SLOVENSKI STANDARD
SIST EN 50525-2-51:2011

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Električni kabli - Nizkonapetostni energetski kabli z nazivno napetostjo do vključno 450/750 V (U0/U) - 2-51. del: Kabli za splošno uporabo - Proti olju odporni signalni kabli s termoplastično PVC izolacijo

Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U0/U) - Part 2-51: Cables for general applications - Oil resistant control cables with thermoplastic PVC insulation

Kabel und Leitungen - Starkstromleitungen mit Nennspannungen bis 450/750 V (U0/U) - Teil 2-51: Starkstromleitungen für allgemeine Anwendungen - Ölbeständige Steuerleitungen mit thermoplastischer PVC-Isolierung

Câbles électriques - Câbles d'énergie basse tension de tension assignée au plus égale à 450/750 V (U0/U) - Partie 2-51: Câbles pour applications générales - Câbles de contrôle résistants à l'huile, isolés en PVC thermoplastique

Ta slovenski standard je istoveten z: **EN 50525-2-51:2011**

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29.060.20 Kabli Cables

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EUROPEAN STANDARD

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Supersedes HD 21.13 S1:1995 + A1:2001

English version

Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U_0/U) - Part 2-51: Cables for general applications - Oil resistant control cables with thermoplastic PVC insulation

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Kabel und Leitungen -
Starkstromleitungen mit Nennspannungen bis 450/750 V (U_0/U) -
Teil 2-51: Starkstromleitungen für allgemeine Anwendungen -
Ölbeständige Steuerleitungen mit thermoplastischer PVC-Isolierung

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

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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 European Standard was prepared by the Technical Committee CENELEC TC 20, Electric cables.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50525-2-51 on 2011-01-17.

This document, which is one of a multipart series, supersedes HD 21.13 S1:1995 + A1:2001.

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

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2012-01-17
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2014-01-17

Contents

Tables

1 Scope

This European Standard applies to oil resistant polyvinyl chloride insulated and sheathed flexible cables. Screened and non-screened types are included.

The cables are of rated voltages U_0/U 300/500 V.

The cables are intended for the interconnection of manufacturing machines.

The maximum conductor operating temperature for the cables in this standard is 70 °C.

NOTE HD 516 contains extensive guidance on the safe use of cables in this standard.

This EN 50525-2-51 should be read in conjunction with EN 50525-1, which specifies general requirements.

2 Normative references

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

NOTE One or more references to the standards below are in respect of a specific sub-division of that standard, for instance a clause, a table, a class or a type. Cross-references to these standards are undated and, at all times, the latest version applies.

EN 50363-3		Insulating, sheathing and covering materials for low voltage energy cables – Part 3: PVC insulating compounds
EN 50363-4-1		Insulating, sheathing and covering materials for low voltage energy cables – Part 4-1: PVC sheathing compounds
EN 50395		Electrical test methods for low voltage energy cables
EN 50396		Non electrical test methods for low voltage energy cables
EN 50525-1		Electric cables – Low voltage energy cables of rated voltages up to and including 450/750 V (U_0/U) – Part 1: General requirements
EN 60228		Conductors of insulated cables (IEC 60228)
EN 60332-1-2		Tests on electric and optical fibre cables under fire conditions – Part 1-2: Test for vertical flame propagation for a single insulated wire or cable – Procedure for 1 kW pre-mixed flame (IEC 60332-1-2)
EN 60811-1-2		Insulating and sheathing materials of electric and optical cables – Common test methods – Part 1-2: General application – Thermal ageing methods (IEC 60811-1-2)
EN 60811-1-4		Insulating and sheathing materials of electric and optical cables – Common test methods – Part 1-4: General application – Tests at low temperature (IEC 60811-1-4)
HD 308		Identification of cores in cables and flexible cords
IEC 60502-1	2004	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)

3 Terms and definitions

For the purposes of this document the terms and definitions given in Clause 3 of EN 50525-1 apply.

4 General purpose cables

4.1 Control cables – H05VV5-F

4.1.1 Construction

4.1.1.1 Conductor

The conductor shall be class 5, according to EN 60228.

4.1.1.2 Sizes of cable

The sizes of cable shall be 0,5 mm^2 to 2,5 mm^2.

