



SLOVENSKI STANDARD
SIST HD 516 S1:1998/A3:1998
01-februar-1998

Guide to use of low voltage harmonized cables - Amendment A3

Guide to use of low-voltage harmonised cables

Anwendungsrichtlinie für harmonisierte Niederspannungsleitungen

Guide d'emploi des câbles harmonisés basse tension

Ta slovenski standard je istoveten z: HD 516 S1:1990/A3:1993

[SIST HD 516 S1:1998/A3:1998](https://standards.iteh.ai/catalog/standards/sist/f200d5a4-7297-4ac2-ba51-06a153e3a326/sist-hd-516-s1-1998-a3-1998)

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ICS:

29.060.20 Kabli Cables

SIST HD 516 S1:1998/A3:1998 **en**

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HARMONIZATION DOCUMENT

HD 516 S1/A3

DOCUMENT D'HARMONISATION

HARMONISIERUNGSDOKUMENT

January 1993

UDC 621.315.3:620.1:614.8

Descriptors: Electric cable, low voltage, guide to use



REPUBLIKA SLOVENIJA
 MINISTRSTVO ZA ZNANOST IN TEHNOLOGIJO
 Urad RS za standardizacijo in meroslovje
 LJUBLJANA

ENGLISH VERSION

SIST.....HD 516 S1/A3.....
 PREVZET PO METODI RAZGLASITVE

-02- 1998

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SIST HD 516 S1:1998/A3:1998

This amendment A3 modifies the Harmonization Document HD 516 S1:1990. It was approved by CENELEC on 1992-12-09. 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 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 and 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

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Ref. No. HD 516 S1:1990/A3:1993 E

Page 2

HD 516 S1:1990/A3:1993

FOREWORD

This amendment A3 to HD 516 S1:1990 was prepared by CLC/TC 20 WG7 following a decision taken at their meeting held in Stockholm in April 1990. Following the CENELEC enquiry (6MP), and by a decision of TC 20 at its meeting in Lisbon (November 1991), it was agreed to include data for 185 mm sizes.

The text of the draft was submitted for formal vote in May 1992 and was approved by CENELEC as amendment A3 to HD 516 S1 on 9 December 1992.

The following dates were fixed:

- latest date of announcement
of the amendment at national level (doa) 1993-03-01
- latest date of publication of
a harmonized national standard (dop) 1993-09-01
- latest date of withdrawal of
conflicting national standards (dow) 1993-09-01



Add to Table 2 the following extra column.

Std	HD 22.6	
Clause	2	
Designation	H01	
Covering	N2	
Shape	circ	circ
Conductor	D	E
Line 1.4 (Heavy) and 1.1-1.3	+	+
Line 2.2 (AD2) and 2.1	+	+
Line 3.1 (AF3)	+	+
Line 4.1 (AG2)	+	+
Line 5.1 (AH3)	+	+
Line 9.2 (Permanent) and 9.1	+	+
Line 10 (Flexing)	+	+
Line 11 (Torsion)	+	+

(Remainder of Lines not mentioned have '-')

Add to Table 4 the following extra lines.

Type	Designation	Standard/Clause
11. Arc Welding Cables	H01N2-D	22.6
	H01N2-E	22.6
<u>Voltage</u>	<u>Cores</u>	<u>Size Range</u>
		<u>normal</u> <u>s/c</u> <u>surface</u>
		<u>Install</u> <u>storage</u>
100/100	1	10-185 +85 250°C +80 (3) -20 +40
100/100	1	10-185 +85 250°C +80 (3) -20 +40

Clause 4.2.2

Amend first paragraph to read.

'The current carrying capacities for fixed wiring are given in HD 384.5.523.'

Those for flexible cables and cords are given in Table 7 or for arc welding cables in Tables 8, 9 and 10. Associated volt drop figures for arc welding cables are given in Table 11.

