

SLOVENSKI STANDARD

SIST EN 50565-2:2014

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Nadomešča:

SIST HD 516 S2:1999

SIST HD 516 S2:1999/A1:2004

SIST HD 516 S2:1999/A2:2009

Električni kabli - Navodilo za uporabo kablov z naznačeno napetostjo, ki ne presega 450/750 V - 2. del: Podrobno navodilo za vrste kablov po EN 50525

Electric cables - Guide to use for cables with a rated voltage not exceeding 450/750 V - Part 2: Specific guidance related to EN 50525 cable types

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Kabel und Leitungen - Leitfaden für die Verwendung von Kabeln und isolierten Leitungen mit einer Nennspannung nicht über 450/750 V - Teil 2: Aufbaudaten und Einsatzbedingungen der Kabel- und Leitungsbauarten nach EN 50525

Câbles électriques - Guide d'emploi des câbles avec une tension assignée n'excédant pas 450/750 V - Partie 2: Lignes directrices spécifiques concernant les types de câbles de l'EN 50525

Ta slovenski standard je istoveten z: EN 50565-2:2014

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EUROPEAN STANDARD
NORME EUROPÉENNE
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EN 50565-2

April 2014

ICS 29.060.20

Supersedes HD 516 S2:1997 (partially) + A1:2003 (partially) + A2:2008 (partially)

English version

**Electric cables -
Guide to use for cables with a rated voltage not exceeding 450/750 V
(U_0/U) -
Part 2: Specific guidance related to EN 50525 cable types**

Câbles électriques -
Guide d'emploi des câbles avec une
tension assignée n'excédant pas 450/750
V (U_0/U) -
Partie 2: Lignes directrices spécifiques
concernant les types de câbles de l'EN
50525

Kabel und Leitungen -
Leitfaden für die Verwendung von Kabeln
und isolierten Leitungen mit einer
Nennspannung nicht über 450/750 V
(U_0/U) - Teil 2: Aufbaudaten und
Einsatzbedingungen der Kabel- und
Leitungsbauarten nach EN 50525

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Foreword

This document (EN 50565-2:2014) has been prepared by CLC/TC 20 "Electric cables".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2015-02-17
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2017-02-17

This document together with Part 1 supersedes HD 516 S2:1997.

EN 50565-1:2014 and EN 50565-2:2014 includes the following significant technical changes with respect to HD 516 S2:1997:

Both parts of EN 50565 refer to cable types specified in EN 50525, replacing the reference to the HD21 and HD22 cable types. Part 1 provides general recommendations and guidance, Part 2 covers specific guidance for each cable type in EN 50525, like designation, constructional details, recommendations for installation, conditions and limits of operation, temperature limits and recommended use/suitability. This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

Introduction

This European Standard provides guidance for equipment manufacturers, installers and end-users on the properties of low voltage electric cables, and the limitations that are deemed to be necessary in order to safeguard life, buildings, and goods. It also gives a reasonable certainty on cable life time expectation relevant to its application, i.e. the duration of acceptable performance considered as reasonable for a cable used in a fixed installation for the distribution of electricity in a building is more than that for flexible cable.

The information is given in the form of limiting values and is illustrated by examples, which are not exhaustive but which indicate ways by which safety can be obtained.

It is not possible to cover all the uses for which the installers or users may wish to use a specific type of cable. The use other than the recommended ones could result in a lowering of safety and/or in a reduction in the expected life of the cable. If a cable is intended to be used outside of the recommended uses, the cable manufacturer should be consulted for advice.

This European Standard is to be read in conjunction with EN 50565-1:2014, which gives general recommendations and guidance.

Additional information on installation practice is given in the HD 384/HD 60364 series of specifications, and national regulations/codes of practice.

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1 Scope

This European Standard provides guidance to help installers, cabling designers and end users to understand the characteristics of electric cables with a rated voltage not exceeding 450/750 V (U_0/U) or equivalent d.c. voltages, so that the cable can be selected, installed and operated in a safe way. It is applicable to those cable types that are specified in EN 50525 (all parts).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 50525 (all parts), *Electric cables – Low voltage energy cables of rated voltages up to and including 450/750 V (U_0/U)*

EN 50565-1:2014, *Electric cables – Guide to use for cables with a rated voltage not exceeding 450/750 V – Part 1: General guidance*

HD 384/HD 60364 (all parts), *Electrical installations of buildings / Low-voltage electrical installations (IEC 60364, all parts)*

IEC 60050-461, *International Electrotechnical Vocabulary – Electric cables*

3 Terms and definitions (standards.iteh.ai)

For the purposes of this document, the terms and definitions given in EN 50565-1:2014, IEC 60050-461 and HD 384/HD 60364 series apply.

