SLOVENSKI STANDARD
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Nadomešča:
SIST HD 629.2 S2:2006
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Preskusne zahteve za pribor, ki se uporablja na elektroenergetskih kablih za naznačene napetosti od 3,6/6(7,2) kV do vključno 20,8/36(42) kV - 2. del: Kabli, izolirani z impregniranim papirjem

Test requirements for accessories for use on power cables of rated voltage from 3,6/6 (7,2) kV up to 20,8/36(42) kV - Part 2: Cables with impregnated paper insulation

Prüfanforderungen für Kabelgarnituren für Starkstromkabel 12 mit einer Nennspannung von 3,6/6(7,2) kV bis 20,8/36(42) kV 13 Teil 2: Kabel mit massegetränkter Papierisolierung

Ta slovenski standard je istoveten z: **prHD 629.2 S3**

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29.060.20 Kabli Cables

oSIST prHD 629.2 S3:2023 **en**

HARMONIZATION DOCUMENT

DOCUMENT D'HARMONISATION

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prHD 629.2 S3

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Will supersede HD 629.2 S2:2006 (PART); HD 629.2 S2:2006/A1:2008 (PART)

English Version

Test requirements for accessories for use on power cables of rated voltage from 3,6/6(7,2) kV up to 20,8/36(42) kV - Part 2: Cables with impregnated paper insulation

To be completed

Prüfanforderungen für Kabelgarnituren für Starkstromkabel 12 mit einer Nennspannung von 3,6/6(7,2) kV bis 20,8/36(42) kV 13 Teil 2: Kabel mit massegtränkter Papierisolierung

This draft Harmonization Document is submitted to CENELEC members for enquiry.
Deadline for CENELEC: 2023-04-07.

It has been drawn up by CLC/TC 20.

If this draft becomes a Harmonization Document, CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for implementation of this Harmonization Document on a national level.

This draft Harmonization Document was established by CENELEC in three official versions (English, French, German).

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a Harmonization Document. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a Harmonized Document.

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

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European foreword

This document (prHD 629.2 S3:2022) has been prepared by CLC/ TC 20 “Electric cables”.

This document is currently submitted to the Enquiry.

The following dates are proposed:

• latest date by which the existence of this document has to be announced at national level	(doa)	dor + 6 months
• latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	dor + 12 months
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	dor + 36 months (to be confirmed or modified when voting)

This document will partially supersede HD 629.2 S2:2006 and all of its amendments and corrigenda (if any).

Introduction

This document has been written as part of a series of standards to satisfy the Public Procurement Directive, and is complementary to HD 621, which covers impregnated paper insulated power cables from 3,6/6(7,2) kV to 20,8/36(42) kV, inclusive.

This document defines the requirements which can be called up for joints, stop ends, separable connectors, indoor and outdoor terminations when used with impregnated paper insulated power cables covered by HD 621. The equivalent requirements for extruded power cables are given in HD 629.1 S2.

The test methods for these accessories are given in EN 61442.

The equivalent requirements for transition joints, when used between extruded insulated power cables and impregnated paper insulated power cables covered by HD 620 and HD 621 or other relevant standards are given in HD 629.3 S1.

Formerly, approvals of such products have been achieved on the basis of national standards and specifications and/or the demonstration of satisfactory service performance. The publication of this document does not invalidate existing approvals. However, products approved to such earlier standards or specifications cannot claim approval to this document unless specifically tested to it.

1 Scope

1.1 General

This document specifies performance requirements for type tests for cable accessories for use on impregnated paper insulated power cables as specified in HD 621.

It is not necessary to repeat these tests, once successfully completed, unless changes are made in the materials, design or manufacturing process, which might affect the performance characteristics.

Accessories for special applications such as submarine cables, ships cables or hazardous situations (explosive environments, fire resistant cables or seismic conditions) are not included.

Test methods are included in EN 61442:2005.

NOTE It might be possible, subject to agreement between supplier and purchaser, and/or the relevant conformity assessment body, to demonstrate that conformity to the earlier standard can be used to claim conformity to this document, provided an assessment is made of any additional type testing that might need to be carried out. Any such additional testing that is part of a sequence of testing cannot be done separately.

1.2 Type of accessories

The accessories covered by this document are listed below:

— indoor and outdoor terminations of all designs, including terminal boxes;

— straight joints, branch joints and stop end joints of all designs, suitable for use underground or in air;

— screened or unscreened plug-in type or bolted-type separable connectors capable of interfacing with bushing profiles as specified in EN 50180 and EN 50181.

1.3 Rated voltage

The rated voltages $U_0/U(U_m)$ of the accessories covered by this document are 3,6/6(7,2) - 3,8/6,6(7,2) - 6/10(12) - 6,35/11(12) - 8,7/15(17,5) - 12/20(24) - 12,7/22(24) - 18/30(36) - 19/33(36) - 20,8/36(42) kV where:

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 IEC 61238-1-3, *Compression and mechanical connectors for power cables - Part 1-3: Test methods and requirements for compression and mechanical connectors for power cables for rated voltages above 1 kV (Um = 1,2 kV) up to 36 kV (Um = 42 kV) tested on non-insulated conductors (IEC 61238-1-3)*

EN 61442:2005, *Test methods for accessories for power cables with rated voltages from 6 kV (Um = 7,2 kV) up to 36 kV (Um = 42 kV) (IEC 61442:2005)*

HD 621.S1, *Medium voltage impregnated paper insulated distribution cables*

EN 50655 (series), *Electrical cables - Accessories - Material characterization*

IEC 60050-461, *International Electrotechnical Vocabulary - Chapter 461: Electric cables*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-461 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
connector
device for connecting a conductor to an equipment terminal or for connecting two or more conductors to each other

