

STN	Skúšobné požiadavky na príslušenstvo silnoprúdových káblov na menovité napätie od 3,6/6 (7,2) kV do 20,8/36 (42) kV Časť 3: Prechodové spoje medzi káblami s impregnovanou papierovou izoláciou a káblami s vytlačanou izoláciou	STN 34 7006-3 34 7006
------------	---	---

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 3:
Transition joints between cables with impregnated paper insulation and cables with extruded insulation

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 03/24

Táto norma čiastočne nahrádza normu STN 34 7006-2 z júla 2006. Súbežná platnosť do 11. 12. 2026.

Obsahuje: HD 629.3 S1:2024

138368



Úrad pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky, 2024
Slovenská technická norma a technická normalizačná informácia je chránená zákonom č. 60/2018 Z. z. o technickej normalizácii
v znení neskorších predpisov.

HARMONIZATION DOCUMENT

HD 629.3 S1

DOCUMENT D'HARMONISATION

HARMONISIERUNGSDOKUMENT

January 2024

ICS 29.035.10; 29.060.20

Supersedes 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 3:
Transition joints between cables with impregnated paper
insulation and cables with extruded insulation

Exigences relatives aux essais des accessoires des câbles
d'énergie pour des tensions assignées de 3,6/6(7,2) kV à
20,8/36(42) kV - Partie 3: Jonctions mixtes entre les câbles
isolés au papier imprégné et les câbles à isolation extrudée

Prüfanforderungen für Kabelgarnituren für Starkstromkabel
mit einer Nennspannung von 3,6/6(7,2) kV bis 20,8/36(42)
kV - Teil 3: Übergangsmuffen für Kabel mit
massegetränkter Papierisolierung und für Kabel mit
extrudierter Kunststoffisolierung

This Harmonization Document was approved by CENELEC on 2023-12-11. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for implementation of this Harmonization Document at national level.

Up-to-date lists and bibliographical references concerning such national implementations may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This Harmonization Document exists 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.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

HD 629.3 S1:2024 (E)

Contents	Page
European foreword	4
Introduction	5
1.1 General.....	6
1.2 Type of accessories	6
1.3 Rated voltage	6
5.1 Connectors	9
5.2 Materials.....	9
6.1 Identification	9
6.1.1 Cables	9
6.1.2 Connectors.....	9
6.1.3 Accessories.....	9
6.2 Cable conductor nominal cross section	10
6.2.1 Paper cable	10
6.2.2 Polymeric cable.....	10
6.2.3 Qualification	10
6.3 Assembly.....	11
6.4 Transition joints	11
6.5 Test arrangements and number of samples	11
7.1 General.....	12
7.2 Connectors	12
7.3 Cable constructions.....	13
7.4 Extension of compliance to paper to paper cable joints.....	14
7.5 Extension of compliance from EPR or HEPR to XLPE/paper transition joints.....	14
8.1 General.....	14
8.2 Dynamic short circuit performance.....	14
9.1 General.....	15
9.2 Test reports	15
9.3 Failures.....	15
9.3.1 General	15
9.3.2 Installation or procedure errors	15
9.3.3 Cable failure	16
Annex A (normative) Identification.....	22
A.1 Identification of test cable (paper insulated) (see 6.1.1 and 9.2)	22
A.2 Identification of test cable (extruded insulation) (see 6.1.1 and 9.2).....	23
Annex B (normative) Identification of connector (see 6.1.2 and 9.2)	24
Annex C (normative) Visual examination	25
C.1 Method.....	25
C.2 Examination sheet	26
C.3 Special requirements for transition joints submitted to test sequence B3R	26
Annex D (informative) Test for quality check of insulation of paper insulated cable	27
D.1 Oil bath test	27
Annex E (normative) Test sequences B3W (Withstand) and B3R (Robustness)	28
E.1 General	28

HD 629.3 S1:2024 (E)

