



SLOVENSKI STANDARD

SIST HD 21.4 S2:1998

01-februar-1998

Kabli s polivinilkloridno izolacijo za naznačene napetosti do vključno 450/750 V - 4. del: Oplaščeni kabli za stalna ožičenja

Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V - Part 4: Sheathed cables for fixed wiring

Polyvinylchlorid-isolierte Leitungen mit Nennspannungen bis 450/750 V - Teil 4: Mantelleitungen für feste Verlegung

Conducteurs et câbles isolés au polychlorure de vinyle, de tension assignée au plus égale à 450/750 V - Partie 4: Câbles sous gaine pour installations fixes

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Ta slovenski standard je istoveten z: HD 21.4 S2:1990

ICS:

29.060.20 Kabli Cables

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ENGLISH VERSION

UDC 621.315.211.2.027.45-036.743.22-181.1.001.4.002 621.316.17-21

Descriptors: Conductor, cable, flexible cable, rigid cable, single core cable, multicore cable, conductor material, flat cable, tinsel cord, compound, polyvinyl chloride, insulation compound, type test, sample test, routine test, nominal voltage, mark, common marking, identification, colour scheme, construction, insulation, filler, sheath, covering, internal covering, extruded covering, thickness, mean value, specified value, electrical resistance, test, tensile strength, elongation at break, ageing, loss of mass, non contamination, heat shock, pressure, high temperature, low temperature, elongation at low temperature, complete cable, overall dimensions, bending, flexing, voltage test, insulation resistance, absence of short circuits, spark (test), snatch (test), separation of cores, test (under) fire (conditions), guide to use, test method, frequency of test, light sheath, solid conductor, stranded conductor

**Polyvinyl chloride insulated cables of rated
voltages up to and including 450/750 V
Part 4: Sheathed cables for fixed wiring**

Conducteurs et câbles isolés au
polychlorure de vinyle, de tension
assignée au plus égale à 450/750 V
Quatrième partie: Câbles sous gaine
pour installations fixes

Polyvinylchlorid-isolierte
Leitungen mit Nennspannungen
bis 450/750 V
Teil 4: Mantelleitungen für feste
Verlegung

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BODY OF THE HD

The Harmonization Document consists of:

- the text prepared by CENELEC TC 20, based on IEC 227-4:1979

This Harmonization Document was approved by CENELEC on 1981-11-24.

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

According to the CEN/CENELEC Internal Regulations the CENELEC member National Committees were bound: to announce the existence of this Harmonization Document at national level by or before 1982-11-01.

Harmonized national standards are listed on the HD information sheet, which is available from the CENELEC National Committees or from the CENELEC Central Secretariat.

The CENELEC National Committees 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.

FOREWORD

HD 21 was originally adopted by CENELEC on 9th July 1975.

Edition 2 of HD 21 was implemented on 1st January 1984, and at that time contained 5 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 reprint of the 5 parts of Edition 2 of HD 21 incorporates all ratified amendments and the change to HD 505.

The new parts 8 and 9 of HD 21, which are Edition 1 versions, are reprinted to incorporate their amendment and/or the change to HD 505. The issue of new Part 7 coincides with this reprint.

HD 21 now has the following parts:

HD 21.1 S2 - General requirements (with AM1, AM2, AM3 and AM4)

HD 21.2 S2 - Test methods (with AM1)

HD 21.3 S2 - Single core non-sheathed cables for fixed wiring (with AM1)

HD 21.4 S2 - Sheathed cables for fixed wiring

HD 21.5 S2 - Flexible cables (cords) (with AM1, AM2 and AM3)

HD 21.6 - (Spare)

HD 21.7 S1 - Single core non-sheathed cables for internal wiring (90 °C conductor temperature)

HD 21.8 S1 - Single core non-sheathed cables for decorative chains (with AM1)

HD 21.9 S1 - Single core non-sheathed cables for installation at low temperatures (with AM1)

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This Edition 2 of part 4 of HD 21 now incorporates:

NO AMENDMENTS PUBLISHED

References are made, in this Part 4 of HD 21, to other parts of this HD and to other Harmonisation Documents as follows:

- | | |
|-----------|--|
| 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) |

In all cases a reference to another HD implies the latest edition of that document .

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Polyvinyl chloride insulated cables of rated voltages up to and including 450/750V

Part 4: Sheathed cables for fixed wiring

1 Scope

This part (Part 4) of the HD details the particular specifications for polyvinyl chloride sheathed cables for fixed wiring.

Each cable shall comply with the appropriate requirements given in Part 1 and the individual types of cable shall each comply with the particular requirements of this Part.

Note: Due to lack of agreement on a colour-code for rigid multicore cables, this cable type cannot be considered as harmonised, and no designation is allocated.

2 Light polyvinyl chloride sheathed cable *)

2.1 Code designation

See note under Clause 1, Scope.

2.2 Rated voltage

300/500 V

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2.3 Construction

2.3.1 Conductor

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Number of conductors : 2, 3, 4 or 5.

The conductors shall comply with the requirements of HD 383:

Class 1 for solid conductors;
 Class 2 for stranded conductors.

2.3.2 Insulation

The insulation shall be polyvinyl chloride compound of Type TI1, applied around each conductor.

The insulation thickness shall comply with the specified value given in Part 4, Table 1, column 3.

The insulation resistance shall be not less than the value given in Part 4, Table 1, column 8.

This cable type is similar to type 227 IEC 10 but has modified requirements

2.3.3 Assembly of cores

The cores shall be twisted together. A centre filler may be used.

*) This cable type is similar to type 227 IEC 10 but has modified requirements.

