

**SLOVENSKI**  
**STANDARD**

**SIST HD 629.1**  
**S1:1998/A1:2002**

prva izdaja  
april 2002

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Amendment to clauses 3 & 7, subclause 1.1 and tables 3 to 11 of HD

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English version

**Test requirements on 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: Cables with extruded insulation**

Prescriptions relatives aux essais sur  
les accessoires des câbles d'énergie  
pour des tensions assignées  
3,6/6(7,2) kV à 20,8/36(42) kV  
Partie 1: 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 1: Kabel mit extrudierter  
Kunststoffisolierung

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SIST HD 629.1 S1:1998/A1:2002

This amendment A1 modifies the Harmonization Document HD 629.1 S1:1996; it was approved by CENELEC on 2000-11-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for implementation of this amendment on a national level.

Up-to-date lists and bibliographical references concerning such national implementation may be obtained on application to the Central Secretariat or to any CENELEC member.

This amendment exists in three official versions (English, French, German).

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

## CENELEC

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

**Central Secretariat: rue de Stassart 35, B - 1050 Brussels**

### Foreword

This amendment to HD 629.1 S1:1996 has been prepared by WG 11 of CENELEC TC 20, Electric Cables. CENELEC TC 20 confirmed at its Stresa meeting (April 1999) that the draft amendment should go to the Unique Acceptance Procedure.

The draft was submitted to the Unique Acceptance Procedure in December 1999 and was approved by CENELEC as amendment A1 to HD 629.1 S1 on 2000-11-01.

The following dates were fixed:

- latest date by which the existence of the amendment has to be announced at national level (doa) 2001-04-01
- latest date by which the amendment has to be implemented at national level by publication of a harmonized national standard or by endorsement (dop) 2001-10-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2002-10-01

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## 1.1 General

**Replace** the second paragraph by the following:

Formerly, approvals for 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 CENELEC standard does not invalidate existing approvals. However, products approved to such earlier standards or specifications shall not claim approval to this CENELEC standard unless specifically tested to it.

## 3 Definitions

**Add** new definitions as follows:

### 3.17 tracking

an irreversible degradation by formation of paths, which are conductive even under dry conditions, starting and developing on the surface of an insulating material and which may occur on surfaces in contact with air and also on the interfaces between different insulating materials

### 3.18 erosion

an irreversible and non-conducting degradation of the surface of the insulator that occurs by loss of material, and which may be uniform, localised or tree-shaped

NOTE Shallow surface traces, commonly tree-shaped may occur on terminations, after partial flashover. These traces are acceptable as long as they are non-conductive. When they are conductive they are classed as tracking.

### 3.19 metallic housing

a 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

## 7 Test sequences

After the existing text **add** a new subclause as follows:

### 7.1 Dynamic short circuit performance

In respect of short circuit performance, accessories shall be classed as:

Class 1 Three core accessories designed for peak currents above 63 kA up to and including 80 kA.

The test current shall be 80 kA peak.

Class 2 Three core and single core accessories designed for peak currents above 80 kA up to and including 100 kA

The test current shall be 100 kA peak.

Class 3 Three core and single core accessories designed for peak currents above 100 kA up to and including 125 kA.

The test current shall be 125 kA peak.

## 8 Test results

**Table 3 - Indoor terminations for extruded insulation cables (including shrouded terminations)**

Add notes to the requirements for tests 3, 6, 8 and 11, as follows:

3	Partial discharge at ambient temperature	XLPE/EPR: max. 10 pC at $1,73 U_0^{(4)}$ PVC: max. 20 pC at $1,73 U_0^{(4)}$
6	Partial discharge at elevated and Ambient temperature	XLPE/EPR: max. 10 pC at $1,73 U_0^{(4)}$ PVC: max. 20 pC at $1,73 U_0^{(4)}$
8	Partial discharge at elevated and Ambient temperature	XLPE/EPR: max. 10 pC at $1,73 U_0^{(4)}$ PVC: max. 20 pC at $1,73 U_0^{(4)}$
11	Dynamic short circuit	1 short circuit at $I_d^{(3)}$

Add new footnotes <sup>(3)</sup> and <sup>(4)</sup> as follows:

<sup>(3)</sup> For the value of the current  $I_d$ , see 7.1.

<sup>(4)</sup> If the relevant cable specification uses a level  $>1,73 U_0$  the test voltage is  $2U_0$ . Compliance at  $2 U_0$  also gives compliance at  $1,73 U_0$ .

