SLOVENSKI STANDARD

SIST HD 22.13 S1:1998/A1:2000

prva izdaja
junij 2000

Rubber insulated cables of rated voltages up to and including 450/750 V - Part 13: Single and multicore flexible cables, insulated and sheathed with crosslinked polymer and having low emission of smoke and corrosive gases - Amendment A1

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ICS 29.060.20

Referenčna številka
SIST HD 22.13
S1:1998/A1:2000(en)

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HARMONIZATION DOCUMENT

DOCUMENT D'HARMONISATION

HARMONISIERUNGSDOKUMENT

HD 22.13 S1/A1

February 2000

ICS 29.060.20

English version

Rubber insulated cables of rated voltages up to and including 450/750 V
Part 13: Single and multicore flexible cables, insulated and sheathed with crosslinked polymer and having low emission of smoke and corrosive gases

Conducteurs et câbles isolés au caoutchouc, de tension assignée au plus égale à 450/750 V
Partie 13: Câbles souples monoconducteurs et multiconducteurs, sous gaine et isolation polymère réticulé, à faible émission de fumées et de gaz corrosifs

Gummi-isolierte Leitungen mit Nennspannungen bis 450/750 V
Teil 13: Ein-, mehr- und vieladrige Schlauchleitungen mit Isolierhülle und Mantel aus vernetztem Polymer, mit geringer Entwicklung von Rauch und korrosiven Gasen im Brandfall

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This amendment A1 modifies the Harmonization Document HD 22.13 S1:1996; it was approved by CENELEC on 1999-08-01. 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

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Ref. No. HD 22.13 S1:1996/A1:2000 E

Foreword

This amendment was prepared by the Technical Committee CENELEC TC 20, Electric cables, and agreed at the Barcelona meeting (May 1998) to go forward to the Unique Acceptance Procedure.

This amendment has been prepared within the regular maintenance programme which covers all Parts of HD 22.

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as amendment A1 to HD 22.13 S1:1996 on 1999-08-01.

The following dates were fixed:

- latest date by which the existence of the amendment has to be announced at national level	(doa)	2000-02-01
- latest date by which the amendment has to be implemented at national level by publication of a harmonised national standard or by endorsement	(dop)	2000-08-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn	(dow)	2001-08-01

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Contents

Add: "Annex B Proposed amendment to HD 22.1 S3 (normative)".

Clause 1

In paragraph 2 amend "HD 602" to "EN 50267-2-2".

Clause 2

Amend "HD 405.1" and "HD 602" to "EN 50265-2-1" and "EN 50267-2-2" respectively.

Subclause 3.3

In 3.3.2, 3.3.3 and 3.3.4 (twice) amend "HD 602" to "EN 50267-2-2".

Subclause 3.3.5

Replace the existing text of subclause 3.3.5 with the following:

3.3.5 Sheath

The cores shall be covered with a sheath.

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The sheath shall be made up as follows:

(a) For cables with a specified sheath thickness up to and including 2,4 mm - sheath in a single layer, cross-linked compound of type EM 8. It shall comply with the requirements of EN 50267-2-2.

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(b) For cables with a specified sheath thickness greater than 2,4 mm - sheath either in a single layer, cross-linked compound of type EM 8 - or in two layers, with the inner layer made of one of the cross-linked compounds type EM 8 or EM 10 and the outer layer of the cross-linked compound type EM 8.

The cross-linked compounds shall comply with EN 50267-2-2.

The thickness of sheath shall comply with the specified value given in Part 13, Table 1, columns 3, 4 and 5.

The sheath applied in a single layer or the inner layer of the sheath in two layers shall, for cables with 2 to 5 cores, fill the spaces between the cores.

The sheath shall be capable of being removed without damage to the cores.

For non-electrical tests on sheaths in two layers see Part 1, subclause 5.5.2.2.

Subclause 3.3.6

Amend the end of the subclause to read: "... Table 1, columns 6 and 7".

Subclause 3.3.7

Amend the end of the subclause to read: "... Part 1, subclause 3.2".

