SLOVENSKI STANDARD
SIST HD 516 S2:1999/A1:2004

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Vodilo za uporabo nizkonapetostnih harmoniziranih kablov

Guide to use of low voltage harmonized cables

Leitfaden für die Verwendung harmonisierter Niederspannungsstarkstromleitungen

Guide d'emploi des câbles harmonisés à basse tension

Ta slovenski standard je istoveten z: **HD 516 S2:1997/A1:2003**

ICS:

29.060.20 Kabli Cables

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HARMONIZATION DOCUMENT **HD 516 S2/A1**

DOCUMENT D'HARMONISATION

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English version

Guide to use of low voltage harmonized cables

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Leitfaden für die Verwendung harmonisierter Niederspannungs-starkstromleitungen

This amendment A1 modifies the Harmonization Document HD 516 S2:1997; it was approved by CENELEC on 2003-02-01. 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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, 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

Ref. No. HD 516 S2:1997/A1:2003 E

Foreword

This amendment was prepared by the Technical Committee CENELEC TC 20, Electric cables, and agreed at the Paris meeting (May 2001) to go forward to the Unique Acceptance Procedure.

This amendment has been prepared within the regular maintenance programme.

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as amendment A1 to HD 516 S2:1997 on 2003-02-01.

The following dates were fixed:

- latest date by which the existence of the amendment has to be announced at national level	(doa)	2003-08-01
- latest date by which the amendment has to be implemented at national level by publication of a harmonised national standard or by endorsement	(dop)	2004-02-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn	(dow)	2005-02-01

Subclause 4.2.4

In the 2nd indent of the examples ***replace*** "overcurrent" by "current".

Subclause 4.4.5

Add *the following paragraph at the end of the subclause:*

For the particular case of welding cables, either for industrial arc welding or for hobby welding, the use of PVC covered cables should not be permitted. Only those types harmonised in HD 22.6, which are cross-linked rubber types, are recommended. These cross-linked types meet relevant requirements relating to safety, including a special test for resistance to the hot particles that are commonly generated during welding.

Table 1B

Add *a new column for HD 22.3, Clause 4, H05SS-K.*

As for H05SJ-K, Clause 2.

Supplement to Table 1B

Add *the following information for Part 3, Clause 4, H05SS-K*

1	2	3
Part No.	**Recommended use**	**Comments**
Part 3 Clause 4 (H05SS-K) Heat resistant silicone rubber sheathed single core cables	At high temperature; for fixed installation in and on lamps in appliances, especially when the requirement is to have a cable with both insulation and sheath.	This cable may be damaged by contact with sharp edges and by abrasion. Care should be taken to avoid this in installation and in use.

Table 2A

Under the first column for HD 21.5:

- **amend** the Clause numbers to read "2"
- **delete** the sub-column for conductor type "H"

Supplement to Table 2A

Delete *the entry for Part 5, Clause 3, flat non-sheathed cord, H03VH-H.*

Amend *the entries for HD 21.5, Clause 5 by adding in column 2 (Recommended use) the additional sentence:*

"Also, excluding flat cables, for hand-held inspection lamps."

and by ***amending*** *the final entry in column 3 to read:*

"Unsuitable for permanent outdoor use, ……"

Amend *the entries for HD 21.13 such that the clause numbers in column 1 are respectively:*

"Clause 3 (not 2) for H05VV5-F, and Clause 4 (not 3) for H05VVC4V5-K"

Table 2B - Intended Usage of Rubber Flexible Cables or Cords

Delete *the entries for HD 22.4, Clause 2, H03RT-F, and HD 22.14, Clause 4, H03RV4-H*

Add new entries as below:

Standard	HD 22.14	HD 22.15		HD 22.16
Clause numbers	6	3	4	3/4
Designation	H03RT	H05SS(T)	H05SSD3(T)	H07RN8
Cross section shape	Circ	Circ	Circ	Circ
Conductor type	H	F	F	F
1. DUTY (1)				
1.1 Extra light	+	+	+	+
1.2 Light	+	+	+	+
1.3 Ordinary	+	+	+	+
1.4 Heavy	-	-	-	+
2. PRESENCE OF WATER				
2.1 Condition AD1 (2)	+	+	+	+
2.2 Condition AD2 (2)	+	+	+	+
2.3 Condition AD6 (2)	-	-	-	+
2.4 Condition AD8 (2) (up to 10m)	-	-	-	+
3. CORROSIVE OR POLLUTING SUBSTANCES				
3.1 Condition AF3 (2)	-	-	-	+
4. IMPACT				
4.1 Condition AG2 (2)	-	-	-	+
5. VIBRATIONS				
5.1 Condition AH3 (2)	-	-	-	+
6. FLORA				
6.1 Condition AK2 (2)	-	-	-	-
7. FAUNA				
7.1 Condition AL2 (2)	-	-	-	-
8. OUTDOOR USE(3)				
8.1 Temporary (5)	+	+	+	+
8.2 Permanent (5)	-	-(8)	+	+
9. FREQUENT FLEXING	+	+	-	+
10. FREQUENT TORSION	+	+	-	+

Supplement to Table 2B

Delete *the entry for Part 4, Clause 2, H03RT-F.*

Amend *the entries for HD 22.4, Clause 3, and HD 22.10 by adding in column 2 (Recommended use) the additional sentence:*

"Also for hand-held inspection lamps."

Amend *the entry for HD 22.4, Clauses 5 and 6, by adding in column 2 (Recommended use) the additional sentences:*

'Unsuitable for situations involving permanent immersion in water. Cables for such applications are specified in HD 22.16.'