E.2 Purpose	28
E.3 General test conditions	28
E.3.1 Test set-up	28
E.3.2 Mounting of the transition joints	28
E.4 AC voltage test	29
E.5 Combined water and conductor cycling test.....	29
E.5.1 General.....	29
E.5.2 Principle.....	29
E.5.3 Water heating cycles	29
E.5.4 Conductor heating cycles.....	29
E.5.5 Recordings	30
E.6 Electrical heat cycling test in air	30
E.7 AC breakdown test on set 1 and set 2 samples (for B3R category only).....	30
E.8 AC voltage test (for B3W category only)	31
E.9 Visual examination	31
Annex F (informative) Commonly used types of paper insulated cable designs.....	32
Bibliography	33

Tables

Table 1 — Selection of nominal cross sections of extruded insulated cable vs paper insulated cable conductor nominal cross sections	10
Table 2 — Compliance and qualification scheme for transition joints	11
Table 3 — Compliance requirements of connectors for joints.....	13
Table 4 — Extension of compliance from tested paper cable to other types of paper cable	13
Table 5 — Compliance from tested extruded cable insulation to other extruded cable insulation.....	14
Table 6 — Transition joints between cables with impregnated paper insulation and cables with extruded insulation (see Table 9)	17
Table 7 — Additional tests for compliance extension to other conductor connectors.....	19
Table 8 — Summary of test voltages (refer to Clause 7)	20
Table 9 — Test arrangements for transition joints	21

Figures

Figure E.1 — general diagram of the testing set-up.....	28
Figure E.2 — heating cycles (principle).....	30

HD 629.3 S1:2024 (E)**European foreword**

This document (HD 629.3 S1:2024) has been prepared by the CLC/TC 20 “Electric cables”.

The following dates are fixed:

- latest date by which this document has to be (dop) 2024-12-11
implemented at national level by publication of
an identical national standard or by
endorsement
- latest date by which the national standards (dow) 2026-12-11
conflicting with this document have to be
withdrawn

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

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Introduction

This document defines requirements and tests which can be called up for transition joints, when used between extruded insulated power cables and impregnated paper insulated power cables covered by HD 620 and HD 621 or another relevant standard.

HD 629.3 S1:2024 (E)

1 Scope

1.1 General

This document specifies performance requirements for type tests for transition joints for use between extruded insulated power cables as specified in HD 620 and impregnated paper insulated power cables as specified in HD 621 or another relevant standard.

Once type test for an accessory is successfully completed, it is not necessary to repeat the test, unless changes are made in the materials, design or manufacturing process, which might affect the performance characteristics.

Possible extra thermo-mechanical forces due to high current loads from renewable sources of power generation are not covered by these tests (under consideration).

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 IEC 61442:— and Annex E.

NOTE 1 This document does not invalidate existing approvals of products achieved on the basis of national standards and specifications and/or the demonstration of satisfactory service performance. However, products approved according to such national standards or specifications cannot directly claim approval to this document.

NOTE 2 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 straight and branch transition joints of all designs, suitable for use underground or in air.

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.

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 ($U_m = 1,2$ kV) up to 36 kV ($U_m = 42$ kV) tested on non-insulated conductors $U_m = 1,2$ kV up to 36 kV ($U_m = 42$ kV) tested on non-insulated conductors*

EN IEC 61442:—¹, *Test methods for accessories for power cables with rated voltages from 6 kV ($U_m = 7,2$ kV) up to 36 kV ($U_m = 42$ kV) (IEC 61442:2023)*

HD 620 S2, *Distribution cables with extruded insulation for rated voltages from 3,6/6 (7,2) kV up to and including 20,8/36 (42) kV*

¹ To be published. Stage at the time of publication: FprEN IEC 61442:2023.

HD 629.3 S1:2024 (E)

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

HD 629.1 S3, *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 1: Accessories for cables with extruded insulation*

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

koniec náhľadu – text ďalej pokračuje v platenej verzii STN