs immergés dans un liquide - Partie 1: Exigences générales relatives aux traversées

Durchführungen über 1 kV bis 52 kV und von 250 A bis 3,15 kA für flüssigkeitsgefüllte Transformatoren - Teil 1: Allgemeine Anforderungen für Durchführungen

This European Standard was approved by CENELEC on 2015-08-10. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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 50180-1:2015 E

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European foreword

This document (EN 50180-1:2015) has been prepared by CLC/ TC 36A "Insulated bushings".

The following dates are fixed:

• latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2016-08-10
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2018-08-10

This document supersedes EN 50180:2010.

The only editorial modifications that have been done in EN 50180-1:2015 compared to EN 50180:2010 are the following:

1) EN 50180:2010 has been turned into EN 50180-1:2015 to allow the addition of two new parts;

2) an editorial correction of view "Y" on page 34 related to Figures A.16 and A.17 has been made.

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.

EN 50180 "*Bushings above 1 kV up to 52 kV and from 250 A to 3,15 kA for liquid filled transformers*" consists of the following parts:

– *Part 1: General requirements for bushings*;

– *Part 2: Requirement for bushing components*;

– *Part 3: Requirements for bushing fixations*.

Introduction

The object of this European Standard is to specify the requirements to ensure interchangeability of bushings having highest voltages above 1 kV up to 52 kV and rated currents from 250 A up to 3 150 A for insulating liquid filled transformers.

1 Scope

This European Standard is applicable to ceramic and resin insulated bushings having highest voltages above 1 kV up to 52 kV, rated currents from 250 A up to 3 150 A and frequencies from 15 Hz up to 60 Hz for insulating liquid filled transformers.

This European Standard establishes essential dimensions, to ensure interchangeability of bushings and to ensure adequate mounting and interchangeability of mating plug-in separable connectors of equivalent ratings.

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.

EN 60137, *Insulated bushings for alternating voltages above 1 000 V (IEC 60137)*

EN 60672-3, *Ceramic and glass-insulating materials — Part 3: Specifications for individual materials (IEC 60672-3)*

EN 62155, *Hollow pressurized and unpressurized ceramic and glass insulators for use in electrical equipment with rated voltages greater than 1 000 V (IEC 62155)*

IEC/TS 60815 (all parts), *Selection and dimensioning of high-voltage insulators intended for use in polluted conditions*

NOTE It is highly advised to minimize the impact of bushings on the environment during all phases of their life (including manufacturing, operation during service life, dismantling after their end of life and disposal or recycling).

IEC Guide 109 and EN 62542 can be used as helpful reference.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
open type bushing
bushing, one end of which is immersed in an insulating liquid with the other end in ambient air and exposed or not exposed to external atmospheric conditions

3.2
plug-in type bushing
bushing, one end of which is immersed in an insulating medium and the other end designed to receive a separable insulated cable connector without which the bushing cannot function

3.3
separable connector
fully insulated termination permitting the connection and disconnection of the cable to and from the mating plug-in type bushing

3.4
interface type
bushing dimensions that insure mechanical and electrical interchangeability of bushing and separable connector of similar rating and type. Each interface type is designated by a letter or a number