Table I

Delete existing Table I and replace as attached.

Table II

Amend column 4 against Ref. No. 6.1 to read: "50265-2-1".
Amend column 4 against Ref. No. 6.3 to read: "50267-2-2".

Place Ref. No.6.4 against "Smoke Emission".

Amend Ref. No. 8 to say: "Ozone resistance test for insulation and sheath(**)".

Add new footnote: (**) Not applicable to inner layer of two layer sheath.

Subclause 4.3

In 4.3.2, 4.3.3 and 4.3.5 amend "HD 602" to "EN 50267-2-2".

Subclause 4.3.6

Replace the existing text of subclause 4.3.6 with the following:

4.3.6 Sheath

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The cores shall be covered with a sheath.

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The sheath shall be made up as follows:

(a) For cables with a specified sheath thickness up to and including 2,4 mm - sheath in a single layer, cross-linked compound type EM 8. It shall comply with the requirements of EN 50267-2-2.

(b) For cables with a specified sheath thickness greater than 2,4 mm - either in a single layer, cross-linked compound type EM 8 - or in two layers, with the inner layer made of one of the cross-linked compounds type EM 8 or EM 10 and the outer layer of the cross-linked compound type EM 8.

The cross-linked compounds shall comply with EN 50267-2-2.

The thickness of sheath shall comply with the specified value given in Part 13, Table III, columns 3, 4 and 5.

The sheath shall be capable of being removed without damage to the cores.

For non-electrical tests on sheaths in two layers see Part 1, subclause 5.5.2.2.

Subclause 4.3.7

Amend the end of the subclause to read: "... Table III, columns 6 and 7".

Subclause 4.3.8

Amend the end of the subclause to read: "... Part 1, subclause 3.2".

Table III

Delete the existing Table III and replace as attached.

Table IV

Delete the existing Table IV and replace with as attached.

Annexes

Annex A

Delete reference for IEC 502 and insert:

IEC 60502-1	Power Cables with extruded insulation and their accessories for rated voltages from 1 kV (U_m = 1,2 kV) up to 30 kV (U_m = 36 kV) Part 1: Cables for rated voltages of 1 kV (U_m = 1,2 kV) and 3 kV (U_m = 3,6 kV)

Add new annex B as attached.

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Table I - Dimensions of Type H07ZZ-F

1	2	3	4	5	6	7	8
Number & nominal cross sectional area of conductors	Thickness of insulation specified value	Thickness of sheath Specified value			Mean overall diameter		Minimum insulation resistance at 70°C
		One layer	Two layers		Lower limit	Upper limit	
			Inner layer	Outer layer			
(mm^2)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	MΩ·km
1 x 1,5	0,8	1,4	-	-	5,7	7,1	0,012
1 x 2,5	0,9	1,4	-	-	6,3	7,9	0,010
1 x 4	1,0	1,5	-	-	7,2	9,0	0,0094
1 x 6	1,0	1,6	-	-	7,9	9,8	0,0081
1 x 10	1,2	1,8	-	-	9,5	11,9	0,0076
1 x 16	1,2	1,9	-	-	10,8	13,4	0,0062
1 x 25	1,4	2,0	-	-	12,7	15,8	0,0058
1 x 35	1,4	2,2	-	-	14,3	17,9	0,0049
1 x 50	1,6	2,4	-	-	16,5	20,6	0,0048
1 x 70	1,6	2,6	1,0	1,6	18,6	23,3	0,0041
1 x 95	1,8	2,8	1,1	1,7	20,8	26,0	0,0040
1 x 120	1,8	3,0	1,2	1,8	22,8	28,6	0,0036
1 x 150	2,0	3,2	1,3	1,9	25,2	31,4	0,0036
1 x 185	2,2	3,4	1,4	2,0	27,6	34,4	0,0036
1 x 240	2,4	3,5	1,4	2,1	30,6	38,3	0,0034
1 x 300	2,6	3,6	1,4	2,2	33,5	41,9	0,0033
1 x 400	2,8	3,8	1,5	2,3	37,4	46,8	0,0031
1 x 500	3,0	4,0	1,6	2,4	41,3	52	0,0030
2 x 1	0,8	1,3	-	-	7,7	10,0	0,013
2 x 1,5	0,8	1,5	-	-	8,5	11,0	0,012
2 x 2,5	0,9	1,7	-	-	10,2	13,1	0,010
2 x 4	1,0	1,8	-	-	11,8	15,1	0,0094
2 x 6	1,0	2,0	-	-	13,1	16,8	0,0081
2 x 10	1,2	3,1	1,2	1,9	17,7	22,6	0,0076
2 x 16	1,2	3,3	1,3	2,0	20,2	25,7	0,0062
2 x 25	1,4	3,6	1,4	2,2	24,3	30,7	0,0058

