



NSAI
Standards

Irish Standard
I.S. EN 50441-1:2012

Cables for indoor residential telecommunication installations -- Part 1: Unscreened cables - Grade 1

I.S. EN 50441-1:2012

Incorporating amendments/corrigenda issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

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

<i>This document replaces:</i> EN 50441-1:2006	<i>This document is based on:</i> EN 50441-1:2012 EN 50441-1:2006	<i>Published:</i> 9 March, 2012 23 June, 2006
This document was published under the authority of the NSAI and comes into effect on: 14 March, 2012		ICS number: 33.120.10
NSAI 1 Swift Square, Northwood, Santry Dublin 9	T +353 1 807 3800 F +353 1 807 3838 E standards@nsai.ie W NSAI.ie	Sales: T +353 1 857 6730 F +353 1 857 6729 W standards.ie
Údarás um Chaighdeáin Náisiúnta na hÉireann		

EUROPEAN STANDARD

EN 50441-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2012

ICS 33.120.10

Supersedes EN 50441-1:2006

English version

**Cables for indoor residential telecommunication installations -
Part 1: Unscreened cables -
Grade 1**

Câbles pour les installations résidentielles
de télécommunications en intérieur -
Partie 1: Câbles non écrantés -
Classe 1

Innenkabel für
Telekommunikationseinrichtungen im
Wohnbereich -
Teil 1: Ungeschirmte Innenkabel -
Klasse 1

This European Standard was approved by CENELEC on 2012-01-23. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Contents

Foreword	3
1 Scope	4
2 Normative references	4
3 Quality control	5
4 Cable construction	5
4.1 Conductors	5
4.2 Insulation	5
4.3 Cable element	6
4.4 Screening of the cable element.....	6
4.5 Cabling.....	6
4.6 Spare pairs	6
4.7 Colour code	6
4.8 Sheath	6
4.9 Ripcord	6
4.10 Overall diameter	6
4.11 Identification	7
4.12 Delivery length.....	7
5 Mechanical requirements	8
5.1 Conductor	8
5.2 Insulation	8
5.3 Sheath	8
5.4 Finished cable	8
6 Environmental and climatic requirements	10
6.1 Insulation	10
6.2 Sheath	10
6.3 Fire behaviour.....	11
7 Electrical requirements	11
7.1 General.....	11
7.2 Conductor resistance.....	11
7.3 Dielectric strength and capacitance	11
7.4 Insulation resistance.....	11
7.5 High frequency characteristics	11
7.6 Electromagnetic behaviour	14
7.7 Unbalance attenuation.....	14
7.8 Environmental and safety aspects	14
Bibliography	15

Figures

Figure 1 – Test fixture.....	9
Figure 2 – Installation test system.....	10

Tables

Table 1 – Recommended outer diameter of the sheath.....	7
Table 2 – Cable impedance.....	11
Table 3 – Return loss measurement	12
Table 4 – Maximum cable attenuation	12
Table 5 – Minimum NEXT and PSNEXT	13
Table 6 – Minimum ELFEXT and PSELFEXT.....	13

Foreword

This document (EN 50441-1:2012) has been prepared by SC 46XC, "Multicore, multipair and quad data communication cables", of CLC/TC 46X, "Communication cables".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2013-01-23
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2015-01-23

This document supersedes EN 50441-1:2006.

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

This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC).

1 Scope

This European Standard specifies the constructional details and performances requirements for cables for indoor residential cabling systems characterized up to 100 MHz. Cables in this European Standard are based on the common design rules specified in EN 50290-2-1 and are specifically intended for supporting ICT and BCT applications (telephone, computer and TV services) as specified in EN 50173-4.

The cables covered in this European Standard are intended to operate with voltages and currents normally encountered in communications systems. These cables are not intended to be used in conjunction with low impedance sources, for example, the electrical power supply of public utility mains.

Cables covered in this European Standard may however be subjected to voltages of not more than 300 V a.c. or 450 V d.c. and comply with the requirements of the Low Voltage Directive.

The maximum current rating per conductor is 3 A/mm² unless otherwise specified in the relevant detail specification.

2 Normative references

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

EN 50173-1	<i>Information technology – Generic cabling systems - Part 1: General requirements</i>
EN 50289-1-2	<i>Communication cables – Specifications for test methods - Part 1-2: Electrical test methods – DC resistance</i>
EN 50289-1-3	<i>Communication cables – Specifications for test methods - Part 1-3: Electrical test methods – Dielectric strength</i>
EN 50289-1-4	<i>Communication cables – Specifications for test methods - Part 1-4: Electrical test methods – Insulation resistance</i>
EN 50289-1-6	<i>Communication cables – Specifications for test methods - Part 1-6: Electrical test methods – Electromagnetic performance</i>
EN 50289-1-7	<i>Communication cables – Specifications for test methods - Part 1-7: Electrical test methods – Velocity of propagation</i>
EN 50289-1-8	<i>Communication cables – Specifications for test methods - Part 1-8: Electrical test methods – Attenuation</i>
EN 50289-1-9	<i>Communication cables – Specifications for test methods - Part 1-9: Electrical test methods – Unbalance attenuation (longitudinal conversion loss, longitudinal conversion transfer loss)</i>
EN 50289-1-10	<i>Communication cables – Specifications for test methods - Part 1-10: Electrical test methods – Crosstalk</i>
EN 50289-1-11	<i>Communication cables – Specifications for test methods - Part 1-11: Electrical test methods – Characteristic impedance, input impedance, return loss</i>
EN 50289-3-7	<i>Communication cables – Specifications for test methods - Part 3-7: Mechanical test methods – Abrasion resistance of the cable sheath</i>
EN 50289-3-9:2001	<i>Communication cables – Specifications for test methods - Part 3-9: Mechanical test methods – Bending tests</i>

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- [Looking for additional Standards? Visit Intertek Inform Infostore](#)
 - [Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation](#)
-