



**NSAI**  
Standards

Irish Standard  
I.S. EN 50290-2-23:2013

Communication cables -- Part 2-23:  
Common design rules and construction  
- Polyethylene insulation for multi-pair  
cables used in access  
telecommunication networks: Outdoor  
cables

## I.S. EN 50290-2-23:2013

*Incorporating amendments/corrigenda issued since publication:*

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**EUROPEAN STANDARD**  
**NORME EUROPÉENNE**  
**EUROPÄISCHE NORM**

**EN 50290-2-23**

November 2013

ICS 29.035.20; 33.120.10

Supersedes EN 50290-2-23:2001

English version

**Communication cables -**  
**Part 2-23: Common design rules and construction -**  
**Polyethylene insulation for multi-pair cables used in access**  
**telecommunication networks: Outdoor cables**

Câbles de communication -  
Partie 2-23: Règles de conception  
communes et construction -  
Polyéthylène pour enveloppes isolantes

Kommunikationskabel -  
Teil 2-23: Gemeinsame Regeln für  
Entwicklung und Konstruktion –  
Polyethylen-Isoliermischungen für  
vielpaarige Kabel in  
Telekommunikationsnetzwerken:  
Außenkabel

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Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

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## **Contents**

<b>Foreword .....</b>	<b>3</b>
<b>1 Scope .....</b>	<b>5</b>
<b>2 Normative references .....</b>	<b>5</b>
<b>3 Compound test requirements .....</b>	<b>6</b>
<b>4 Cable test requirements.....</b>	<b>6</b>
<b>5 Health, Safety and Environmental Regulations.....</b>	<b>6</b>
<b>Bibliography .....</b>	<b>10</b>

## Foreword

This document (EN 50290-2-23:2013) has prepared by 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) 2014-09-16
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2016-09-16

This document supersedes EN 50290-2-23:2001.

EN 50290-2-23:2013 includes the following significant technical changes with respect to EN 50290-2-23:2001:

- The document has been entirely restructured.
- The main change is the introduction of the new Table 1 for the test to be performed on granules.

This document should be read in conjunction with Part 2-20 of EN 50290, the product standard EN 50407 (all parts) and other applicable product standards.

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 document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

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

EN 50290-2, *Communication cables*, is divided into the following sub-parts:

- *Part 2-1: Common design rules and construction;*
- *Part 2-2: Common design rules and construction — Polyethylene insulation for multi element metallic data cables for indoor application [currently at Enquiry stage];*
- *Part 2-3: Common design rules and construction — Polyethylene insulation for coaxial cables [currently at Enquiry stage];*
- *Part 2-4: Common design rules and construction — Polypropylene insulation for coaxial cables [currently at Enquiry stage];*
- *Part 2-20: Common design rules and construction — General;*
- *Part 2-21: Common design rules and construction — PVC insulation compounds;*
- *Part 2-22: Common design rules and construction — PVC sheathing compounds;*
- *Part 2-23: Common design rules and construction — PE insulation [the present document];*

**I.S. EN 50290-2-23:2013**

EN 50290-2-23:2013

- 4 -

- *Part 2-24: Common design rules and construction — PE sheathing;*
  - *Part 2-25: Common design rules and construction — Polypropylene insulation for compounds;*
  - *Part 2-26: Common design rules and construction — Halogen free flame retardant insulation compounds;*
  - *Part 2-27: Common design rules and construction — Halogen free flame retardant thermoplastic sheathing compounds;*
  - *Part 2-28: Common design rules and construction — Filling compounds for filled cables;*
  - *Part 2-29: Common design rules and construction — Cross-linked PE insulation compounds;*
  - *Part 2-30: Common design rules and construction — Poly(tetrafluoroethylene-hexafluoropropylene) (FEP) insulation and sheathing;*
  - *Part 2-32: Common design rules and construction — Halogen free insulation compounds for flame retardant and fire resistant cables [currently at Enquiry stage].*
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## 1 Scope

This European Standard gives specific requirements for PE compounds to be used for the insulation of telephone wire for external plant.

Using raw material and type test data as outlined in this standard, the raw material supplier will have sufficient data to demonstrate compliance and warrant that the material is suitable for the specified application.

## 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 50290-2-20, *Communication cables — Part 2-20: Common design rules and construction — General*

EN 60216 (all parts), *Electrical insulating materials — Thermal endurance properties (IEC 60216, all parts)*

EN 60811-401, *Electric and optical fibre cables — Test methods for non-metallic materials — Part 401: Miscellaneous tests — Thermal ageing methods — Ageing in an air oven (IEC 60811-401)*

EN 60811-407, *Electric and optical fibre cables — Test methods for non-metallic materials — Part 407: Miscellaneous tests — Measurement of mass increase of polyethylene and polypropylene compounds (IEC 60811-407)*

EN 60811-408, *Electric and optical fibre cables — Test methods for non-metallic materials — Part 408: Miscellaneous tests — Long-term stability test of polyethylene and polypropylene compounds (IEC 60811-408)*

EN 60811-501, *Electric and optical fibre cables — Test methods for non-metallic materials — Part 501: Mechanical tests — Tests for determining the mechanical properties of insulating and sheathing compounds (IEC 60811-501)*

EN 60811-502, *Electric and optical fibre cables — Test methods for non-metallic materials — Part 502: Mechanical tests — Shrinkage test for insulations (IEC 60811-502)*

EN 60811-510, *Electric and optical fibre cables — Test methods for non-metallic materials — Part 510: Mechanical tests — Methods specific to polyethylene and polypropylene compounds — Wrapping test after thermal ageing in air (IEC 60811-510)*

EN 60811-512, *Electric and optical fibre cables — Test methods for non-metallic materials — Part 512: Mechanical tests — Methods specific to polyethylene and polypropylene compounds — Tensile strength and elongation at break after conditioning at elevated temperature (IEC 60811-512)*

EN 60811-513, *Electric and optical fibre cables — Test methods for non-metallic materials — Part 513: Mechanical tests — Methods specific to polyethylene and polypropylene compounds — Wrapping test after conditioning (IEC 60811-513)*

EN ISO 527-1:2012, *Plastics — Determination of tensile properties — Part 1: General principles (ISO 527-1:2012)*

EN ISO 527-2:2012, *Plastics — Determination of tensile properties — Part 2: Test conditions for moulding and extrusion plastics (ISO 527-2:2012)*

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