

**KOMMUNIKATSIOONIKAABLID. OSA 4-1: KAABLITE  
KASUTAMISE ÜLDKAALUTLUSED. KESKKONNAOLUD JA  
OHUTUSASPEKTID**

**Communication cables - Part 4-1: General  
considerations for the use of cables - Environmental  
conditions and safety aspects**

**EESTI STANDARDI EESSÕNA****NATIONAL FOREWORD**

See Eesti standard EVS-EN 50290-4-1:2014 sisaldab Euroopa standardi EN 50290-4-1:2014 ingliskeelset teksti.	This Estonian standard EVS-EN 50290-4-1:2014 consists of the English text of the European standard EN 50290-4-1:2014.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 05.12.2014.	Date of Availability of the European standard is 05.12.2014.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile [standardiosakond@evs.ee](mailto:standardiosakond@evs.ee).

ICS 33.120.10

**Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele**

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:  
Aru 10, 10317 Tallinn, Eesti; koduleht [www.evs.ee](http://www.evs.ee); telefon 605 5050; e-post [info@evs.ee](mailto:info@evs.ee)

**The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation**

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:

Aru 10, 10317 Tallinn, Estonia; homepage [www.evs.ee](http://www.evs.ee); phone +372 605 5050; e-mail [info@evs.ee](mailto:info@evs.ee)

English Version

## Communication cables - Part 4-1: General considerations for the use of cables - Environmental conditions and safety aspects

Kommunikationskabel - Teil 4-1: Allgemeine Betrachtungen für die Anwendung der Kabel - Bedingung der Umgebung und Sicherheitsaspekte

This European Standard was approved by CENELEC on 2013-09-16. 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, Former Yugoslav Republic of Macedonia, 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.



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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

## Contents

Foreword .....	3
1 Scope.....	4
2 Normative references.....	4
3 Terms and definitions .....	4
4 Environmental conditions and installation aspects.....	4
4.1 General .....	4
4.2 Relationship with EC directives .....	5
4.2.1 EMC Directive .....	5
4.2.2 Low voltage directive .....	5
4.2.3 Construction product directive/ Construction Product regulation.....	6
4.3 Environmental conditions.....	6
4.3.1 Relationship between environmental conditions and severities of testing .....	6
4.3.2 Climatic environment and severities for environmental tests .....	7
4.3.3 Mechanical environment and severities for environmental tests.....	9
4.3.4 Chemical environment .....	10
4.3.5 Moisture, water and humidity .....	10
4.3.6 Nuclear radiation .....	10
Bibliography .....	11

Preview generated by EVS

## Foreword

This document (EN 50290-4-1:2014) has been 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) 2015-06-05
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2016-09-16

This document supersedes EN 50290-4-1:2001.

EN 50290-4-1:2014 includes the following significant technical changes with respect to EN 50290-4-1:2001:

- Clauses related to fire reaction and fire resistance have been updated to take into account the recent development of supporting standards for the CPR.

This standard should be read in conjunction with EN 50290-1-1 and is completed by generic, sectional, family and detail specifications, as appropriate, to describe in a detailed manner each type of cable with its specific characteristics.

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.

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 50290-4, *Communication cables — General considerations for the use of cables*, is divided into the following sub-parts:

- *Part 4-1: Environmental conditions and safety aspects* [the present document];
- *Part 4-2: Guide to use*.

## 1 Scope

This European Standard gives the environmental conditions and safety aspects of symmetrical, coaxial and optical cables used for the infrastructure of communication and control networks.

## 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 13501-3, *Fire classification of construction products and building elements — Part 3: Classification using data from fire resistance tests on products and elements used in building service installations: fire resisting ducts and fire dampers*

EN 13501-6, *Fire classification of construction products and building elements — Part 6: Classification using data from reaction to fire tests on electric cables*

EN 50289-3 (all parts), *Communication cables — Specifications for test methods*

EN 50289-4 (all parts), *Communication cables — Specifications for test methods*

EN 50290-1-2, *Communication cables — Part 1-2: Definitions*

EN 50290-2-2X (all parts), *Communication cables*

EN 50575:2014, *Power, control and communication cables — Cables for general applications in construction works subject to reaction to fire requirements*

EN 60068-2-11, *Environmental testing — Part 2: Tests — Test Ka: Salt mist (IEC 60068-2-11)*

EN 60068-2-14, *Environmental testing — Part 2-14: Tests — Test N: Change of temperature (IEC 60068-2-14)*

EN 60068-2-27, *Environmental testing — Part 2-27: Tests — Test Ea and guidance: Shock (IEC 60068-2-27)*

EN 60068-2-42, *Environmental testing — Part 2-42: Tests — Test Kc: Sulphur dioxide test for contacts and connections (IEC 60068-2-42)*

EN 60068-2-53, *Environmental testing — Part 2-53: Tests and guidance: Combined climatic (temperature/humidity) and dynamic (vibration/shock) tests (IEC 60068-2-53)*

FprEN 60794-1-21<sup>1)</sup>, *Optical fibre cables — Part 1-21: Generic specification — Basic optical cable test procedures - Mechanical tests methods (IEC 60794-1-21)*

EN 61169-1:2013, *Radio-frequency connectors — Part 1: Generic specification — General requirements and measuring methods (IEC 61169-1:2013)*

IEC 62012-1:2002, *Multicore and symmetrical pair/quad cables for digital communications to be used in harsh environments — Part 1: Generic specification*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 50290-1-2 apply.

## 4 Environmental conditions and installation aspects

### 4.1 General

The reliability of the cables and their expected lifetime depend upon how the environmental conditions (during storage, installation and operation) are taken into account in their design.

1) By the time of publication of the present document, this reference is at Committee Draft stage in the IEC under the reference "6A/1582/CDV".