

Cable trunking and cable ducting systems for electrical installations —

Part 1: General requirements

The European Standard EN 50085-1:1997 with the incorporation of amendment A1:1998 has the status of a British Standard

ICS 29.120.10

National foreword

This British Standard is the English language version of EN 50085-1:1997, including amendment A1:1998.

The UK participation in its preparation was entrusted to Technical Committee PEL/213, Cable management, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 21 and a back cover.

The BSI copyright notice displayed in this document indicates when the document was last issued.

This British Standard, having been prepared under the direction of the Electrotechnical Sector Committee, was published under the authority of the Standards Committee and comes into effect on 15 March 1999

© BSI 01-2000

ISBN 0 580 32231 9

Amendments issued since publication

Amd. No.	Date	Comments
10512	January 2000	Deletion from annex B of A-deviation for Finland regarding subclause 7.3

ICS 29.120.10

Descriptors: Electric wiring system, insulating ducting system, insulating cable trunking, dimension, mechanical characteristics, electrical characteristics, test

English version

Cable trunking systems and cable ducting systems for electrical installations — Part 1: General requirements

(includes amendment A1:1998)

Systèmes de goulottes et de conduits profilés
pour installations électriques —
Partie 1: Règles générales
(inclut l'amendement A1:1998)

Elektroinstallationskanalsysteme für
elektrische Installationen —
Teil 1: Allgemeine Anforderungen
(enthält Änderung A1:1998)

This European Standard was approved by CENELEC on 1996-07-02; Amendment A1 was approved by CENELEC on 1998-01-31. 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.

CENELEC members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B-1050 Brussels

Foreword

This European Standard has been prepared by Technical Committee CENELEC TC 213, Cable management.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50085-1 on 1996-07-02.

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) 1997-07-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1999-07-01

For products which have complied with the relevant national standard before 1999-07-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 2004-07-01.

Annexes designated “informative” are given for information only. In this standard, Annex A and Annex B are informative.

This standard is a system standard for cable management products used for electrotechnical purposes. It relates to the Council Directives on the approximation of laws, regulations and administrative provisions of the Member States relating to:

Low Voltage (Directive 73/23/EEC)

through consideration of the essential requirements of this directive.

This standard is supported by separate standards to which references are made.

Foreword to amendment A1

At the request of the Finnish electrotechnical committee, a draft for an amendment to EN 50085-1:1997 was submitted to the CENELEC members for acceptance in November 1997.

The text of the draft was accepted by CENELEC as amendment A1 to EN 50085-1:1997 on 1998-01-31.

The following dates were fixed:

- latest date by which the existence of the amendment has to be announced at national level (doa) 1998-10-01
- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1999-04-01

Contents

	Page
Foreword	2
1 Scope	5
2 Normative references	5
3 Definitions	5
4 General requirements	6
5 General conditions for tests	6
6 Classification	7
7 Marking and documentation	8
8 Dimensions	8
9 Construction	8
10 Mechanical properties	10
11 Electrical properties	12
12 Thermal properties	12
13 Fire effect	13
14 External influences	14
15 Electromagnetic compatibility	14
Annex A (informative) Types of cable trunking systems (CTS) and cable ducting systems (CDS)	20
Annex B (informative) A-deviations	21
Figure 1 — Types and applications of cable trunking systems (CTS) and cable ducting systems (CDS)	15
Figure 2 — Impact test apparatus	16
Figure 3 — Arrangement for flame test	17
Figure 4 — Enclosure for flame test	18

	Page
Figure 5 — Ball pressure test apparatus	19
Table 1A	7
Table 1B	7
Table 2	7
Table 3 — Torque values for the test of screwed connections	9
Table 4 — Impact test values	11
Table A.1 — Types of CTS and CDS for wall and ceiling installation	20
Table A.2 — Types of CTS and CDS for floor installation	20
Table A.3 — Types of CTS and CDS for installation between two opposite surfaces	20

1 Scope

This European Standard specifies requirements and tests for cable trunking systems and cable ducting systems intended for the accommodation, and where necessary for the segregation, of insulated conductors, cables, cords and possibly other electrical equipment in electrical and/or communication systems installations up to 1 000 V a.c. and/or 1 500 V d.c.

This standard does not apply to conduit systems, cable tray systems, cable ladder systems, power track systems or equipment covered by other standards.

This part 1 shall be used in conjunction with the relevant part 2 for particular requirements.

NOTE This part 1 is not intended to be used by itself.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 60423:1994, *Conduits for electrical purposes — Outside diameters of conduits for electrical installations and threads for conduits and fittings* (IEC 423:1993, modified).

EN 60529:1991, *Degrees of protection provided by enclosures (IP Code)* (IEC 529:1989).

EN 60695-2-4/1:1993, *Fire hazard testing — Part 2: Test methods — Section 4/Sheet 1: 1 kW nominal pre-mixed test flame and guidance* (IEC 695-2-4/1:1991).

