SLOVENSKI STANDARD
SIST EN 50525-3-31:2011

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Električni kabli - Nizkonapetostni energetski kabli z nazivno napetostjo do vključno 450/750 V (U0/U) - 3-31. del: Kabli s posebnimi ognjevarnimi lastnostmi - Enožilni neoplaščeni kabli s termoplastično izolacijo brez halogenov in z nizko emisijo dima

Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U0/U) - Part 3-31: Cables with special fire performance - Single core non-sheathed cables with halogen-free thermoplastic insulation, and low emission of smoke

Kabel und Leitungen - Starkstromleitungen mit Nennspannungen bis 450/750 V (U0/U) - Teil 3-31: Leitungen mit verbessertem Verhalten im Brandfall - Halogenfreie, raucharme Ader- und Verdrahtungsleitungen mit thermoplastischer Isolierung

Câbles électriques - Câbles d'énergie basse tension de tension assignée au plus égale à 450/750 V (U0/U) - Partie 3-31: Câbles à performances spéciales au feu - Conducteurs isolés en matériau thermoplastique sans halogène, à faible dégagement de fumée

Ta slovenski standard je istoveten z: **EN 50525-3-31:2011**

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EUROPEAN STANDARD

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English version

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Câbles électriques -
Câbles d'énergie basse tension de tension assignée au plus égale à 450/750 V (U_0/U) -
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Conducteurs isolés en matériau thermoplastique sans halogène, à faible dégagement de fumée

Kabel und Leitungen -
Starkstromleitungen mit Nennspannungen bis 450/750 V (U_0/U) -
Teil 3-31: Starkstromleitungen mit verbessertem Verhalten im Brandfall -
Halogenfreie, raucharme Ader- und Verdrahtungsleitungen mit thermoplastischer 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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

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 50525-3-31 on 2011-01-17.

This document, which is one of a multipart series, supersedes HD 21.15 S1:2006.

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

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Tables

1 Scope

EN 50525-3-31 applies to non-sheathed single core cables insulated with halogen-free thermoplastic compound and having low emission of smoke and corrosive gases when exposed to fire.

NOTE 1 Low emission of smoke is checked in accordance with EN 61034-2. Low emission of corrosive gases is checked as part of the check for absence of halogens (see Annex B of EN 50525-1).

The cables are of rated voltages U_0/U up to and including 450/750 V.

NOTE 2 Cables rated 450/750 V may be used at 600/1 000 V when this cable is used in fixed installations with mechanical protection, within switchgear and control gear - see HD 516.

For cables rated at 450/750 V there are two types, Type 1 and Type 2. Type 2 cables are required to meet a more severe test for resistance to flame propagation (EN 60332-3-24) than Type 1, and have particular suitability for installation in bunches (see also HD 516).

The cables are intended for fixed wiring applications.

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

NOTE 3 HD 516 contains extensive guidance on the safe use of cables in this standard.

This EN 50525-3-31 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 50363-7	Insulating, sheathing and covering materials for low voltage energy cables - Part 7: Halogen-free, thermoplastic insulating 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 60332-3-24	Tests on electric and optical fibre cables under fire conditions - Part 3-24: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category C (IEC 60332-3-24)
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 61034-2	Measurement of smoke density of cables burning under defined conditions - Part 2: Test procedure and requirements (IEC 61034-2)

3 Terms and definitions

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

3.1
type 1 cable
cable meeting the requirements for resistance to flame spread as given in EN 60332-1-2

3.2
type 2 cable
cable meeting the requirements for resistance to flame spread as given in EN 60332-1-2 and additionally as given in EN 60332-3-24

4 General purpose cables

4.1 Cables for fixed wiring – H07Z1-U and H07Z1-R (Type 1 and Type 2)

4.1.1 Construction

4.1.1.1 Conductor

The conductor shall be class 1 or class 2, according to EN 60228.

4.1.1.2 Sizes of cable

The sizes of cable shall be:

– class 1 – 1,5 mm² to 10 mm²;

– class 2 – 1,5 mm² to 630 mm².

4.1.1.3 Insulation

The insulation shall be thermoplastic compound of Type TI 7 to EN 50363-7.

4.1.1.4 Marking

The cable shall be marked with the CENELEC code H07Z1-U for cables with class 1 conductor, or H07Z1-R for cables with class 2 conductor. The marking shall comply with Clause 6 of EN 50525-1.

In addition, in order to differentiate Type 1 cable from Type 2 cable, a further marking shall be applied as follows:

– for Type 1 cables the marking shall be TYPE 1;

– for Type 2 cables the marking shall be TYPE 2.

The additional marking shall be placed immediately after the marking of the code and shall comply with Clause 6 of EN 50525-1.

NOTE Type 2 cables may have an additional voluntary marking to satisfy national requirements. Such markings should not conflict with any of the markings required by the standard.

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.

When tested in accordance with the method and procedure given in EN 61034-2, all sizes of cable shall exceed 60 % light transmittance throughout the test.

4.2 Cables for fixed wiring – H07Z1-K (Type 1 and Type 2)

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 1,5 mm^2 to 240 mm^2.

4.2.1.3 Insulation

The insulation shall be thermoplastic compound of Type TI 7 to EN 50363-7.

4.2.1.4 Marking

The cable shall be marked with the CENELEC code H07Z1-K. The marking shall comply with Clause 6 of EN 50525-1.

In addition, in order to differentiate Type 1 cable from Type 2 cable, a further marking shall be applied as follows:

– for Type 1 cables the marking shall be TYPE 1;

– for Type 2 cables the marking shall be TYPE 2.

The additional marking shall be placed immediately after the marking of the code and shall comply with Clause 6 of EN 50525-1.

NOTE Type 2 cables may have an additional voluntary marking to satisfy national requirements. Such markings should not conflict with any of the markings required by the standard.

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.

When tested in accordance with the method and procedure given in EN 61034-2, all sizes of cable shall exceed 60 % light transmittance throughout the test.

4.3 Cables for internal wiring – H05Z1-U and H05Z1-R

4.3.1 Construction

4.3.1.1 Conductor

The conductor shall be class 1 or class 2, according to EN 60228.

4.3.1.2 Sizes of cable

The sizes of cable shall be:

- class 1 – 0,5 mm^2 to 1,0 mm^2;
- class 2 – 0,5 mm^2 to 1,0 mm^2.

4.3.1.3 Insulation

The insulation shall be thermoplastic compound of Type TI 7 to EN 50363-7.

4.3.1.4 Marking

The cable shall be marked with the CENELEC code H05Z1-U for cables with class 1 conductor, or H05Z1-R for cables with class 2 conductor. The marking shall comply with Clause 6 of EN 50525-1.

4.3.2 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 8.

The dimensions of the cables shall conform to Table B.3 for the relevant size.

When tested in accordance with the method and procedure given in EN 61034-2, all sizes of cable shall exceed 60 % light transmittance throughout the test.

4.4 Cables for internal wiring – H05Z1-K

4.4.1 Construction

4.4.1.1 Conductor

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

4.4.1.2 Sizes of cable

The sizes of cable shall be from 0,5 mm^2 to 1,0 mm^2.

4.4.1.3 Insulation

The insulation shall be thermoplastic compound of Type TI 7 to EN 50363-7.

4.4.1.4 Marking

The cable shall be marked with the CENELEC code H05Z1-K. The marking shall comply with Clause 6 of EN 50525-1.