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Multi-purpose insulating sticks for electrical operations on high voltage installations

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NSAI 1 Swift Square, Northwood, Santry Dublin 9	T +353 1 807 3800 F +353 1 807 3838 E standards@nsai.ie W NSAI.ie	Sales: T +353 1 857 6730 F +353 1 857 6729 W standards.ie
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EUROPEAN STANDARD
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EN 50508

February 2009

ICS 13.260

English version

**Multi-purpose insulating sticks
for electrical operations on high voltage installations**

Perches isolantes à usage multiple
pour les opérations électriques
sur les installations haute tension

Isolierende Mehrzweckstangen
für elektrische Betätigungen
in Hochspannungsanlagen

This European Standard was approved by CENELEC on 2008-10-21. 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
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: avenue Marnix 17, B - 1000 Brussels

Foreword

This European Standard was prepared by the Technical Committee CENELEC TC 78, Equipment and tools for live working.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50508 on 2008-10-21.

The following dates were fixed:

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 - latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2011-11-01
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Contents

Introduction.....	5
1 Scope.....	6
2 Normative references.....	7
3 Terms and definitions	7
4 Requirements	9
4.1 Materials.....	9
4.2 Dimensions	9
4.3 Mechanical requirements.....	11
4.4 Electrical requirements	11
4.5 Marking	12
4.6 Instructions for use.....	13
5 Verification and testing.....	13
5.1 General	13
5.2 Electrical test.....	14
5.3 Mechanical verifications and tests	16
5.4 Mechanical tests	17
6 Classification of defects.....	19
Annex A (normative) Instructions for use	25
Annex B (informative) Wet conditions test.....	26
Annex C (informative) Recommended sticks	28
Annex D (informative) Test tools for recommended heads.....	29
Annex E (normative) Marking: Information on the labels	33
Annex F (informative) Bending calculation	34
Annex G (normative) Test sequence	36
Annex H (informative) Classification of defects	37
Annex I (informative) Periodic maintenance test.....	38
Bibliography.....	39
Figures	
Figure 1 – Insulating stick with three sections (see Clause 3)	20
Figure 2 – Length of sections (see 4.2.1 and 4.2.2).....	21
Figure 3 – Leakage current test (see 5.2.2)	21
Figure 4a – Bridging test – Test arrangement and dimensions of the V-shape bars (see 5.2.3)	22
Figure 4b – Bridging test – Connection of the V-shape bars (see 5.2.3)	22
Figure 4c – Bridging test – Initial stick position (see 5.2.3.1 and 5.2.3.2)	23
Figure 5 – Assembly for bending test (see 5.4.1)	24
Figure 6 – Assembly for torsion test (see 5.4.2).....	24
Figure B.1 – Arrangement of electrodes	27
Figure D.1 – Test tool for universal type head – First example.....	29
Figure D.2 – Test tool for universal type head – Second example	30
Figure D.3 – Test tool for Bayonet type head.....	31
Figure D.4 – Test tool for hexagonal 12 type head	32
Figure I.1 – Deflection calculated versus maximum deflection (see Table 5).....	35

Tables

Table 1 – Handle length	10
Table 2 – Minimum length of insulating element.....	12
Table 3 – Dimensions for the concentric rings and band electrodes	14
Table 4 – Distances d_1 between V-bars for the bridging test set-up	15
Table 5 – Maximum deflection	17
Table C.1 – Dimensions of recommended sticks.....	28
Table F.1 – Tube values.....	34
Table F.2 – Arrangement.....	34
Table G.1 – Sequential order for performing tests	36
Table H.1 – Classification of defects and associated requirements and routine tests.....	37
Table I.1 – In-service testing	38

Introduction

Multipurpose insulating sticks are used to operate high voltage (more than 1 kV) live equipment at distance, such as opening and closing switchgear, extracting and replacing fuses, etc. They are also used to carry out operations prior to dead working, as in the case of voltage verification, earthing and short-circuiting, etc.