Add new Tables 8 - 11 as follows

Current Ratings and Volt Drop for Arc Welding Cables

The current ratings given below for arc-welding cables, according to HD22 Part 6, are calculated for sustained currents, 100% duty cycles, using the methods given in IEC Publication 287, for cables in free air at an ambient temperature of 25°C, and a conductor temperature of 85°C.

The current ratings are given in three forms as follows:

Table 8: Current rating for single cycle operation over a maximum period of five minutes.

Table 9: Current rating for repeat cycle operation based on a five minute repeat period.

Table 10: Current rating for repeat cycle operation based on a 10 minute repeat period.

Definitions of the three methods of operation, which as well as current rating are also a determining factor in choice of conductor size, are as given below:

Single cycle operation as used in Table 8 is defined as a single on-load period not exceeding five minutes. The on-load time period is expressed as a percentage of five minutes, and is called the percentage duty cycle. For percentage duty cycles not stated in the table, the next higher percentage duty cycle rating should be used or reference should be made to the cable manufacturer.

Repeat cycle operation as used in Table 9 and Table 10 is defined as a periodically switched constant load with an on-load period followed by an off-load period, which is repeated. The repeat periods being five minutes for Table 9 and 10 minutes for Table 10. The on-load time period is expressed as a percentage of the repeat period, and is called the percentage duty cycle. For percentage duty cycles not stated in the tables, the next higher percentage duty cycle rating should be used or reference should be made to the cable manufacturer.

Where the ambient temperature differs from 25°C, the rating should be corrected by multiplying it by the appropriate factor shown below.

Ambient temperature °C	30	35	40	45
Factor	0.96	0.91	0.87	0.82

Where long cable runs are involved, it may be necessary to choose the cable size on the basis of voltage drop. The values given below are for 10 metres of cable carrying 100 amp. For longer cable lengths and higher currents the values should be increased pro rata. The values in the table apply to direct current circuits only. In alternating current circuits the values will be higher, the amount will depend on the spacing between the two cables forming the welding circuit. To minimise the effects of alternating current on voltage drop, the two cables forming the welding circuit should be kept as close together as possible. When in use, welding cables should not be coiled.

TABLE 8

CURRENT RATING FOR SINGLE CYCLE OPERATION OVER A MAXIMUM PERIOD
OF FIVE MINUTES

CURRENT RATING				
CSA mm ²	100% A	85% A	60% A	35% A
10	100	103	108	122
16	135	145	175	230
25	180	195	230	300
35	225	245	290	375
50	285	305	365	480
70	355	385	460	600
95	430	470	560	730
120	500	540	650	850
150	580	630	750	980
185	665	720	860	1120

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TABLE 9
CURRENT RATING FOR REPEAT CYCLE OPERATION BASED ON
A FIVE MINUTE REPEAT PERIOD

CURRENT RATING							
CSA mm ²	100% A	85% A	80% A	60% A	35% A	20% A	8% A
10	100	101	102	106	119	143	206
16	135	138	140	148	173	212	314
25	180	186	189	204	244	305	460
35	225	235	239	260	317	400	608
50	285	299	305	336	415	529	811
70	355	375	383	426	531	682	1053
95	430	456	467	523	658	850	1319
120	500	532	545	613	776	1006	1565
150	580	619	634	716	911	1184	1845
185	665	711	729	826	1054	1374	2145

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TABLE 10
CURRENT RATING FOR REPEAT CYCLE OPERATION BASED ON
A 10 MINUTE REPEAT PERIOD

CURRENT RATING							
CSA mm ²	100% A	85% A	80% A	60% A	35% A	20% A	8% A
10	100	100	100	101	106	118	158
16	135	136	136	139	150	174	243
25	180	182	183	190	213	254	366
35	225	229	231	243	279	338	497
50	285	293	296	316	371	457	681
70	355	367	373	403	482	602	908
95	430	448	456	498	606	765	1164
120	500	524	534	587	721	917	1404
150	580	610	622	689	853	1090	1676
185	665	702	717	797	995	1277	1971

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