2.3.4 *Inner covering*

The twisted cores shall be covered by an extruded inner covering consisting of an unvulcanized rubber or plastic compound.

It shall be possible to separate the cores easily.

2.3.5 *Sheath*

The sheath shall be polyvinyl chloride compound of Type TM1 applied around the inner covering.

It shall fit closely but not adhere to the inner covering.

The sheath thickness shall comply with the specified value given in Part 4, Table 1, column 5.

2.3.6 *Overall diameter*

The mean overall diameter shall be within the limits given in Part 4, Table 1, columns 6 and 7.

2.4 **Tests**

Compliance with the requirements of Part 4, subclause 2.3 shall be checked by inspection and by the tests given in Part 4, Table II.

2.5 **Guide to use**

See Appendix 1 to Part 1.

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Table I: General data

1	2	3	4	5	6		7	8
					lower limit	upper limit		
Number and nominal cross sectional area of conductors mm ²	Class of conductor (HD 383)	Thickness of the insulation Specified value mm	Thickness of the inner covering Approx. value mm	Thickness of the sheath Specified value mm	Mean overall diameter mm	mm	Minimum insulation resistance at 70°C Mohm.km	
2 x 1.5	1	0.7	0.4	1.2	8.4	10.0	0.011	
	2	0.7	0.4	1.2	8.4	10.5	0.010	
2 x 2.5	1	0.8	0.4	1.2	9.6	11.5	0.010	
	2	0.8	0.4	1.2	9.6	12.0	0.009	
2 x 4	1	0.8	0.4	1.2	10.5	12.5	0.0085	
	2	0.8	0.4	1.2	10.5	13.0	0.0077	
2 x 6	1	0.8	0.4	1.2	11.5	13.5	0.0070	
	2	0.8	0.4	1.2	11.5	14.0	0.0065	
2 x 10	1	1.0	0.6	1.4	14.5	16.5	0.0070	
	2	1.0	0.6	1.4	15.0	17.5	0.0065	
2 x 16	2	1.0	0.6	1.4	16.5	20.0	0.0052	
	2	1.2	0.8	1.4	20.5	24.0	0.0050	
2 x 25	2	1.2	1.0	1.6	23.0	27.5	0.0044	
2 x 35	2	1.2	1.0	1.6	23.0	27.5	0.0044	
3 x 1.5	1	0.7	0.4	1.2	8.8	10.5	0.011	
	2	0.7	0.4	1.2	8.8	11.0	0.010	
3 x 2.5	1	0.8	0.4	1.2	10.0	12.0	0.010	
	2	0.8	0.4	1.2	10.0	12.5	0.009	
3 x 4	1	0.8	0.4	1.2	11.0	13.0	0.0085	
	2	0.8	0.4	1.2	11.0	13.5	0.0077	
3 x 6	1	0.8	0.4	1.4	12.5	14.5	0.0070	
	2	0.8	0.4	1.4	12.5	15.5	0.0065	
3 x 10	1	1.0	0.6	1.4	15.5	17.5	0.0070	
	2	1.0	0.6	1.4	15.5	19.0	0.0065	
3 x 16	2	1.0	0.8	1.4	18.0	21.5	0.0052	
	2	1.2	0.8	1.6	22.0	26.0	0.0050	
3 x 25	2	1.2	1.0	1.6	24.5	29.0	0.0044	
3 x 35	2	1.2	1.0	1.6	24.5	29.0	0.0044	
4 x 1.5	1	0.7	0.4	1.2	9.6	11.5	0.011	
	2	0.7	0.4	1.2	9.6	12.0	0.010	
4 x 2.5	1	0.8	0.4	1.2	11.0	13.0	0.010	
	2	0.8	0.4	1.2	11.0	13.5	0.009	
4 x 4	1	0.8	0.4	1.4	12.0	14.5	0.0085	
	2	0.8	0.4	1.4	12.5	15.0	0.0077	
4 x 6	1	0.8	0.6	1.4	14.0	16.0	0.0070	
	2	0.8	0.6	1.4	14.0	17.0	0.0065	
4 x 10	1	1.0	0.6	1.4	16.5	19.0	0.0070	
	2	1.0	0.6	1.4	17.0	20.5	0.0065	
4 x 16	2	1.0	0.8	1.4	20.0	23.5	0.0052	
	2	1.2	1.0	1.6	24.5	28.5	0.0050	
4 x 25	2	1.2	1.0	1.6	27.0	32.0	0.0044	
4 x 35	2	1.2	1.0	1.6	27.0	32.0	0.0044	
5 x 1.5	1	0.7	0.4	1.2	10.0	12.0	0.011	
	2	0.7	0.4	1.2	10.0	12.5	0.010	
5 x 2.5	1	0.8	0.4	1.2	11.5	14.0	0.010	
	2	0.8	0.4	1.2	12.0	14.5	0.009	
5 x 4	1	0.8	0.6	1.4	13.5	16.0	0.0085	
	2	0.8	0.6	1.4	14.0	17.0	0.0077	
5 x 6	1	0.8	0.6	1.4	15.0	17.5	0.0070	
	2	0.8	0.6	1.4	15.5	18.5	0.0065	
5 x 10	1	1.0	0.6	1.4	18.0	21.0	0.0070	
	2	1.0	0.6	1.4	18.5	22.0	0.0065	
5 x 16	2	1.0	0.8	1.6	22.0	26.0	0.0052	
	2	1.2	1.0	1.6	27.0	31.5	0.0050	
5 x 25	2	1.2	1.0	1.6	27.0	31.5	0.0050	
5 x 35	2	1.2	1.2	1.6	30.0	35.0	0.0044	