SLOVENSKI STANDARD
SIST HD 21.11 S1:1998

01-februar-1998

Kabli s polivinilkloridno izolacijo za naznačene napetosti do vključno 450/750 V - 11. del: Kabli za svetilke

Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V - Part 11: Cables for luminaires

Polyvinylchlorid-isolierte Leitungen mit Nennspannungen bis 450/750 V - Teil 11: Leitungen für Leuchten

Conducteurs et câbles isolés au polychlorure de vinyle, de tension assignée au plus égale à 450/750 V - Partie 11: Câbles pour luminaires

Ta slovenski standard je istoveten z: **HD 21.11 S1:1995**

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HARMONIZATION DOCUMENT **HD 21.11 S1**

DOCUMENT D'HARMONISATION

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Descriptors: Electrical installation, insulated conductor, insulated cable, polyvinyl chloride, luminaire, particular specification, insulation, dimension, test

English version

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This Harmonization Document was approved by CENELEC on 1995-03-06. 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.

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 Harmonization Document exists in three official versions (English, French, German).

CENELEC members are the national electrotechnical committees of Austria, Belgium, 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

HD21 was originally adopted by CENELEC on 9th July 1975.

Edition 2 of HD21 was implemented on 1st January 1984, and at that time contained five parts.

Since 1984, new parts have been published, original parts amended, and in addition HD 505 has superseded HD 385 as the cross-reference for test methods.

This new Part 11 to HD 21 introduces divisible two core cables for Class II luminaires and was approved by TC20 at its Helsinki meeting in May 1994 to go forward to the Formal Voting.

HD 21 now has the following parts:

HD 21.1 S2	-	General requirements
HD 21.2 S2	-	Test methods
HD 21.3 S3	-	Non sheathed cables for fixed wiring
HD 21.4 S3	-	Sheathed cables for fixed wiring
HD 21.5 S3	-	Flexible cables (Cords)
HD 21.6	-	(Spare)
HD 21.7 S2	-	Single core non-sheathed cables for internal wiring (90°C conductor temperature)
HD 21.8 S1	-	Single core non-sheathed cables for decorative chains
HD 21.9 S2	-	Single core non-sheathed cables for installation at low temperatures
HD 21.10 S1	-	Extensible leads
HD 21.11 S1	-	Cables for luminaires
HD 21.12 S1	-	Heat resistant flexible cables (cords)
HD 21.13 S1	-	Oil resistant PVC sheathed cables with two or more conductors

This Harmonization Document was prepared by the Technical Committee CENELEC TC 20, Electric cables.

The text of the draft was submitted to the formal vote and was approved by CENELEC as HD 21.11 S1 on 1995-03-06.

The following dates were fixed:

- latest date by which the existence of the HD has to be announced at national level (doa) 1995-09-01
- latest date by which the HD has to be implemented at national level by publication of a harmonized national standard or by endorsement (dop) 1996-03-01
- latest date by which the national standards conflicting with the HD have to be withdrawn (dow) 1996-03-01

For products which have complied with the relevant national standard before 1996-03-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 1997-03-01.

CONTENTS

1. Scope

This Part 11 of the HD details the particular requirements for PVC insulated cables of rated voltages up to U_o/U 300/300V for use indoors as internal wiring or direct supply connection to luminaires.

Each cable shall comply with the appropriate requirements given in Part 1 of this HD and the particular requirements of this Part 11.

2. Normative references

HD 21.11 incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to HD 21.11 only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

HD 383	Conductors of insulated cables (Endorsing IEC 228 and 228A)
HD 405.1	Tests on electric cables under fire conditions. Part 1: Test on a single vertical cable (Endorsing IEC 332-1)
HD 505	Common test methods for insulating and sheathing materials of Electric Cables (Endorsing IEC 811)

3. Divisible, two-layer insulated cables for class II luminaires

3.1 Code designation

H03VH7H-F

3.2 Rated voltage

300/300 V

3.3 Construction

3.3.1 Conductor

Number of conductors: 2.