**Table 4 - Outdoor terminations for extruded insulation cables**

Add notes to the requirements for tests 4, 7, 10 and 13, as follows:

4	Partial discharge at ambient temperature	XLPE/EPR: max. 10 pC at $1,73 U_0^{(4)}$ PVC: max. 20 pC at $1,73 U_0^{(4)}$
7	Partial discharge at elevated and Ambient temperature	XLPE/EPR: max. 10 pC at $1,73 U_0^{(4)}$ PVC: max. 20 pC at $1,73 U_0^{(4)}$
10	Partial discharge at elevated and Ambient temperature	XLPE/EPR: max. 10 pC at $1,73 U_0^{(4)}$ PVC: max. 20 pC at $1,73 U_0^{(4)}$
13	Dynamic short circuit	1 short circuit at $I_d^{(3)}$

Add new footnotes <sup>(3)</sup> and <sup>(4)</sup> as follows:

<sup>(3)</sup> For the value of the current  $I_d$ , see 7.1.

<sup>(4)</sup> If the relevant cable specification uses a level  $>1,73 U_0$  the test voltage is  $2U_0$ . Compliance at  $2 U_0$  also gives compliance at  $1,73 U_0$ .

**Table 5 - Joints for extruded insulation cables**

Add notes to the requirements for tests 3, 7, 10 and 13, as follows:

3	Partial discharge at ambient temperature	XLPE/EPR: max. 10 pC at 1,73 U <sub>0</sub> <sup>(4)</sup> PVC: max. 20 pC at 1,73 U <sub>0</sub> <sup>(4)</sup>
7	Partial discharge at elevated and Ambient temperature	XLPE/EPR: max. 10 pC at 1,73 U <sub>0</sub> <sup>(4)</sup> PVC: max. 20 pC at 1,73 U <sub>0</sub> <sup>(4)</sup>
10	Partial discharge at elevated and Ambient temperature	XLPE/EPR: max. 10 pC at 1,73 U <sub>0</sub> <sup>(4)</sup> PVC: max. 20 pC at 1,73 U <sub>0</sub> <sup>(4)</sup>
13	Dynamic short circuit	1 short circuit at I <sub>d</sub> <sup>(3)</sup>

Add new footnotes <sup>(3)</sup> and <sup>(4)</sup> as follows:

<sup>(3)</sup> For the value of the current I<sub>d</sub>, see 7.1.

<sup>(4)</sup> If the relevant cable specification uses a level >1,73 U<sub>0</sub> the test voltage is 2 U<sub>0</sub>. Compliance at 2 U<sub>0</sub> also gives compliance at 1,73 U<sub>0</sub>.

**Table 6 - Stop ends for extruded insulation cables**

Add notes to the requirements for tests 3 and 7, as follows:

3	Partial discharge at ambient temperature	XLPE/EPR: max. 10 pC at 1,73 U <sub>0</sub> <sup>(1)</sup> PVC: max. 20 pC at 1,73 U <sub>0</sub> <sup>(1)</sup>
7	Partial discharge at ambient temperature	XLPE/EPR: max. 10 pC at 1,73 U <sub>0</sub> <sup>(1)</sup> PVC: max. 20 pC at 1,73 U <sub>0</sub> <sup>(1)</sup>

Add new footnote <sup>(1)</sup> as follows: [SIST HD 629.1 S1:1998/A1:2001](https://standards.iteh.ai/catalog/standards/sist/19565fcb-1686-4f32-8b75-b594e5514/sist-1998/a1-2001)

[https://standards.iteh.ai/catalog/standards/sist/19565fcb-1686-4f32-8b75-](https://standards.iteh.ai/catalog/standards/sist/19565fcb-1686-4f32-8b75-b594e5514/sist-1998/a1-2001)

<sup>(1)</sup> If the relevant cable specification uses a level >1,73 U<sub>0</sub> the test voltage is 2 U<sub>0</sub>. Compliance at 2 U<sub>0</sub> also gives compliance at 1,73 U<sub>0</sub>.

