



IEC 61084-1

Edition 2.1 2024-02  
CONSOLIDATED VERSION

# INTERNATIONAL STANDARD



---

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

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

---

ICS 29.060.01; 29.120.01

ISBN 978-2-8322-8321-9

**Warning! Make sure that you obtained this publication from an authorized distributor.**



IEC 61084-1

Edition 2.1 2024-02  
CONSOLIDATED VERSION

# REDLINE VERSION



---

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



## CONTENTS

FOREWORD.....	5
1 Scope.....	7
2 Normative references .....	7
3 Terms and definitions .....	7
4 General requirements .....	12
5 General conditions for tests .....	12
6 Classification .....	13
6.1 According to material .....	13
6.2 According to resistance to impact for installation and application .....	13
6.2.1 CTS/CDS for impact 0,5 J.....	13
6.2.2 CTS/CDS for impact 0,7 J.....	13
6.2.3 CTS/CDS for impact 1 J.....	13
6.2.4 CTS/CDS for impact 2 J.....	13
6.2.5 CTS/CDS for impact 5 J.....	13
6.2.6 CTS/CDS for impact 10 J.....	13
6.2.7 CTS/CDS for impact 20 J.....	13
6.3 According to temperatures as given in Table 1, Table 2 and Table 3 below.....	13
6.4 According to resistance to flame propagation .....	14
6.4.1 Flame propagating CTS/CDS.....	14
6.4.2 Non-flame propagating CTS/CDS .....	14
6.5 According to electrical continuity characteristic .....	14
6.5.1 CTS/CDS with electrical continuity characteristic .....	14
6.5.2 CTS/CDS without electrical continuity characteristic .....	14
6.6 According to electrical insulating characteristic .....	14
6.6.1 CTS/CDS without electrical insulating characteristic .....	14
6.6.2 CTS/CDS with electrical insulating characteristic .....	14
6.7 According to degrees of protection provided by enclosure according to IEC 60529:1989 .....	14
6.7.1 According to protection against ingress of solid foreign objects .....	14
6.7.2 According to protection against ingress of water .....	15
6.7.3 According to protection against access to hazardous parts .....	15
6.8 According to protection against corrosive or polluting substances .....	15
6.9 According to the system access cover retention.....	15
6.9.1 CTS/CDS access cover, which can be opened without a tool and without a deliberate action .....	15
6.9.2 CTS/CDS access cover, which can only be opened with a tool or a deliberate action .....	15
6.10 Optional classification according to halogen content .....	15
6.10.1 Halogen-free CTS/CDS according to IEC 63355:2022.....	15
6.10.2 Not declared .....	15
7 Marking and documentation.....	15
8 Dimensions.....	17
9 Construction .....	18
9.1 Sharp edges .....	18
9.2 Apparatus mounting.....	18
9.3 Means for protective separation and/or retention .....	18
9.4 Mechanical connections .....	18

9.5	Accessible conductive parts	19
9.6	Equipotential bonding	20
9.7	Access to live parts	20
9.8	Inlet openings	21
9.9	Membranes	21
9.10	Cable restrainer	21
9.11	Cable anchorage	22
10	Mechanical properties	23
10.1	Mechanical strength	23
10.2	Cable support test	23
10.3	Impact test	23
10.3.1	Impact test for storage and transport	23
10.3.2	Impact test for installation and application	24
10.4	Linear deflection test	24
10.5	External load test	25
10.5.1	Fixing test for apparatus mounting of socket outlets	25
10.5.2	Fixing test for apparatus mounting other than socket outlets	25
10.6	System access cover retention	25
11	Electrical properties	26
11.1	Electrical continuity	26
11.1.1	General	26
11.1.2	Preparation and conditioning	26
11.1.3	Electrical impedance tests	26
11.2	Electrical insulation	28
11.2.1	Solid insulation	28
11.2.2	Conditioning and preparation	28
11.2.3	Insulation resistance test	29
11.2.4	Dielectric strength test	29
12	Thermal properties	29
12.1	Resistance to heat	29
12.1.1	General	29
12.1.2	Test for non-metallic or composite system components necessary to retain current-carrying parts in position	29
12.1.3	Test for non-metallic or composite system components not necessary to retain current-carrying parts in position	30
13	Fire hazard	30
13.1	Reaction to fire	30
13.1.1	Initiation of fire	30
13.1.2	Contribution to fire	31
13.1.3	Spread of fire	31
13.1.4	Additional reaction to fire characteristics	32
13.2	Resistance to fire	32
14	External influences	32
14.1	Degree of protection provided by enclosure	32
14.1.1	General	32
14.1.2	Protection against ingress of solid foreign objects	33
14.1.3	Protection against ingress of water	33
14.1.4	Protection against access to hazardous parts	33
14.2	Protection against corrosive or polluting substances	33