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Table I (continued)

1	2	3	4	5	6	7	8
Number & nominal cross sectional area of conductors	Thickness of insulation specified value	Thickness of sheath Specified value			Mean overall diameter		Minimum insulation resistance at 70°C
		One layer	Two layers		Lower limit	Upper limit	
			Inner layer	Outer layer			
(mm^2)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	MΩ·km
3 x 1	0,8	1,4	-	-	8,3	10,7	0,013
3 x 1,5	0,8	1,6	-	-	9,2	11,9	0,012
3 x 2,5	0,9	1,8	-	-	10,9	14,0	0,010
3 x 4	1,0	1,9	-	-	12,7	16,2	0,0094
3 x 6	1,0	2,1	-	-	14,1	18,0	0,0081
3 x 10	1,2	3,3	1,3	2,0	19,1	24,2	0,0076
3 x 16	1,2	3,5	1,4	2,1	21,8	27,6	0,0062
3 x 25	1,4	3,8	1,5	2,3	26,1	33,0	0,0058
3 x 35	1,4	4,1	1,6	2,5	29,3	37,1	0,0049
3 x 50	1,6	4,5	1,8	2,7	34,1	42,9	0,0048
3 x 70	1,6	4,8	1,9	2,9	38,4	48,3	0,0041
3 x 95	1,8	5,3	2,1	3,2	43,3	54	0,0040
3 x 120	1,8	5,6	2,2	3,4	47,4	60	0,0036
3 x 150	2,0	6,0	2,4	3,6	52	66	0,0036
3 x 185	2,2	6,4	2,5	3,9	57	72	0,0036
3 x 240	2,4	7,1	2,8	4,3	65	82	0,0034
3 x 300	2,6	7,7	3,1	4,6	72	90	0,0033
4 x 1	0,8	1,5	-	-	9,2	11,9	0,013
4 x 1,5	0,8	1,7	-	-	10,2	13,1	0,012
4 x 2,5	0,9	1,9	-	-	12,1	15,5	0,010
4 x 4	1,0	2,0	-	-	14,0	17,9	0,0094
4 x 6	1,0	2,3	-	-	15,7	20,0	0,0081
4 x 10	1,2	3,4	1,4	2,0	20,9	26,5	0,0076
4 x 16	1,2	3,6	1,4	2,2	23,8	30,1	0,0062
4 x 25	1,4	4,1	1,6	2,5	28,9	36,6	0,0058
4 x 35	1,4	4,4	1,7	2,7	32,5	41,1	0,0049
4 x 50	1,6	4,8	1,9	2,9	37,7	47,5	0,0048
4 x 70	1,6	5,2	2,0	3,2	42,7	54	0,0041
4 x 95	1,8	5,9	2,3	3,6	48,4	61	0,0040
4 x 120	1,8	6,0	2,4	3,6	53	66	0,0036
4 x 150	2,0	6,5	2,6	3,9	58	73	0,0036
4 x 185	2,2	7,0	2,8	4,2	64	80	0,0036
4 x 240	2,4	7,7	3,1	4,6	72	91	0,0034
4 x 300	2,6	8,4	3,3	5,1	80	101	0,0033

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