The conductor shall comply with the requirements given in HD383 for Class 5 conductors.

3.3.2 Insulation - inner layer

The inner layer of insulation shall be polyvinyl chloride compound of the Type TI2 applied around each conductor.

The thickness of the inner layer of insulation shall comply with the specified value given in Table I, column 2 of this Part.

3.3.3 Assembly of cores

The cores shall be laid parallel.

3.3.4 Insulation - outer layer

The outer layer of insulation shall be polyvinyl chloride compound of the Type TI2 applied around the cores.

The thickness of the outer layer of insulation shall comply with the specified value given in Table I, column 3 of this Part.

The outer layer of insulation may adhere to the cores, but shall be a contrasting colour to that of the inner layer.

The cable shall be 'divisible' as shown in Figure 1.

The thickness of the outer layer shall be measured after division of the cores.

The insulation resistance at 70°C shall be not less than the values given in Table I, column 6 of this Part, and shall be measured on a divided element of the cable with both layers of insulation in place.

3.3.5 Overall dimensions

The mean overall dimensions of the cables shall be within the limits given in Table I, columns 4 and 5 of this Part.

3.4 Tests

3.4.1 General

Compliance with the requirements of sub-clause 3.3 of this Part shall be checked by inspection and by the tests given in Table II of this Part.

3.4.2 Test of separation of cores

In addition to the requirements in sub-clause 5.6.3.4 of Part 1 of this HD, the inner layer shall not be visible at the conclusion of the test.

3.5 Guide to use (informative)

See HD516.

TABLE I

GENERAL DATA FOR TYPE H03VH7H-F

1	2	3	4	5	6	7
Number and nominal cross-sectional area of conductors	Thickness of insulation		Mean overall dimensions		Minimum insulation resistance at 70°C	Minimum thickness at one point of complete insulation*
	Inner Layer	Outer Layer	Lower Limit	Upper Limit		
(mm^2)	(mm)	(mm)	(mm)	(mm)	(Mohm.km)	(mm)
2 x 0.5	0.5	0.6	2.9 x 5.9	3.6 x 7.3	0.012	0.89

(*) Measured on section from divided cable

TABLE II

TESTS FOR TYPE H03VH7H-F

1	2	3	4	5
Ref. No.	Tests	Category	Test Method described in	
			HD	Clause
1.	Electrical tests			
1.1	Resistance of conductors	T, S	21.2	2.1
1.2	Voltage test on completed cable at 2000V[1]	T, S	21.2	2.2
1.3	Voltage test on cores at 1500V	T	21.2	2.3
1.4	Insulation resistance at 70°C[1]	T, S	21.2	2.4
1.5	Long term resistance of insulation to d.c.[1]	T	21.2	2.5
1.6	Absence of faults in insulation	R	21.2	2.6
2.	Provisions covering constructional and dimensional characteristics			
2.1	Checking of compliance with constructional provisions	T, S	21.1	Inspection and manual tests
2.2	Measurement of thickness of insulation[2]	T, S	21.2	1.9
2.3	Measurement of overall dimensions	T, S	21.2	1.11
3.	Mechanical properties of insulation[3]			
3.1	Tensile test before ageing	T	505.1.1	9.1
3.2	Tensile test after ageing	T	505.1.2	8.1.3.1
3.3	Loss of mass test	T	505.3.2	8.1
4.	Pressure test at high temperature[3]	T	505.3.1	8.1
5.	Tests at low temperature[3]			
5.1	Bending test for insulation	T	505.1.4	8.1
5.2	Impact test for insulation	T	505.1.4	8.5
6.	Heat shock test[3]	T	505.3.1	9.1
7.	Mechanical strength of completed cable			
7.1	Flexing test	T	21.2	3.1
7.2	Test of separation of cores	T	21.2	3.4
8.	Test under fire conditions	T	405.1	-

(1) This test is carried out on an element of the cable after division.

(2) The minimum thickness of each layer of insulation is not measured, but the minimum thickness of the two layers shall comply with the specified value.

(3) This test is carried out with both layers of insulation treated as one.