15	Electromagnetic compatibility .....	33
16	Environmental properties .....	33
16.1	Halogen content.....	33
	Annex A (informative) Types of cable trunking systems (CTS) and cable ducting systems (CDS).....	42
	Annex B (normative) CTS/CDS IK code .....	44
	Bibliography.....	45
	Figure 1 – Types and application of trunking systems (CTS) and ducting systems (CDS) .....	34
	Figure 2 – Example of impact test apparatus .....	35
	Figure 3 – Arrangement for test for resistance to flame propagation .....	36
	Figure 4 – Enclosure for test for resistance to flame propagation .....	37
	Figure 5 – Ball pressure test apparatus.....	37
	Figure 6 – Electrical impedance tests arrangement.....	39
	Figure 7 – Examples of membranes and grommets.....	39
	Figure 8 – Typical apparatus for testing the resistance of cable anchorage to pull force .....	40
	Figure 9 – Typical apparatus for testing the resistance of cable anchorage to twist force .....	41
	Figure 10 – Piston for durability of marking test .....	41
	Table 1 – Minimum storage and transport temperature .....	13
	Table 2 – Minimum installation and application temperature .....	14
	Table 3 – Maximum application temperature .....	14
	Table 4 – Torque values for the test of screwed connections .....	19
	Table 5 – Forces and torques to be applied to cable anchorage.....	23
	Table 6 – Impact test values .....	24
	Table A.1 – Types of CTS and CDS for wall and ceiling installation .....	42
	Table A.2 – Types of CTS and CDS for floor installation .....	42
	Table A.3 – Types of CTS and CDS for installation between two opposite surfaces .....	43

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

---

### **CABLE TRUNKING SYSTEMS AND CABLE DUCTING SYSTEMS FOR ELECTRICAL INSTALLATIONS –**

#### **Part 1: General requirements**

#### **FOREWORD**

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

**This consolidated version of the official IEC Standard and its amendment has been prepared for user convenience.**

**IEC 61084-1 edition 2.1 contains the second edition (2017-03) [documents 23A/826/FDIS and 23A/833/RVD] and its amendment 1 (2024-02) [documents 23A/1057/FDIS and 23A/1067/RVD].**

**In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.**

International Standard IEC 61084-1 has been prepared by subcommittee 23A: Cable management systems, of IEC technical committee 23: Electrical accessories.

This second edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- classification;
- construction;
- mechanical and electrical properties.

This part of the IEC 61084 series is not intended to be used by itself.

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

A list of all parts in the IEC 61084 series, published under the general title *Cable trunking and cable ducting systems for electrical installations*, can be found on the IEC website.

The committee has decided that the contents of this document and its amendment will remain unchanged until the stability date indicated on the IEC website under [webstore.iec.ch](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

**IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.**

# CABLE TRUNKING SYSTEMS AND CABLE DUCTING SYSTEMS FOR ELECTRICAL INSTALLATIONS –

## Part 1: General requirements

### 1 Scope

This part of the IEC 61084 series specifies requirements and tests for cable trunking systems (CTS) and cable ducting systems (CDS) intended for the accommodation, and where necessary for the electrically protective separation, of insulated conductors, cables and possibly other electrical equipment in electrical and/or communication systems installations. The maximum voltage of these installations is 1 000 V AC and 1 500 V DC.