Further information on the terms used in the following tables may be found in Annex A.

4 Specific cable types

Specific guidance for each cable type is organised in tabular format.

There are two tables for each cable type.

a) Table A for each relevant cable shows:

- harmonised designations,
- constructional details for the cable,
- recommendations for installation (fixed cable types) or conditions and limits of operation (flexible cables),
- recommended temperature limits.

b) Table B for each relevant cables shows:

- recommended use,
- comments about limitations and suitability,

The information is given in the form of limiting values and is illustrated by examples, which are not exhaustive but which indicate ways by which safety can be obtained.

It is not possible to cover all the uses for which the installers or users may wish to use a specific type of cable. The use other than the recommended ones could result in a lowering of safety and/or in a reduction in the expected life of the cable. If a cable is intended to be used outside of the recommended uses, the cable manufacturer should be consulted for advice.

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Table 1A – Cables conforming to EN 50525-2-11 – Constructional details and limiting conditions (concluded)

Parameter	Unit	Clause 4.1		Clause 4.2		Clause 5.1		Clause 5.2		Clause 5.3
		H03VV-F	H03VVH2-F	H05VV-F	H05VVH2-F	H03V2V2-F	H03V2V2H2-F	H05V2V2-F	H05V2V2H2-F	H05V2V2D3-F
Flexing										
Frequent flexing		+	+ ^b	+	+ ^b	+	+ ^b	+	+ ^b	—
Temperature										
Maximum conductor operating temperature normal	°C	60	60	60	60	90	90	90	90	90
Maximum conductor operating temperature short circuit (Maximum allowable time 5 s)	°C	150	150	150	150	150	150	150	150	150
Maximum cable surface	°C	50	50	50	50	80	80	80	80	80
Maximum storage	°C	40	40	40	40	40	40	40	40	40
Minimum installation and handling	°C	5	5	5	5	5	5	5	5	5
Key	<p>“+” = Acceptable “—” = Not suitable</p> <p>https://standards.iteh.ai/catalog/standards/sist/5cc880bc-6d2a-41cf-b4a-77dda79dae9c/sist-en-50565-2-2014</p>									
^a	Cables with cross-sectional area of 0,5 mm ² shall be used in lengths not exceeding 2 m and their current shall not exceed 3 A.									
^b	Circular cables give a longer life than flat cables when subjected to frequent flexing.									

Table 1B – Cables conforming to EN 50525-2-11 – Specific guidance for use

Cable type	Clause reference	Recommendation for use	Comments
Light duty PVC sheathed cable, H03VV-F (circular) and H03VVH2-F (flat)	Clause 4.1	use in domestic premises and offices, for light duty applications and appliances, (e.g. music centers, table and standard lamps, office machines).	The 60 °C maximum conductor operating temperature of these cables takes into account the stated recommendations for use. If however the cables are to be used inside equipment or the like where no contact with skin can be guaranteed then the cables are suitable for a maximum conductor operating temperature of 70 °C.
Ordinary duty PVC sheathed cable, H05VV-F (circular) and H05VVH2-F (flat)	Clause 4.2	use in domestic premises and offices, for ordinary duty applications and household appliances, including in damp premises; (e.g. vacuum cleaners, washing machines, spin dryers, and refrigerators); use outdoors for temporary periods of short duration	
Light duty heat-resistant PVC sheathed cable for maximum conductor temperature of 90 °C, H03V2V2-F (circular) and H03V2V2H2-F (flat)	Clause 5.1	use in domestic premises, kitchens and offices, for light duty applications and light portable appliances; use in high ambient temperatures and internal use in equipment where there is no risk of contact with hot parts	Skin contact should be avoided when operating these cables unless calculations show that the surface temperature does not exceed 50 °C.
Ordinary duty heat-resistant PVC sheathed cable for maximum conductor temperature of 90 °C, H05V2V2-F (circular) and H05V2V2H2-F (flat)	Clause 5.2	use in domestic premises and offices, for ordinary duty applications and household appliances, including in damp premises; use in high ambient temperatures and internal use in equipment where there is no risk of contact with hot parts; use outdoors for temporary periods of short duration	Skin contact should be avoided when operating these cables unless calculations show that the surface temperature does not exceed 50 °C.
Ordinary duty heat-resistant PVC sheathed cable, with strain-bearing member, for maximum conductor temperature of 90 °C, H05V2V2D3-F	Clause 5.3	connection of pendant lamp fittings in domestic premises and offices where the use of a strain bearing is required; use in high ambient temperatures; use outdoors for temporary periods of short duration	Skin contact should be avoided when operating these cables unless calculations show that the surface temperature does not exceed 50 °C. Care shall be taken to ensure that the mechanical load is carried only by the strain-bearing member, not by the cable conductors. The breaking load of the strain bearing member is at least 250 N. The usable load will be at least 50 % lower.