The number of conductors shall be from 2 up to 60.

NOTE The preferred number of conductors is one of the following: 2, 3, 4, 5, 6, 7, 12, 18, 27, 36, 48 and 60.

4.1.1.3 Insulation

The insulation shall be polyvinyl chloride compound of Type TI 2 to EN 50363-3.

4.1.1.4 Assembly

The cables shall be assembled as follows:

The cores shall be twisted together, if necessary in several concentric layers.

A tape may be applied over each layer. It may cover the cores partly or fully.

For two core cables, the space between the cores shall be filled either by separate fillers or by the sheath filling the interstices.

A centre-core is not permitted.

NOTE A centre-filler of suitable material may be applied.

Assemblies with three or more cores shall have one core coloured green-and-yellow.

4.1.1.5 Core identification

For cables with up to and including five cores, identification shall either be as for cables with more than five cores, or by colours in accordance with HD 308.

For cables with more than five cores, the identification shall be in accordance with Annex D of EN 50525-1.

4.1.1.6 Sheath

The sheath shall be polyvinyl chloride compound of Type TM 5 to EN 50363-4-1.

It is permitted for the sheath to fill the spaces between the cores, thus forming a filling.

4.1.1.7 Marking

The cable shall be marked with the CENELEC code H05VV5-F. The marking shall comply with Clause 6 of EN 50525-1.

4.1.2 Requirements

Each cable shall comply with the appropriate requirements given in EN 50525-1, and the particular requirements of this Part.

Testing shall be in accordance with Annex A, and the relevant tests indicated in column 6.

The dimensions of the cables shall conform to Table B.1 for the relevant size.

NOTE For cables with a non-preferred number of cores, see Annex C.

The requirements to be met for the compatibility test shall be as given in Annex D.

4.2 Screened control cables – H05VVC4V5-K

4.2.1 Construction

4.2.1.1 Conductor

The conductor shall be class 5, according to EN 60228.

4.2.1.2 Sizes of cable

The sizes of cable shall be 0,5 mm^2 to 2,5 mm^2.

The number of conductors shall be from 2 up to 60.

NOTE The preferred number of conductors is one of the following: 2, 3, 4, 5, 6, 7, 12, 18, 27, 36, 48 and 60.

4.2.1.3 Insulation

The insulation shall be polyvinyl chloride compound of Type TI 2 to EN 50363-3.

4.2.1.4 Assembly

The cables shall be assembled as follows:

The cores shall be twisted together, if necessary in several concentric layers.

A tape may be applied over each layer. It may cover the cores partly or fully.

For two core cables, the space between the cores shall be filled either by separate fillers or by the inner sheath filling the interstices.

A centre-core is not permitted.

NOTE A centre-filler of suitable material may be applied.

Assemblies with three or more cores shall have one core coloured green-and-yellow.

4.2.1.5 Core identification

For cables with up to and including five cores, identification shall either be as for cables with more than five cores, or by colours in accordance with HD 308.

For cables with more than five cores, the identification shall be in accordance with Annex E of EN 50525-1.

4.2.1.6 Inner sheath

The inner sheath shall be polyvinyl chloride compound of Type TM 2 to EN 50363-4-1 applied around the core assembly.

It is permitted for the inner sheath to fill the spaces between the cores, thus forming a filling.

4.2.1.7 Screen

The screen shall be applied over the inner sheath, in the form of a braid of plain or tinned copper wires.

4.2.1.8 Sheath

The sheath shall be polyvinyl chloride compound of Type TM 5 to EN 50363-4-1 applied around the screen.

4.2.1.9 Marking

The cable shall be marked with the CENELEC code H05VVC4V5-K. The marking shall comply with Clause 6 of EN 50525-1.

4.2.2 Requirements

Each cable shall comply with the appropriate requirements given in EN 50525-1, and the particular requirements of this Part.

Testing shall be in accordance with Annex A, and the relevant tests indicated in column 7.

The dimensions of the cables shall conform to Table B.2 for the relevant size.

NOTE For cables with a non-preferred number of cores, see Annex C.

The transfer impedance for the cable shall not exceed 250 mΩ/m at 30 MHz.

The requirements to be met for the compatibility test shall be as given in Annex D.