

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

EESTI STANDARDI EESSÕNA

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.
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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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Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Contents

European foreword	4
Introduction	5
1 Scope	6
2 Normative references	6
3 Terms and definitions	6
4 Requirements	7
4.1 Application	7
4.2 Standard values of maximum voltage (U_m)	7
4.3 Standard values of rated current (I_r)	7
4.4 Compliance	7
4.5 Common dimensions	7
4.6 Detail dimensions and creepage distances of open type bushings	9
4.7 Detail dimensions of plug-in type bushings	21
Annex A (normative) Detail drawings of porcelain	27
Bibliography	38

Figures

Figure 1 — Common dimensions for open and plug-in type bushings	8
Figure 2 — 250 A types 12 to 36 kV	9
Figure 3 — 630 A types 12 to 36 kV	11
Figure 4 — 1 250 A types 12 to 36 kV	13
Figure 5 — 2 000 A – 3 150 A types 12 to 36 kV	15
Figure 6 — 250 A – 630 A types 52 kV	17
Figure 7 — 1 250 A – 2 000 A – 3 150 A types 52 kV	19
Figure 8 — Outside cone plug-in type bushings	21
Figure 9 - Details of outside cone plug-in type bushings	23
Figure 10 — Inside cone plug-in type bushings	25
Figure 11 — Details of inside cone plug-in type bushings	26
Figure A.1 — Insulator (item N°1), type 1	27
Figure A.3 — Insulator (Item n°1), type 3	27
Figure A.2 — Insulator (Item n°1), type 2	27
Figure A.4 — Insulator (Item n°1), type 4	28
Figure A.5 — Insulator (Item n°1), type 5	28
Figure A.6 — Insulator (Item n°1), type 6	29
Figure A.7 — Insulator (Item n°1), type 7	29
Figure A.8 — Insulator (Item n°1), type 8	30
Figure A.9 — Insulator (Item n°1), type 9	30
Figure A.10 — Insulator (Item n°1), type 21	31
Figure A.11 — Insulator (Item n°1), type 22	31
Figure A.12 — Insulator (Item n°1), type 23 & 23M	32
Figure A.13 — Insulator (Item n°1), type 24 & 24M	32
Figure A.14 — Insulator (Item n°1), type 25	33
Figure A.15 — Insulator (Item n°1), type 26	33
Figure A.16 — Insulator (Item n°1), type 27&27M	34
Figure A.17 — Insulator (Item n°1), type 28 & 28M	34
Figure A.18 — Insulator (Item n°1), type 29	35
Figure A.19 — Insulator (Item n°1), type 30	36
Figure A.20 — Insulator (Item n°1), type 31	36
Figure A.21 — Adjusting ring	38

Tables

Table 1 — Common dimensions for open and plug-in type bushings	8
Table 2 — Dimensions, 250 A types 12 to 36 kV	10

Table 3 — List of components, 250 A types 12 to 36 kV	10
Table 4 — Dimensions, 630 A types 12 to 36 kV	11
Table 5 — List of components - 630 A types 12 to 36 kV	12
Table 6 — Dimensions, 1 250 A types 12 to 36 kV	14
Table 7 — List of components, 1 250 A types 12 to 36 kV	14
Table 8 — Dimensions, 2 000 A – 3 150 A types 12 to 36 kV	16
Table 9 — List of components 2 000 A – 3 150 A types 12 to 36 kV	16
Table 10 — Dimensions, 250 A - 630 A types 52 kV	18
Table 11 — List of components 250 A - 630 A types 52 kV	18
Table 12 — Dimensions, 1 250 A – 2 000 A – 3 150 A types 52 kV	20
Table 13 — List of components 1 250 A – 2000 A – 3 150 A types 52 kV	20
Table 14 — Interface dimensions	22
Table 15 — Bushing dimensions	24
Table 16 — Interface dimensions	25
Table 17 — Interface dimensions	26

European foreword

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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.

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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