

INTERNATIONAL STANDARD

IEC
61084-2-2

First edition
2003-05

Cable trunking and ducting systems for electrical installations –

Part 2-2:

Particular requirements –

Cable trunking systems and cable ducting systems intended for underfloor and flushfloor installations

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*This **English-language** version is derived from the original **bilingual** publication by leaving out all French-language pages. Missing page numbers correspond to the French-language pages.*



Reference number
IEC 61084-2-2:2003(E)

Publication numbering

As from 1 January 1997 all IEC publications are issued with a designation in the 60000 series. For example, IEC 34-1 is now referred to as IEC 60034-1.

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

CABLE TRUNKING AND DUCTING SYSTEMS FOR ELECTRICAL INSTALLATIONS –

Part 2-2: Particular requirements – Cable trunking systems and cable ducting systems intended for underfloor and flushfloor installations

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 61084-2-2 has been prepared by subcommittee 23A: Cable management systems, of IEC technical committee 23: Electrical accessories.

The text of this standard is based on the following documents:

FDIS	Report on voting
23A/428/FDIS	23A/431/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

This Part 2-2 is intended to be used in conjunction with IEC 61084-1:1991, *Cable trunking and ducting systems for electrical installations – Part 1: General requirements*, and its Amendment 1 (1993).

This Part 2-2 supplements or modifies the corresponding clauses in IEC 61084-1, so as to convert that publication into the IEC standard: *Particular requirements for cable trunking systems and cable ducting systems intended for underfloor and flushfloor installations*.

Where a particular subclause of Part 1 is not mentioned in this Part 2-2, that subclause applies as far as is reasonable. Where this part states “addition”, “modification” or “replacement”, the relevant requirement, test specification or note should be adapted accordingly.

In this standard:

- 1) the following print types are used:
 - requirements: in roman type;
 - *test specifications: in italic type;*
 - notes: in small roman type;
- 2) subclauses, tables and figures which are in addition to those in Part 1 are numbered starting with 101; additional annexes are lettered starting from AA.

The committee has decided that the contents of this publication will remain unchanged until 2008-06. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

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CABLE TRUNKING AND DUCTING SYSTEMS FOR ELECTRICAL INSTALLATIONS –

Part 2-2: Particular requirements – Cable trunking systems and cable ducting systems intended for underfloor and flushfloor installations

1 Scope

This clause of Part 1 is replaced by:

This part of IEC 61084 specifies requirements for cable trunking systems and cable ducting systems intended for the accommodation, and where necessary for the segregation, of conductors, cables or cords and/or other electrical equipment in electrical installations.

This standard applies to cable trunking systems and cable ducting systems which are mounted beneath or flush with the top face of the finished floor, including their system components.

This specification does not apply to conduits, cable trays or cable ladders or to current-carrying parts within the system.

NOTE 1 Types and applications are shown in Figures 101, 102.

NOTE 2 There are many different designs of systems (see Figure 101) for which a part 2 is under consideration.

NOTE 3 Systems partly or totally above the floor are not covered by this Part 2-2 but may be covered by an amendment to this part or by another part 2.

2 Normative references

This clause of Part 1 is applicable except as follows:

Addition:

IEC 60068-2-60:1995, *Environmental testing – Part 2: Tests – Test Ke : Flowing mixed gas corrosion test* – Basic safety publication

3 Definitions

This clause of Part 1 is applicable except as follows:

Additional definitions:

3.101

underfloor cable trunking system or cable ducting system

cable trunking system or cable ducting system whose components, except floor service units, are relieved from external mechanical load by the materials of the finished floor which in normal use give relief from traffic loads in operational conditions (Figure 103)

3.102**flushfloor cable trunking system or cable ducting system**

cable trunking system or cable ducting system whose components, except floor service units, are relieved from external mechanical load by the materials of the floor on all but the upper face and which is built-in flush with the upper surface of the finished floor. The unprotected face is considered to be exposed to traffic loads (Figure 104)

3.103**finished floor**

floor which carries the load and which may be made of concrete, wood, or the like, and which is completed with floor covering material such as carpet, tile, paint, parquet or similar means. The floor covering material may be fixed to a composition floor made of cement or asphalt

3.104**flushfloor system component**

a system component which in normal use is relieved from external mechanical load by the materials of the finished floor on all but the upper face and which is nominally built-in flush with the upper surface of the finished floor. The unprotected face is considered to be exposed to traffic loads

3.105**floor service unit, when not in use**

floor service unit which has no cables and/or cords connected to electrical appliances

3.106**floor service unit, when in use**

a floor service unit which has cables and/or cords connected to electrical appliances

3.107**cable anchorage**

a system accessory used to relieve conductors from strain in terminals or terminations or to prevent a cable from becoming detached from an enclosure

3.108**dry-treatment of floor**

a process for cleaning and/or care by which the floor is treated without liquids or with only a small quantity of liquid. The required agents are applied and spread in such quantities that no pools are formed and soaking of the floor covering does not occur.

NOTE Examples of dry treatment are: Sweeping with a broom or carpet-sweeper, vacuum cleaning, brushing, cleaning with a dry cleaning powder, dry shampoo treatment, wet shampooing of carpets, treatment with cleaning litter (liquid chemical cleaning agent on a solid material used as carrier, e.g. soaked sawdust, damp cloth, etc.).