Table 2A – Cables conforming to EN 50525-2-12 – Constructional details and limiting conditions

Parameter	Unit	Clause 4.1		Clause 4.2	
		H03VVH8-F	H03VVH2H8-F	H05VVH8-F	H05VVH2H8-F
Constructional details					
Nominal voltage rating	V	300/300	300/300	300/500	300/500
Conductor class		5	5	5	5
Number of cores		2 to 3	2	2 to 3	2
Cross-sectional area size range	mm ²	0,5 to 0,75 ^a	0,5 to 0,75 ^a	0,75 to 1,5	0,75
Duty					
Extra light		+	+	+	+
Light		+	+	+	+
Ordinary		—	—	+	+
Heavy		—	—	—	—
Presence of water					
Condition AD1		+	+	+	+
Condition AD2		—	—	+	+
Condition AD6		—	—	—	—
Condition AD7		—	—	—	—
Condition AD8		—	—	—	—
Corrosive or polluting substances condition AF3					
		—	—	+	+
Impact condition AG2					
		—	—	—	—
Vibrations condition AH3					
		—	—	—	—
Outdoor use					
Intermittent and temporary periods of short duration		—	—	+	+
Permanent		—	—	—	—
Flexing					
Frequent flexing		+	+ ^b	+	+ ^b

Table 2A – Cables conforming to EN 50525-2-12 – Constructional details and limiting conditions (concluded)

Parameter	Unit	Clause 4.1		Clause 4.2	
		H03VVH8-F	H03VVH2H8-F	H05VVH8-F	H05VVH2H8-F
Temperature					
Maximum conductor operating temperature normal	°C	60	60	60	60
Maximum conductor operating temperature short circuit (Maximum allowable time 5 s)	°C	150	150	150	150
Maximum cable surface	°C	50	50	50	50
Maximum storage	°C	40	40	40	40
Minimum installation and handling	°C	5	5	5	5
Key “+” = Acceptable “—” = Not suitable					
^a Cables with cross-sectional area of 0,5 mm ² shall be used in lengths not exceeding 2 m and their current shall not exceed 3 A.					
^b Circular cables give a longer life than flat cables when subjected to frequent flexing.					

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Table 2B – Cables conforming to EN 50525-2-12 – Specific guidance for use

Cable type	Clause reference	Recommendation for use	Comments
Extensible leads Light duty PVC sheathed cable, H03VVH8-F (circular) and H03VVH2H8-F (flat)	Clause 4.1	use in domestic premises and offices, for light duty applications and appliances, (e.g. music centers, table and standard lamps, office machines).	
Extensible leads Ordinary duty PVC sheathed cable, H05VVH8-F (circular) and H05VVH2H8-F (flat)	Clause 4.2	use in domestic premises and offices, for ordinary duty applications and household appliances, including in damp premises; (e.g. washing machines, spin dryers, and refrigerators); use outdoors for temporary periods of short duration	

Table 3A – Cables conforming to EN 50525-2-21, Clauses 4 and 5 – Constructional details and limiting conditions

Parameter	Unit	Clause 4.1	Clause 4.2	Clause 4.3	Clause 4.4	Clause 5.1	Clause 5.2
		H05RR-F	H05RN-F	H07RN-F	H07RN-F	H07RN8-F	H07RN8-F
Constructional details							
Nominal voltage rating	V	300/500	300/500	450/750 ^b	450/750 ^b	450/750 ^b	450/750 ^b
Conductor class		5	5	5	5	5	5
Number of cores		2 to 5	2 to 4	1 to 5	6 to 36	1 to 5	6 to 36
Cross-sectional area size range	mm ²	0,75 to 6	0,75 to 1	1 to 630	1,5 to 4	1 to 630	1,5 to 4
Duty							
Extra light		+	+	+	+	+	+
Light		+	+	+	+	+	+
Ordinary		+	+	+	+	+	+
Heavy		—	—	+	+	+	+
Presence of water							
Condition AD1		+	+	+	+	+	+
Condition AD2		+	+	+	+	+	+
Condition AD6		—	—	+	+	+	+
Condition AD7		—	—	—	—	+	+
Condition AD8		—	—	—	—	+ (up to 10 m depth)	+ (up to 10 m depth)
Corrosive or polluting substances condition AF3							
		—	+	+	+	+	+
Impact condition AG2							
		—	—	+	+	+	+
Vibrations condition AH3							
		—	—	+	+	+	+
Outdoor use							
Intermittent and temporary periods of short duration		+	+	+	+	+	+
Permanent		—	+	+	+	— ^a	— ^a