SLOVENSKI STANDARD
SIST EN 50525-2-83:2011

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Električni kabli - Nizkonapetostni energetski kabli z nazivno napetostjo do vključno 450/750 V - 2-83. del: Kabli za splošno uporabo - Večžilni kabli z zamreženo elastomerno izolacijo iz silikonske gume

Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U0/U) - Part 2-83: Cables for general applications - Multicore cables with crosslinked silicone rubber insulation

Kabel und Leitungen - Starkstromleitungen mit Nennspannungen bis 450/750 V (U0/U) - Teil 2-83: Starkstromleitungen für allgemeine Anwendungen - Mehradrige Leitungen mit vernetzter Silikon-Isolierung

Câbles électriques - Câbles d’énergie basse tension de tension assignée au plus égale à 450/750 V (U0/U) - Partie 2-83: Câbles pour applications générales - Câbles multiconducteurs isolés au silicone réticulé

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ICS:

29.060.20	Kabli	Cables

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English version

Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U_0/U) - Part 2-83: Cables for general applications - Multicore cables with crosslinked silicone rubber insulation

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Teil 2-83: Starkstromleitungen für allgemeine Anwendungen -
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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.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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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 accepted by CENELEC as EN 50525-2-83 on 2011-01-17.

This document, which is one of a multipart series, supersedes HD 22.15 S2:2007.

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 are proposed:

– 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

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1 Scope

This European Standard applies to multicore cables insulated and sheathed with heat resistant crosslinked silicone rubber. Types with or without an overall textile braid, and with or without a strain-bearing element, are included.

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

The cables are intended for use within high temperature zones, either:

- in fixed installations with mechanical protection (cables to 4.1); or

- for flexible use under low mechanical stress (cables to 4.2).

The maximum conductor operating temperature for each of the cables in this standard is 180 °C.

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

This EN 50525-2-83 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 50363-1		Insulating, sheathing and covering materials for low voltage energy cables − Part 1: Cross-linked elastomeric insulating compounds
EN 50363-2-1		Insulating, sheathing and covering materials for low voltage energy cables − Part 2-1: Cross-linked elastomeric 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)
EN ISO 6892-1	2009	Metallic materials − Tensile testing − Part 1: Method of test at room temperature (ISO 6892-1:2009)

3 Terms and definitions

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

4 Heat resistant cables (180 °C)

4.1 Cables H05SS-F and braided cables H05SST-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:

Number of cores: 2, 3, 4 or 5

Nominal cross section: 0,75 mm² up to 2,5 mm² for 2 and 5 cores

0,75 mm² up to 6 mm² for 3 and 4 cores

4.1.1.3 Insulation

The insulation shall be a cross-linked elastomeric compound of Type EI 2 to EN 50363-1 applied around each conductor.

4.1.1.4 Assembly of cores

The cores shall be twisted together.

4.1.1.5 Sheath

The core assembly shall be covered with a sheath.

The sheath shall be a cross-linked compound of Type EM 9 to EN 50363-2-1 applied around the cores.

The sheath shall fill the spaces between the cores and fillers, if any.

4.1.1.6 Braid

For cable type H05SST-F the sheath shall be provided with a braid of suitable material. The braid shall have a uniform texture, without knots or gaps.

4.1.1.7 Marking

The cable shall be marked with the CENELEC code H05SS-F for cables without braid, or H05SST-F for cables with braid. 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.

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

4.2 Cables H05SSD3-K and braided cables H05SSD3T-K, with strain-bearing element

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:

- Number of cores: 2, 3, 4 or 5;

- Nominal cross section: 0,75 mm² or 1 mm².

4.2.1.3 Insulation

The insulation shall be a cross-linked elastomeric compound of Type EI 2 to EN 50363-1 applied around each conductor.

4.2.1.4 Strain-bearing element

The strain-bearing element shall be of non-metallic material. The strain-bearing element can be constructed as a single strain-bearing element or divided in two or more elements.

4.2.1.5 Assembly of cores

The cores shall be twisted together.

The strain-bearing element(s) shall be twisted together with the cores, and for the 3, 4 and 5 core cables the strain-bearing element shall be in the centre of the cable.

4.2.1.6 Sheath

The core assembly shall be covered with a sheath.

The sheath shall be a cross-linked compound of Type EM 9 to EN 50363-2-1 applied around the cores.

The sheath shall fill the spaces between the cores and fillers, if any.

4.2.1.7 Braid

For cable type H05SSD3T-K the sheath shall be provided with a braid of suitable material. The braid shall have a uniform texture, without knots or gaps.

4.2.1.8 Marking

The cable shall be marked with the CENELEC code H05SSD3-K for cables without braid, or H05SSD3T-K for cables with braid. 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.1 for the relevant size.

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

The strain-bearing element shall have in total a minimum load at break of 300 N, before and after ageing on complete cable at a temperature of (200 ± 3) °C for 240 h.

The strain-bearing element shall have a limited elongation compatible with cores in order to avoid excessive stresses on them.