[SOURCE: EN IEC 61238-1 (IEV 461-17-03, modified)]

3.2
termination
device fitted to the end of a cable to ensure electrical connection with other parts of the system and to maintain the insulation up to the point of connection

[SOURCE: IEV 461-10-01]

3.3
indoor termination
termination intended for use where it is not exposed to either solar radiation or weathering

[SOURCE: IEV 461-10-13]

3.4
outdoor termination
termination intended for use where it is exposed to either solar radiation or weathering or both

[SOURCE: IEV 461-10-14]

3.5
terminal box
air- or compound-filled box fully enclosing a termination

[SOURCE: IEV 461-10-03 modified]

3.6
shrouded termination
indoor termination with additional insulation at the bushing connection and used in an air-filled terminal box

[SOURCE: IEV 461-10-21]

3.7
joint
accessory suitable for use in air or underground which makes a connection between two or more insulated power cables to form a continuous circuit

3.7.1
type I joint
joint suitable for use where an impact resistance withstand is not required

3.7.2
type II joint
joint which has an impact resistance withstand in accordance with this document

3.8
straight joint
accessory making a connection between two cables to form a continuous circuit

[SOURCE: IEV 461-11-01]

Note 1 to entry: For types of joint see 3.7.1 and 3.7.2.

3.9
branch joint
accessory making a connection of a branch cable to a main cable

[SOURCE: IEV 461-11-17]

Note 1 to entry: For types of joint see 3.7.1 and 3.7.2.

3.10
radial field joint
joint where the individual cores are screened throughout the joint

Note 1 to entry: For types of joint see 3.7.1 and 3.7.2.

3.11
non-radial field joint
joint which does not contain individual core screens

Note 1 to entry: For types of joint see 3.7.1 and 3.7.2.

3.12
stop end
accessory providing a means of insulating the unconnected end of an energized cable

[SOURCE: IEV 461-10-07 modified]

3.13
separable connector
fully insulated termination permitting the connection and the disconnection of a cable to other equipment

3.14
screened separable connector
separable connector which does not have a screened external surface

[SOURCE: IEV 461-10-15]

3.15
unscreened separable connector
separable connector which does not have an external screen

[SOURCE: IEV 461-10-15]

3.16
plug-in type separable connector
separable connector in which the electrical contact is made by a sliding device

[SOURCE: IEV 461-10-17]

3.17
bolted-type separable connector
separable connector in which the electrical contact is made by a bolted device

[SOURCE: IEV 461-10-18]

3.18
tracking
progressive formation of conductive paths, which are produced on the surface or within a solid insulating material, due to the combined effects of electric stress and electrolytic contamination

Note 1 to entry: Tracking usually occurs due to surface contamination.

[SOURCE: IEV 212-11-56]

3.19
erosion
wearing away of insulating material by the action of electric discharges [SOURCE: IEV 212-11-55]

3.20
metallic housing
metal enclosure in intimate contact with the outer screen of a separable connector and having at least the same current carrying capacity to earth as the metallic screen of the cable with which the separable connector is to be used

3.21
U_0
rated power-frequency voltage between conductor and earth or metallic screen, for which the cable accessory is designed

3.22
U
rated power-frequency voltage between conductors for which the cable accessory is used

3.23
U_m
maximum value of the 'highest system voltage' for which the cable accessory is used

4 Current

The continuous current rating of a termination or joint for impregnated paper insulation power cables shall be in accordance with the appropriate cable specified in HD 621 and shall be suitable for operation at the rated current and under short circuit fault conditions at the temperatures stated therein.

The current rating of a separable connector is governed by the current rating of the mating bushing, (see EN 50180 and EN 50181).

5 Components

5.1 Connectors

Connectors used within the accessory shall comply with EN IEC 61238-1-3 where applicable, or with another relevant standard or specification.

Users should be aware that accessory performances and compatibility shall be checked if the connector installed in the accessory is different from that used for the accessory qualification. Compliance is given only with the connector used in the tests.

5.2 Materials

It is not a pre-requirement for compliance with this performance standard but, if component material characterization is required, the relevant part of EN 50655 (series) shall be used.

6 Test assemblies

6.1 Identification

6.1.1 Cables

The cables used for testing shall comply with HD 621.S1 as applicable.

Constructional details of the cables shall be identified as given in Annex A.

6.1.2 Connectors

Connectors used within the accessories shall be identified by the specification with which they comply.

Connectors used within the accessories shall be identified as in Annex B.

6.1.3 Accessories

Accessories to be tested shall be correctly identified with respect to

- name of manufacturer or supplier,
- type, designation, manufacturing date or code,
- minimum and maximum cross-sections, material and shape of cable conductor,
- minimum and maximum cable insulation diameters,
- connector type(s),
- rated voltage (see 1.3),
- installation instructions (reference and date),
- list of kit contents.

6.2 Cable conductor cross-section

Unless otherwise specified, the conductor cross-section shall be

- for terminations, joints or stop ends; 120 mm^2 or 150 mm^2 or 185 mm^2 or 240 mm^2,
- for separable connectors, as indicated in Table 1 for each rating, using either aluminium or copper conductors.

6.3 Assembly

Accessories shall be assembled in the manner specified in the manufacturer's instructions, with the grade and quantity of materials supplied. A joint designed for crossed cores shall be so assembled.

6.4 Terminations

Terminations shall be tested using the arrangement and with the number of samples detailed in Figure 1.