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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 50525-3-11

May 2011

ICS 29.060.20

Supersedes HD 21.14 S1:2003

English version

**Electric cables -
Low voltage energy cables of rated voltages up to and including 450/750 V
(U_0/U) -
Part 3-11: Cables with special fire performance -
Flexible cables with halogen-free thermoplastic insulation, and low
emission of smoke**

Câbles électriques -
Câbles d'énergie basse tension de tension
assignée au plus égale à 450/750 V
(U_0/U) -
Partie 3-11: Câbles à performances
spéciales au feu -
Câbles souples 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 3-11: Starkstromleitungen mit
verbessertem Verhalten im Brandfall -
Flexible halogenfreie, raucharme
Leitungen mit thermoplastischer Isolierung

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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 approved by CENELEC as EN 50525-3-11 on 2011-01-17.

This document, which is one of a multipart series, supersedes HD 21.14 S1:2003.

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- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2014-01-17

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1 Scope

EN 50525-3-11 applies to flexible cables, insulated and sheathed 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 300/500 V.

The cables are intended for the connection of domestic appliances to the fixed supply.

Circular cables and flat cables are included.

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

NOTE 2 HD 516 contains extensive guidance on the safe use of cables in this standard.

This EN 50525-3-11 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.

[SIST EN 50525-3-11:2011](https://standards.iteh.ai/catalog/standards/sist/af373ea8-ebbf-4c97-bac3-ef978970b2/sist-en-50525-3-11-2011)

EN 50363-7	https://standards.iteh.ai/catalog/standards/sist/af373ea8-ebbf-4c97-bac3-ef978970b2/sist-en-50525-3-11-2011 Insulating, sheathing and covering materials for low voltage energy cables - Part 7: Halogen-free, thermoplastic insulating compounds
EN 50363-8	Insulating, sheathing and covering materials for low voltage energy cables - Part 8: Halogen-free, thermoplastic 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 60811-1-1	Insulating and sheathing materials of electric and optical cables - Common test methods - Part 1-1: General application - Measurement of thickness and overall dimensions - Tests for determining the mechanical properties (IEC 60811-1-1)
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 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.

4 General purpose cables

4.1 Light duty cables – H03Z1Z1-F and H03Z1Z1H2-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:

- circular cables – 0,5 mm² and 0,75 mm² – 2, 3 and 4 core;
- flat cables – 0,5 mm² and 0,75 mm² – 2 core only.

4.1.1.3 Insulation

The insulation shall be thermoplastic compound of Type TI 6 to EN 50363-7.

4.1.1.4 Assembly

The cables shall be assembled as follows:

- circular cable: the cores shall be twisted together;
- flat cable: the cores shall be laid parallel.

NOTE A tape may be applied around the core assembly before application of the sheath.

4.1.1.5 Sheath

The sheath shall be thermoplastic compound of Type TM 7 to EN 50363-8.

The sheath shall fill the spaces between the cores, thus forming a filling.

4.1.1.6 Marking

The cable shall be marked with the CENELEC code H03Z1Z1-F for circular cables, or H03Z1Z1H2-F for flat cables. 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.

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 Ordinary duty cables – H05Z1Z1-F and H05Z1Z1H2-F

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:

- circular cables – 0,75 mm² to 4 mm² – 2, 3, 4 and 5 core;
- flat cables – 0,75 mm² and 1,0 mm² – 2 core only.

4.2.1.3 Insulation

The insulation shall be thermoplastic compound of Type TI 6 to EN 50363-7.

4.2.1.4 Assembly

The cables shall be assembled as follows:

- circular cable: the cores, and the fillers if any, shall be twisted together;
- flat cable: the cores shall be laid parallel.

For circular cable having two cores, the space between the cores shall be filled either by separate fillers or by the sheath filling the interstices.

NOTE 1 For circular cables with three, four or five cores, a centre filler may be used.

NOTE 2 A tape may be applied around the core assembly before application of the sheath.

4.2.1.5 Sheath

The sheath shall be thermoplastic compound of Type TM 7 to EN 50363-8.

The sheath shall fill the spaces between the cores, thus forming a filling.

4.2.1.6 Marking

The cable shall be marked with the CENELEC code H05Z1Z1-F for circular cables, or H05Z1Z1H2-F for flat cables. 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.

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

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.

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