NSAI Standards

Irish Standard
I.S. EN 50525-3-31:2011

# Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V ($U_0$/U) -- Part 3-31: Cables with special fire performance - Single core non-sheathed cables with halogen-free thermoplastic insulation, and low emission of smoke

# I.S. EN 50525-3-31:2011

*Incorporating amendments/corrigenda issued since publication:*

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SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

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Údarás um Chaighdeáin Náisiúnta na hÉireann

EUROPEAN STANDARD

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EUROPÄISCHE NORM

# EN 50525-3-31

May 2011

ICS 29.060.20

Supersedes HD 21.15 S1:2006

English version

# Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V ($U_0$/$U$) - Part 3-31: Cables with special fire performance - Single core non-sheathed 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 3-31: Câbles à performances spéciales au feu -
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

This European Standard was approved by CENELEC on 2011-01-17. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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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Ref. No. EN 50525-3-31:2011 E

## 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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# Contents



**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) |