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

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NATIONAL FOREWORD

See Eesti standard EVS-EN 50180-1:2015 sisaldab Euroopa standardi EN 50180-1:2015 ingliskeelset teksti.	This Estonian standard EVS-EN 50180-1:2015 consists of the English text of the European standard EN 50180-1:2015.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 09.10.2015.	Date of Availability of the European standard is 09.10.2015.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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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

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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.

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

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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.

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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