**Table 7 - Screened separable connectors for extruded insulation cables**

Add new notes or amend existing notes for tests 3, 5, 6, 9, 10, 11, 13 and 17 as follows:

3	Partial discharge at ambient temperature	XLPE/EPR: max. 10 pC at 1,73 U <sub>0</sub> <sup>(6)</sup> PVC: max. 20 pC at 1,73 U <sub>0</sub> <sup>(6)</sup>
5	Electrical heat cycling in air	3 cycles at 2,5 U <sub>0</sub> <sup>(4)</sup>
6	Partial discharge at elevated and Ambient temperature	XLPE/EPR: max. 10 pC at 1,73 U <sub>0</sub> <sup>(6)</sup> PVC: max. 20 pC at 1,73 U <sub>0</sub> <sup>(6)</sup>
9	Dynamic short circuit	1 short circuit at I <sub>d</sub> <sup>(5)</sup>
10	Electrical heat cycling in air	60 cycles at 2,5 U <sub>0</sub> <sup>(4)</sup>
11	Electrical heat cycling in water	63 cycles at 2,5 U <sub>0</sub> <sup>(4)</sup>
13	Partial discharge at elevated and Ambient temperature	XLPE/EPR: max. 10 pC at 1,73 U <sub>0</sub> <sup>(6)</sup> PVC: max. 20 pC at 1,73 U <sub>0</sub> <sup>(6)</sup>
17	Partial discharge at ambient temperature	XLPE/EPR: max. 10 pC at 1,73 U <sub>0</sub> <sup>(6)</sup> PVC: max. 20 pC at 1,73 U <sub>0</sub> <sup>(6)</sup>

**Amend** the axial force requirement for test No. 16 “Operating eye” from 2 200 N to 1 300 N.

Against test No. 21 **change** note <sup>(4)</sup> to note <sup>(3)</sup>.

**Delete** existing footnotes <sup>(3)</sup>, <sup>(4)</sup> and <sup>(5)</sup>, and replace by new footnotes <sup>(3)</sup>, <sup>(4)</sup>, <sup>(5)</sup> and <sup>(6)</sup> as follows:

- <sup>(3)</sup> This test is required for separable connectors without a metallic housing or with a removable metallic housing. The metallic housing shall be removed prior to the test.  
This test is not required for separable connectors which can only be used in service with the metallic housing in position.
- <sup>(4)</sup> Current, see Table 1
- <sup>(5)</sup> For the value of the current  $I_d$ , see 7.1.
- <sup>(6)</sup> If the relevant cable specification uses a level  $>1,73 U_0$ , the test voltage is  $2 U_0$ . Compliance at  $2 U_0$  also gives compliance at  $1,73 U_0$ .

### Table 8 - Unscreened separable connectors (excluding shrouded terminations) for extruded insulation cables

**Add** notes to the requirements for tests 3, 6, 9 and 13, and correct the requirement for test 12, as follows:

3	Partial discharge at ambient temperature	XLPE/EPR: max. 10 pC at $1,73 U_0^{(5)}$ PVC: max. 20 pC at $1,73 U_0^{(5)}$
6	Partial discharge at elevated and Ambient temperature	XLPE/EPR: max. 10 pC at $1,73 U_0^{(5)}$ PVC: max. 20 pC at $1,73 U_0^{(5)}$
9	Dynamic short circuit	1 short circuit at $I_d^{(4)}$
12	Disconnection/connection <sup>(2)</sup>	5 complete operations, no visible damage to contacts
13	Partial discharge at elevated and Ambient temperature	XLPE/EPR: max. 10 pC at $1,73 U_0^{(5)}$ PVC: max. 20 pC at $1,73 U_0^{(5)}$

**Add** new footnotes <sup>(4)</sup> and <sup>(5)</sup> as follows:

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- <sup>(4)</sup> For the value of the current  $I_d$ , see 7.1.
- <sup>(5)</sup> If the relevant cable specification uses a level  $>1,73 U_0$  the test voltage is  $2 U_0$ . Compliance at  $2 U_0$  also gives compliance at  $1,73 U_0$ .

### Table 9 - Additional tests for non-circular conductor profile and/or insulation screen compliance

**Add** notes to the requirements for tests 3 and 5, as follows:

3	Partial discharge at elevated and ambient temperature	XLPE/EPR: max. 10 pC at $1,73 U_0^{(6)}$ PVC: max. 20 pC at $1,73 U_0^{(6)}$
5	Partial discharge at elevated and Ambient temperature	XLPE/EPR: max. 10 pC at $1,73 U_0^{(6)}$ PVC: max. 20 pC at $1,73 U_0^{(6)}$

**Add** new footnote <sup>(6)</sup> as follows:

- <sup>(6)</sup> If the relevant cable specification uses a level  $>1,73 U_0$  the test voltage is  $2 U_0$ . Compliance at  $2 U_0$  also gives compliance at  $1,73 U_0$ .