

BS EN 61914:2009



BSI British Standards

Cable cleats for electrical installations

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National foreword

This British Standard is the UK implementation of EN 61914:2009. It is identical to IEC 61914:2009. It supersedes BS EN 50368:2003 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PEL/213, Cable management.

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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English version

Cable cleats for electrical installations (IEC 61914:2009)

Brides de câbles
pour installations électriques
(CEI 61914:2009)

Kabelhalter
für elektrische Installationen
(IEC 61914:2009)

This European Standard was approved by CENELEC on 2009-04-01. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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CENELEC

European Committee for Electrotechnical Standardization
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Foreword

The text of document 23A/588/FDIS, future edition 1 of IEC 61914, prepared by SC 23A, Cable management systems, of IEC TC 23, Electrical accessories, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61914 on 2009-04-01.

This European Standard supersedes EN 50368:2003.

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) 2010-01-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2012-04-01

NOTE The following print types are used:

- requirements: in roman type;
- *test specifications: in italic type;*
- notes: in small roman type.

Annex ZA has been added by CENELEC.

The contents of the corrigendum of May 2009 have been included in this copy.

Endorsement notice

The text of the International Standard IEC 61914:2009 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60909-0 NOTE Harmonized as EN 60909-0:2001 (not modified).

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60060-1	1989	High-voltage test techniques - Part 1: General definitions and test requirements	HD 588.1 S1	1991
IEC 60695-11-5	2004	Fire hazard testing - Part 11-5: Test flames - Needle-flame test method - Apparatus, confirmatory test arrangement and guidance	EN 60695-11-5	2005
ISO 868	2003	Plastics and ebonite - Determination of indentation hardness by means of a durometer (Shore hardness)	-	-
ISO 4287	1997	Geometrical Product Specifications (GPS) - Surface texture: Profile method - Terms, definitions and surface texture parameters	EN ISO 4287	1998
ISO 4892-2	2006	Plastics - Methods of exposure to laboratory light sources - Part 2: Xenon-arc lamps	EN ISO 4892-2	2006
ISO 9227	2006	Corrosion tests in artificial atmospheres - Salt spray tests	EN ISO 9227	2006

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CABLE CLEATS FOR ELECTRICAL INSTALLATIONS

1 Scope

This International Standard specifies requirements and tests for cable cleats and intermediate restraints used for securing cable in electrical installations. Cable cleats provide resistance to electromechanical forces where declared. This standard includes cable cleats that rely on a mounting surface specified by the manufacturer for axial and/or lateral retention of cables.

This standard does not apply to:

- cable glands;
- cable ties.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60060-1:1989, *High-voltage test techniques – Part 1: General definitions and test requirements*

IEC 60695-11-5:2004, *Fire hazard testing – Part 11-5: Test flames – Needle-flame test method – Apparatus, confirmatory test arrangement and guidance*

ISO 868:2003, *Plastics and ebonite – Determination of indentation hardness by means of a durometer (Shore hardness)*

ISO 4287:1997, *Geometrical product specifications (GPS) – Surface texture: Profile method – Terms, definitions and surface texture parameters*

ISO 4892-2:2006, *Plastics – Methods of exposure to laboratory light sources – Part 2: Xenon-arc lamps*

ISO 9227:2006, *Corrosion tests in artificial atmospheres – Salt spray tests*

3 Terms, definitions and abbreviations

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

3.1

cable cleat

device designed to provide securing of cables when installed at intervals along the length of cables

NOTE A cable cleat is provided with a means of attachment to a mounting surface but does not rely on an unspecified mounting surface for the retention of the cables. Examples of mounting surfaces that may be specified are ladder, tray, strut or rail, wire and beam (see Figures A.8 and A.9). Where declared, cable cleats provide resistance to electromechanical forces

3.2**intermediate restraint**

cable retaining device designed to be used with cable cleats to hold the cables together in order to provide resistance to electromechanical forces. Intermediate restraints are not attached to the mounting surface

3.3**metallic**

consisting of metal only

3.4**non-metallic**

consisting of non-metallic material only

3.5**composite**

consisting of metallic and non-metallic materials

3.6**short-circuit current**

overcurrent resulting from a circuit condition in which the current flows through an abnormal or unintended path of negligible impedance between live conductors, or between a live conductor and an earth, having a difference in potential under normal operating conditions

3.7**peak short-circuit current** i_p

maximum possible instantaneous value of the short-circuit current (see Annex B)

3.8**initial r.m.s. symmetrical short-circuit current** I''_k

r.m.s. value of the a.c. symmetrical component of a short-circuit current, applicable at the instant of the short circuit if the impedance remains at the zero-time value (see Annex B)

3.9**decaying (aperiodic) component of short-circuit current** $i_{d.c.}$

mean value between the top and bottom envelope of a short-circuit current decaying from an initial value to zero (see Annex B)

3.10**steady-state short-circuit current** I_k

r.m.s. value of the short-circuit current which remains after the decay of the transient phenomena (see Annex B)

3.11**trefoil formation**

the formation of three cables so laid as to be mutually equidistant. Viewed in cross-section, the lines joining the cable centres form an equilateral triangle (see Figure 5)

NOTE The formation is known as “close trefoil” formation when the cables are touching each other.

3.12**flat formation**

the formation of a number of cables laid in a plane, usually with equal spacing between adjacent cables (see Figure 6)

3.13**electromechanical forces**

induced forces acting on current-carrying conductors

3.14**retention**

limiting the lateral and/or axial movement of the cable

3.15**securing**

fixing to or from a mounting surface or another product

3.16**environmental influences**

effect of corrosive substances or solar radiation, etc.

4 General requirements

Products covered by this standard shall be so designed and constructed that, when assembled and installed as for normal use according to the manufacturer's instructions, they ensure securing of cables as declared in accordance with Clause 6 and shall not cause damage to the cable.

Compliance is checked by the relevant tests specified in this standard.

5 General notes on tests

5.1 Tests according to this standard are type tests. All sizes shall comply with Clause 8 and 9.1a). Where there are a number of cleats in a range, the range is divided into one or more classes. In this case, the smallest, the largest and any critical size of cleat in each class are tested, except for the test in 9.5. The test in 9.5 is performed on the most critical size in each class.

NOTE For guidance in determining classes, cable cleats or intermediate restraints having material, construction characteristics, and classifications according to Clause 6 below, in common, are considered of the same class.

5.2 Unless otherwise specified, all tests shall be carried out on three new samples of each size selected as in 5.1 assembled and installed as for normal use according to the manufacturer's or responsible vendor's instructions.

5.3 Tests on non-metallic and composite cleats and intermediate restraints shall not commence earlier than 168 h after manufacture.

5.4 Unless otherwise specified, the tests shall be carried out at an ambient temperature of $(23^{+5}_{-5})^{\circ}\text{C}$.

5.5 Compliance with this standard is satisfied if all the test requirements are achieved. If only one of the samples does not satisfy a test due to a manufacturing fault, then that test and any preceding one which may have influenced the results of the test shall be repeated and also the tests which follow shall be made in the same required sequence on another full set of samples, all of which shall comply with the requirements.

NOTE The applicant, when submitting the first set of samples, may also submit an additional set of samples, which may be necessary should one sample fail. The test house should then, without further request, test the additional set of samples and should only reject if a further failure occurs. If the additional set of samples is not submitted at the same time, a failure of one sample would entail rejection.