In all these cases the stick has two main functions, to reach the part of the installation that needs to be operated on and to protect the worker from risk of electrical injury, by providing the insulation level and maintaining the safety distance between the worker and the live or potentially live installation.

According to the working and maintenance procedures adopted, additional protection can be added in order to attain the adequate safety level (see Annex A).

The multipurpose insulating stick is used in accordance with EN 50110.

This standard has been prepared in accordance with the requirements of EN 61477.

1 Scope

This European Standard specifies the requirements and tests to be fulfilled by the multipurpose insulating sticks intended to perform a range of operations in high voltage installations by means of the attached appropriate tools, for example:

- connection and disconnection of disconnectors or other equipment operated by the stick,
- fuse replacement with an attached tool,

operations like:

- voltage absence verification, using a detector as a separate device in accordance with EN 61243-1;
- earthing and short circuiting installations, using devices in accordance with EN 61230;
- placing insulating screens in order to provide protection against adjacent live parts;
- testing and measurement;
- any other operation or verification on the electrical installation, provided that the mechanical requirements do not exceed those assured by the stick design and the worker shall remain at a safety distance;
- rescue of accident victims.

This European Standard is applicable to the insulating sticks made of a single continuous tube or rod or multiple tube or rod sections connected to each other, to be used both indoors or outdoors on electrical systems for voltages of 1 kV to 765 kV a.c., frequencies of 50 Hz and/or 60 Hz and in the normal range of temperatures of -25 °C to +55 °C and at a relative humidity between 20 % and 93 %.

For the purpose of this standard, “tube” is used for “tube” and “rod”.

Annex B includes considerations about the use under wet conditions.

NOTE It is a general practice to use an insulating stick on d.c. installations with the same value of nominal voltage. That use shall comply with the national regulations.

This European Standard is not applicable to

- sticks covered by EN 60832,
- telescopic sticks covered by EN 62193,
- sticks with mobile internal or external operating rods, as those used directly for fuse replacement,
- single purpose sticks, especially designed to cover a single operation, generally as a complete equipment such as voltage detectors covered by EN 61243-1.

NOTE Except where otherwise specified, all the voltages defined in this European Standard refer to values of phase-to-phase voltages of three-phase systems. In other systems, the applicable phase-to-phase or phase-to-earth (ground) voltages should be used to determine the operating voltage.

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.

EN 60068-1	1994	Environmental testing – Part 1: General and guidance (IEC 60068-1:1988 + corrigendum Oct. 1988 + A1:1992)
EN 60068-2-32	1993	Basic environmental testing procedures – Part 2: Tests - Test Ed: Free fall (IEC 60068-2-32:1975 + A2:1990)
EN 60068-2-75	1997	Environmental testing – Part 2-75: Tests - Test Eh: Hammer tests (IEC 60068-2-75:1997)
EN 60855	1996	Insulating foam-filled tubes and solid rods for live working (IEC 60855:1985, mod.)
EN 61235	1995	Live working - Insulating hollow tubes for electrical purposes (IEC 61235:1993, mod.)
EN 61477		Live working - Minimum requirements for the utilization of tools, devices and equipment (IEC 61477)
HD 588.1 S1	1991	High-voltage test techniques – Part 1: General definitions and test requirements (IEC 60060-1:1989 + corrigendum March 1990)
IEC 60050	series	International Electrotechnical Vocabulary (IEV)
IEC 60417	Database	Graphical symbols for use on equipment
ISO 48		Rubber, vulcanized or thermoplastic - Determination of hardness (hardness between 10 IRHD and 100 IRHD)

3 Terms and definitions

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

NOTE Further information on terminology is illustrated in Figure 1.

3.1

cap

protection of the bottom of the stick

3.2

coupling (for multiple section sticks)

element allowing the attachment of the sections of the stick

3.3

critical defect

defect on product that judgement and experience indicate is likely to result in hazardous or unsafe conditions for individuals using and depending on the product

3.4

hand guard

physical guard or sign, visibly different, used to separate the handle from the insulating element

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