

## **Outdoor bushings for 24 kV and 36 kV and for 5 kA and 8 kA, for liquid filled transformers**

Outdoor bushings for 24 kV and 36 kV and for 5 kA  
and 8 kA, for liquid filled transformers

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 50243:2003 sisaldab Euroopa standardi EN 50243:2002 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 05.02.2003 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 50243:2003 consists of the English text of the European standard EN 50243:2002.</p> <p>This document is endorsed on 05.02.2003 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b></p> <p>This standard is applicable to ceramic insulated outdoor bushings for highest voltages for equipment of 24 kV and 36 kV, with rated currents of 5 kA and 8 kA and frequencies from 15 Hz up to 60 Hz for insulating liquid filled transformers.</p>	<p><b>Scope:</b></p> <p>This standard is applicable to ceramic insulated outdoor bushings for highest voltages for equipment of 24 kV and 36 kV, with rated currents of 5 kA and 8 kA and frequencies from 15 Hz up to 60 Hz for insulating liquid filled transformers.</p>
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English version

**Outdoor bushings for 24 kV and 36 kV and for 5 kA and 8 kA,  
for liquid filled transformers**

Traversées d'extérieur pour  
24 kV et 36 kV et pour 5 kA et 8 kA,  
pour transformateurs  
à remplissage de liquide

Durchführungen für Freiluft,  
24 kV und 36 kV sowie 5 kA und 8 kA,  
für flüssigkeitsgefüllte Transformatoren

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**CENELEC**

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

**Central Secretariat: rue de Stassart 35, B - 1050 Brussels**

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## Foreword

This European Standard was prepared by the Technical Committee CENELEC TC 36A, Insulated bushings.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50243 on 2001-10-01.

The following dates were fixed:

- latest date by which the EN has to be implemented  
at national level by publication of an identical  
national standard or by endorsement (dop) 2003-02-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2005-02-01

Annexes designated "normative" are part of the body of the standard.  
In this standard, annex A is normative.

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## Introduction

The object of this standard is to specify the requirements of outdoor bushings for highest voltages for equipment 24 kV and 36 kV and for rated currents 5 kA and 8 kA.

## 1 Scope

This standard is applicable to ceramic insulated outdoor bushings for highest voltages for equipment of 24 kV and 36 kV, with rated currents of 5 kA and 8 kA and frequencies from 15 Hz up to 60 Hz for insulating liquid filled transformers.

This standard establishes dimensions to ensure interchangeability and adequate mounting of bushings.

Two types of construction are specified, type A and type B, both types for highest voltages for equipment 24 kV and 36 kV and rated currents of 5 kA and 8 kA. The mechanical stresses of the conductor tube make the difference between type A and type B. The conductor tube of type A is axially and radially fixed in the top of the bushing. The inner line terminal of the transformer can be flexible and without any special support for the lower end of the conductor tube.

In case of type B, the conductor tube is only radially fixed in the top of the bushing. In that case, a rigid support has to be mounted to fix the lower end of the conductor tube (for example, in combination with a drip proofed sealing end). The drip proofed sealing end is often required in the service requirements. In this case, it is not possible to use type A because of the existing double fixation. Therefore, both bushing types A and B have to be specified.

The condition for the usage of type B is that the drip proofed sealing end is able to withstand the mechanical stress in axial direction.

## 2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies (including amendments).

EN 60137	1996	Insulated bushings for alternating voltages above 1 kV (IEC 60137:1995)
EN 60672-3	1997	Ceramic and glass-insulating materials - Part 3: Specifications for individual materials (IEC 60672-3:1997)
HD 329 S1	1977	Tests on hollow insulators for use in electrical equipment (IEC 60233:1974)
IEC 60815	1986	Guide for the selection of insulators in respect of polluted conditions
ISO 261		ISO general-purpose metric screw threads - General plan
ISO 286-2		ISO system of limits and fits - Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts
ISO 1101		Technical drawings - Geometrical tolerancing - Tolerancing of form, orientation, location and run-out - Generalities, definitions, indications on drawings
ISO 1302		Technical drawings - Method of indicating surface texture
ISO 2768		General tolerances