BS EN 50180-3:2015+A1:2017

BSI Standards Publication

Bushings above 1 kV up to 52 kV and from 250 A to 3,15 kA for liquid filled transformers

Part 3: Requirements for bushing fixations

bsi.

National foreword

This British Standard is the UK implementation of EN 50180-3:2015, including amendment A1:2017. It supersedes BS EN 50180-3:2015, which is withdrawn.

The text of CENELEC amendment A1:2017 has been provided in its entirety at the beginning of this document. BSI's policy of providing consolidated content remains unchanged; however, in the interest of expediency, in this instance BSI have chosen to the collate the relevant content at the beginning of this document.

The UK participation in its preparation was entrusted to Technical Committee PEL/36, Insulators for power systems.

A list of organizations represented on this committee can be obtained on request to its secretary.

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

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Compliance with a British Standard cannot confer immunity from legal obligations.

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Amendments/corrigenda issued since publication

Date	Text affected
31 March 2018	Implementation of CENELEC amendment A1:2017

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 50180-3:2015/A1

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English Version

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This amendment A1 modifies the European Standard EN 50180-3:2015; it was approved by CENELEC on 2017-05-10. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document [EN 50180-3:2015/A1:2017] 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)	2018-05-10
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2020-05-10

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.

1 Modification to Clause 1, Scope

Delete the last two paragraphs:

"For a better understanding of additional information some dimension from EN 50180-1 are repeated in this European Standard.

This European Standard was extended for fastenings of bushings for a highest voltage of 52 kV.".

2 Modifications to 4.1, Fixation for bushings

Add the following paragraph after Figure 1 and before Table 1:

"The following Table 1 shows the type of fixation to be used for bushings with a voltage from 12 kV to 52 kV.".

Replace the whole Table 1 with the following one:

"

Table 1 — Dimensions for fixation components, 12 kV to 52 kV

d_1	d_2	d_5	l_1	Flange ring designation	Clamping paw		Bushing 12 kV-36 kV	Bushing 52 kV
					Type	Number		
111^{0}_{-7}	123^{+1}_{-1}	M10	55	A	E	4	250 A	
128^{0}_{-8}	140^{+1}_{-1}	M10	55	B	E	6	630 A	
165^{0}_{-10}	180^{+2}_{-2}	M12	65	**C1**	F	6	1 250A	
	185^{+2}_{-2}			**C2**				
185^{0}_{-11} [a] 183^{0}_{-7} [b]	200^{+2}_{-2}	M12	65	**D1**	F	6	2 000 A 3 150 A	**250 A - 3 150 A**
	205^{+2}_{-2}			**D2**				

[a] Tolerances for porcelains of bushings U_m 12 kV to 36 kV.

[b] Tolerances for porcelains of bushings U_m 52 kV.

Remark: Diameter d_2 may deviate from EN 50180–1:2015 (Figures 4 and 5) for bushings 1 250 A to 3 150 A and U_m 12 kV to 36 kV and for bushings U_m 52 kV. To enable interchangeability the required diameter shall be agreed between purchaser and manufacturer.

".

3 Modifications to 4.2, Details for fixations

Replace the Designation text above Figure 3 with:

"

Designation: **Flange ring B**

Flange ring C1 and C2

Flange ring D1 and D2".

Replace the title of Figure 3 with:

"

Figure 3 — Flange ring B for bushing 630 A, 12 kV – 36 kV
Flange ring C1 and C2 for bushing 1 250 A, 12 kV – 36 kV
Flange ring D1 and D2 for bushing 2 000 A - 3 150 A, 12 kV – 36 kV and for bushings 250 A – 3 150 A, 52 kV
(Note: different shapes are allowed)

".

Replace the whole Table 2 with the following one:

"

Flange ring	d_2 [a]	d_3	d_4	d_6 [a]	f	h	s	r_1	r_2	r_3
B	140	150	173	130	5°	10,5	1,5	15	10	5,5
C1	180	194	222	166	9°	13	3	18	15	7
C2	185			170						
D1	200	214	242	186	9°	13	3	18	15	7
D2	205			190						

[a] Diameter d_2 and d_6 may deviates from EN 50180–1:2015 (Figure 4 and 5) for bushings 1 250 A to 3 150 A and U_m 12 kV to 36 kV. To enable interchangeability the required diameter shall be agreed between purchaser and manufacturer.

".

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European foreword

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• 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 supplements EN 50180-1:2015 by design details for fastenings and their components with dimensions for bushings, which are of importance for utilities concerning compatibility.

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*.

1 Scope

This European Standard should be considered in factual context with EN 50180-1 only. Constructional details for fastenings and their details are supplementing EN 50180-1. This information is of importance for utilities concerning compatibility.

For a better understanding of additional information some dimension from EN 50180-1 are repeated in this European Standard.

This European Standard was extended for fastenings of bushings for a highest voltage of 52 kV.