HD 383 S2:1986, *Conductors of insulated cables* (IEC 228:1978 + IEC 228A:1982).

HD 384.1 S1:1979, *Electrical installations of buildings* (IEC 364-1:1972 + A1:1976, modified).

HD 384.5.51 S1:1985, *Part 5: Selection and erection of electrical equipment — Chapter 51: Common rules* (IEC 364-5-51:1979, modified).

HD 384.5.54 S1:1998, *Chapter 54: Earthing arrangements and protective conductors* (IEC 364-5-54:1980, modified).

IEC 50(826):1982, *International Electrotechnical Vocabulary (IEV) — Chapter 826: Electrical installations of buildings* (harmonized as HD 384.2 S1:1986).

IEC 695-2-1:1991, *Fire hazard testing — Part 2: Test methods — Section 1: Glow-wire test and guidance*.

3 Definitions

For the purpose of this European Standard the following definitions apply.

3.1

cable trunking system

CTS

an assembly comprising a trunking length and possibly other system components to provide an enclosure for the accommodation and laying-in of insulated conductors, cables and cords and possibly the accommodation of other electrical equipment

NOTE Different types of CTS are shown in Figure 1 and explained in Annex A.

3.2

cable ducting system

CDS

an assembly comprising a ducting length and possibly other system components to provide an enclosure for the accommodation and drawing-in of insulated conductors, cables and cords and possibly the accommodation of other electrical equipment

NOTE Different types of CDS are shown in Figure 1 and explained in Annex A.

3.3

system component

part of the system which includes:

- a) trunking length or ducting length;
- b) trunking fitting or ducting fitting;
- c) fixing device;
- d) apparatus mounting device;
- e) system accessory

NOTE A system does not necessarily include all system components a) to e). Different combinations of system components may be used.

3.4

trunking length

the main component of a cable trunking system comprising a base with one or more access covers which may be opened or removed

3.5

ducting length

the main component of a cable ducting system, characterized by a closed non-circular cross-section

3.6

fitting

system component to connect, change direction or terminate trunking lengths or ducting lengths

3.7 fixing device

a system component to secure other system components to the wall, ceiling, floor or another structure

3.8 apparatus mounting device

a system component to accommodate electrical apparatus (switches, socket outlets, circuit-breakers, telephone outlets, etc.) which can be an integral part of electrical apparatus

NOTE An apparatus mounting device can also be a fitting, a trunking length, etc.

3.9 system accessory

a system component for supplementary functions such as cable separation, cable retention, cable outlet, etc.

3.10 metallic system component

a system component which consists of metal only

3.11 non-metallic system component

a system component which consists of non-metallic material only

3.12 composite system component

a system component comprising both metallic and non-metallic materials

3.13 non-flame propagating system component

a system component which is liable to catch fire as a result of an applied flame, in which the flame does not propagate and which extinguishes itself within a limited time after the flame is removed

3.14 external influence

factor which may affect the system

NOTE Examples of such factors are, a presence of water, oil or building materials, low and high temperatures and corrosive or polluting substances.

3.15 membrane

under consideration

3.16 gland

under consideration

3.17 live part

a conductor or conductive part intended to be energized in normal use, including a neutral conductor, but, by convention, not a PEN conductor (IEV 826-03-01)

4 General requirements

CTS/CDS shall be so designed and constructed that where required they provide reliable mechanical protection to the insulated conductors, cables, cords and possibly other electrical equipment contained therein. Where required the system shall also provide adequate electrical protection.

Furthermore, the system components shall withstand the stresses likely to occur under classified minimum temperature for storage and transport, installation and application (see Table 1A and Table 1B) and maximum temperature for application (see Table 2) and during recommended installation practice and usage. Equipment integral with or incorporated in a system component shall comply with the relevant standard for that equipment if any.

Compliance is checked by carrying out all the tests specified.

5 General conditions for tests

5.1 Tests according to this standard are type tests.

5.2 Samples of system components are called hereafter "samples".

5.3 Unless otherwise specified, tests are carried out considering the declared classification and purposes of the system, with the CTS/CDS assembled and installed as in normal use according to the manufacturer's instructions.

Tests on non-metallic system components or composite system components shall not commence earlier than 240 h after manufacture. During this period the samples may be conditioned according to 10.3.1.1 when required.

5.4 Unless otherwise specified, tests are carried out at an ambient temperature of $20\text{ °C} \pm 5\text{ °C}$.

5.5 Samples of trunking lengths or ducting lengths for a given test are taken from different such system components.

5.6 All tests are carried out on new samples.

5.7 When toxic or hazardous processes are used, precautions shall be taken to safeguard the test personnel.

5.8 Unless otherwise specified, three samples are submitted to the tests and the requirements are satisfied if all the tests are met.