3.109**wet-treatment of floor**

a process for cleaning and/or care by which the floor is treated with liquid agents such that pools of liquid, or soaking of the floor covering for a brief period of time, cannot be excluded.

NOTE Examples of wet treatment are: wet scrubbing, manual or mechanical wiping.

4 General requirements

This clause of Part 1 is applicable except as follows:

Add the following as a third paragraph:

Equipment integral with or incorporated in a system component shall comply with the relevant standard for that equipment, if any.

5 General conditions for tests

This clause of Part 1 is applicable except as follows:

5.1 *Replace the second paragraph as follows:*

Type tests on components of a system containing insulating and composite material shall be carried out after the samples have been conditioned at a temperature of $60\text{ °C} \pm 2\text{ °C}$ for 240 h continuously.

6 Classification

This clause of Part 1 is applicable except as follows:

Additional subclauses:

6.101 According to floor treatment

6.101.1 Cable trunking system or cable ducting system for dry-treatment of floor.

6.101.2 Cable trunking system or cable ducting system for wet-treatment of floor when the floor service unit is not in use.

6.101.3 Cable trunking system or cable ducting system for wet-treatment of floor when the floor service unit is in use.

6.102 According to protection against impacts on floor service units when in use

6.102.1 Floor service unit with protection.

6.102.2 Floor service unit without protection.

7 Marking

This clause of Part 1 is applicable except as follows:

7.1 *Replace the first paragraph by the following:*

Each length of trunking/ducting and each trunking/ducting fitting shall be marked with the manufacturer's or responsible vendor's name or trade mark and product identification.

Additional subclauses:

7.101 The manufacturer shall provide in his literature all information necessary for the proper and safe installation and use. It shall include:

- the components of the system;
- the purpose of the system components and their assemblies;
- the usable cross sectional area of trunking/ducting lengths;
NOTE Certain accessories when mounted can reduce the internal usable area for cables.
- any restriction in the space available for mounting and use of accessories;
- the classification of the system in accordance with Clause 6;
- guidance to reach the declared performances.

7.102 Flushfloor system components of systems classified according to 6.101.1 shall be marked that they are not suitable for installation where there will be wet-treatment of floor. The marking shall be visible after completion of the electrical installation. A graphic symbol or pictogram may be used.

7.103 Floor service units shall be clearly marked with a warning to advise against the use of inappropriate plug-in devices which may damage the plug-in device, cord or socket outlet. This warning may be a graphic symbol or pictogram.

7.104 *Compliance with 7.1 and 7.101 to 7.103 is checked by inspection.*

8 Dimensions

This clause of Part 1 is not applicable.

9 Construction

This clause of Part 1 is applicable except as follows:

9.4.1 *In the second paragraph, replace – “service” by “normal use”.*

9.6.2 *In the first paragraph, replace – “40 °C” by “60 °C”.*

Additional subclauses:

9.101 Access covers of underfloor and flushfloor cable trunking systems or cable ducting systems, which in normal use are subjected to external mechanical loads, shall resist movement and unintentional opening.

Compliance is checked by inspection and by the tests of 10.5

9.102 Floor service units in accordance with 6.102.1 shall protect the apparatus and the plug from direct impact when in use. This protection shall be effective and shall not cause damage to the apparatus, the plug and the cable.

Compliance is checked by inspection and by the tests of 10.3.

9.103 It shall be possible to securely fix:

- flushfloor cable trunking systems or cable ducting systems in the floor;
- floor service units to the system and/or the floor;
- apparatus to the floor service units.

Compliance is checked by the tests of 10.5.102 and 10.5.103.

9.104 The manufacturer shall provide effective means of covering openings of underfloor cable trunking systems or cable ducting systems during the installation period so as to provide protection against damage.

Compliance is checked by inspection and by the test of 10.5.101.

9.105 Openings for the passage of cables and cords in underfloor and flushfloor cable trunking systems or cable ducting systems shall protect them from damage. When not in use, it shall be possible to close them completely flush with the surrounding surface.

NOTE An example of surrounding surface is the frame of a floor service unit

Openings, when in use, in underfloor and flushfloor cable trunking systems or cable ducting systems, for the passage of cables and cords, need not be closed if one of its dimensions is less than 20 mm in one direction.

Compliance is checked by inspection and measurement.

9.106 Flushfloor cable trunking systems and cable ducting systems, floor service units and accessories shall comply with their classification according to 6.6.1, 6.6.2 and 6.101.

Compliance is checked by the tests of IEC 60529 and 13.101

9.107 The degree of protection for mounting spaces of floor service units shall be at least IP20.

Compliance is checked by the test of IEC 60529.

9.108 Where apparatus is specifically intended for frequent movement in normal use precautions shall be taken to ensure that its components do not suffer damage due to fatigue.

Compliance is checked by inspection.

9.109 Cable anchorages, if any, shall be suitable for the different types of cables and cords which may be connected according to the manufacturer's instruction.

NOTE In the United Kingdom the cord anchorage of accessories which comply with their own standard need not conform to the requirements of this subclause.

Compliance is checked by inspection and by the following test:

The cable anchorage is assembled with a cable or a cord with the largest outside diameter for which it is designed. Screws, if any, are tightened with 2/3 of the torque given in Table 2 of Part 1.