Amend *the entry for HD 22.4, Clause 5, column 2 to correct the reference in line 4:*

“subclause 5.3.2(b) not 4.3.2(b)”

Replace *the entries for Part 12, Clauses 3 (H05BB-F) and 4 (H07BB-F) and for Part 14 by the following:*

1	2	3
Part No	**Recommended use**	**Comments**
PART 12 EPR/EPR cords and flexible cables Clause 3 (H05BB-F)	For general use in domestic premises, kitchens and offices and for supplying appliances where the cables are subjected to low mechanical stresses (eg., cooking appliances, soldering irons, toasters, hand-held inspection lamps). Also for low temperature uses.	Unsuitable for permanent use outdoors, in agriculture, in industrial* or agricultural workshops or for supplying non-domestic tools, but where a black sheath is specified and tested against appropriate requirements, or the manufacturer has demonstrated suitable alternative protection, permanent outdoor use may be permitted. Suitable for use at maximum conductor temperature of 90 °C and at a minimum temperature of –40 °C. Skin contact should be avoided when operating at high temperature.
PART 12 EPR/EPR cords and flexible cables Clause 4 (H07BB-F)	In dry, humid or moist rooms, in open air, in workshops having an explosive atmosphere** (but see also Subclause 5.3.2(b)); for medium mechanical stresses, eg. for industrial and agricultural workshop appliances, large boiling installations, heating plates, inspection lamps, electrical tools such as drills, circular saws, domestic electric tools, and also for transportable motors or machines on building sites or in agricultural workings, etc; also for fixed installations, eg. on rough-cast in temporary buildings and huts for accommodation purposes; suitable for the wiring of constructional components in lifting appliances, machinery, etc. Also for low temperature outdoor use with caravans, car heaters and at camping sites.	Use up to 1 000 V, a.c. is permitted for fixed, protected installation (in conduit or appliances) and also for motor connections of hoisting motors and the like. (For d.c. use see subclause 5.1). Suitable for use at maximum conductor temperature of 90 °C and at a minimum temperature of –40 °C. Skin contact should be avoided when operating at high temperature. For permanent outdoor use a black sheath is required.
Part 14 Cords for extra flexible applications Clauses 3, 5 and 6 H03RR-H H03V4V4-H H03RT-H	Primarily intended for applications where high flexibility is required and where accidental contact with hot surfaces is possible, e.g. electric irons. Can be used in domestic premises, kitchens, offices; for supplying hand-held or hand-operated appliances;	Unsuitable for permanent use outdoors in agriculture, in industrial* or agricultural workshops or for supplying non-domestic tools.
* Admissible, however, in tailors' workshops and similar premises. ** In some countries the usage in explosive atmospheres may be precluded.		

***Add** the following entries for Part 15 and Part 16:*

1	2	3
Part No.	**Recommended use**	**Comments**
Part 15 Clause 3 (H05SS-F or H05SST-F) Heat resistant silicone rubber sheathed multicore flexible cables without strain-bearing element	At high temperature or in contact with hot surfaces: - for fixed installation within and attached to lamps in industrial installations provided mechanical protection is assured; - for use in equipment which requires some flexing in use and which are subject to low mechanical stresses.	This cable may be damaged by contact with sharp edges and by abrasion. Care should be taken to avoid this in installation and in use, particularly for unbraided cables. Flammability performance of braided cables should be confirmed with the manufacturer before installation. Maximum permissible load: 15 N/mm² of the total copper cross-sectional area Suitable for use at maximum conductor temperature of 180 °C. Skin contact should be avoided when operating at high temperature.
Part 15 Clause 4 (H05SSD3-K or H05SSD3T-K) Heat resistant silicone rubber sheathed multicore cables with strain-bearing element	At high temperature or in contact with hot surfaces: - for fixed installation within and attached to lamps in industrial installations provided mechanical protection is assured.	This cable may be damaged by contact with sharp edges and by abrasion. Care should be taken to avoid this in installation and in use, particularly for unbraided cables. Flammability performance of braided cables should be confirmed with the manufacturer before installation. Maximum permissible load: 15 N/mm² of the total copper cross-sectional area, if the strain-bearing element is not used; 60 N in the other case. Suitable for use at maximum conductor temperature of 180 °C. Skin contact should be avoided when operating at high temperature.
Part 16 Clause 3 Water-resistant polychloroprene or other equivalent synthetic elastomer sheathed flexible cable H07RN8-F	As for Part 4, Clause 5. Particularly for use in fresh water up to 10 m depth and a maximum water temperature up to 40 °C such as the connection of submersible pumps or similar applications	As for Part 4, Clause 5 Unsuitable for under-water power transmission or installation in a waterway or where it is possible that mechanical damage might occur and cause a hazard.
Part 16 Clause 4 Water-resistant polychloroprene or other equivalent synthetic elastomer sheathed flexible cable H07RN8-F (multicore)	As for Part 16, Clause 3, but also for use with machine tools	As for Part 16, Clause 3.

Table 3B

For item 1, **add** a new line for H05SS-K constructions; the entries in columns 2-12 to be:

H05SS-K	22.3	4	300/500	1	0,75-2,5	+180	+250	+180	-25	+40

Table 4A

Delete the entry for cable type 2, flat non-sheathed cord.

Against cable type 10, Heat resistant ordinary PVC sheathed cord, amend column 7 for H05V2V2H2-F to read:

0,5 - 1

Table 4B

Against Cable Type 10, EPR/EPR – 90 °C, **amend** column 11 "Temperature: Transportation, installation and handling (°C min.)" for H05BB-F and H07BB-F from "-25 °C" to "-40 °C".