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

NOTE This part of the IEC 61084 series is not intended to be used by itself.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60417, *Graphical symbols for use on equipment*

IEC 60423:2007, *Conduit systems for cable management – Outside diameters of conduits for electrical installations and threads for conduits and fittings*

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

IEC 60529:1989/AMD1:1999

IEC 60529:1989/AMD2:2013

IEC 60695-2-11:~~2014~~2021, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end-products (GWEPT)*

IEC 60695-11-2:~~2013~~2017, *Fire hazard testing – Part 11-2: Test flames – 1 kW pre-mixed flame – Apparatus, confirmatory test arrangement and guidance*

IEC 61032:1997, *Protection of persons and equipment by enclosures – Probes for verification*

IEC 63355:2022, *Cable management systems – Test method for content of halogens*

ISO 2768-1:1989, *General tolerances – Part 1:Tolerances for linear and angular dimensions without individual tolerance indications*





IEC 61084-1

Edition 2.1 2024-02  
CONSOLIDATED VERSION

**FINAL VERSION**

---

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



## CONTENTS

FOREWORD.....	5
1 Scope.....	7
2 Normative references .....	7
3 Terms and definitions .....	7
4 General requirements .....	12
5 General conditions for tests .....	12
6 Classification .....	13
6.1 According to material .....	13
6.2 According to resistance to impact for installation and application .....	13
6.2.1 CTS/CDS for impact 0,5 J.....	13
6.2.2 CTS/CDS for impact 0,7 J.....	13
6.2.3 CTS/CDS for impact 1 J.....	13
6.2.4 CTS/CDS for impact 2 J.....	13
6.2.5 CTS/CDS for impact 5 J.....	13
6.2.6 CTS/CDS for impact 10 J.....	13
6.2.7 CTS/CDS for impact 20 J.....	13
6.3 According to temperatures as given in Table 1, Table 2 and Table 3 below.....	13
6.4 According to resistance to flame propagation .....	14
6.4.1 Flame propagating CTS/CDS.....	14
6.4.2 Non-flame propagating CTS/CDS .....	14
6.5 According to electrical continuity characteristic .....	14
6.5.1 CTS/CDS with electrical continuity characteristic .....	14
6.5.2 CTS/CDS without electrical continuity characteristic .....	14
6.6 According to electrical insulating characteristic .....	14
6.6.1 CTS/CDS without electrical insulating characteristic .....	14
6.6.2 CTS/CDS with electrical insulating characteristic .....	14
6.7 According to degrees of protection provided by enclosure according to IEC 60529:1989 .....	14
6.7.1 According to protection against ingress of solid foreign objects .....	14
6.7.2 According to protection against ingress of water .....	15
6.7.3 According to protection against access to hazardous parts .....	15
6.8 According to protection against corrosive or polluting substances .....	15
6.9 According to the system access cover retention.....	15
6.9.1 CTS/CDS access cover, which can be opened without a tool and without a deliberate action .....	15
6.9.2 CTS/CDS access cover, which can only be opened with a tool or a deliberate action .....	15
6.10 Optional classification according to halogen content .....	15
6.10.1 Halogen-free CTS/CDS according to IEC 63355:2022.....	15
6.10.2 Not declared .....	15
7 Marking and documentation.....	15
8 Dimensions.....	17
9 Construction .....	18
9.1 Sharp edges .....	18
9.2 Apparatus mounting.....	18
9.3 Means for protective separation and/or retention .....	18
9.4 Mechanical connections .....	18

9.5	Accessible conductive parts	19
9.6	Equipotential bonding	20
9.7	Access to live parts	20
9.8	Inlet openings	21
9.9	Membranes	21
9.10	Cable restrainer	21
9.11	Cable anchorage	22
10	Mechanical properties	23
10.1	Mechanical strength	23
10.2	Cable support test	23
10.3	Impact test	23
10.3.1	Impact test for storage and transport	23
10.3.2	Impact test for installation and application	24
10.4	Linear deflection test	24
10.5	External load test	25
10.5.1	Fixing test for apparatus mounting of socket outlets	25
10.5.2	Fixing test for apparatus mounting other than socket outlets	25
10.6	System access cover retention	25
11	Electrical properties	26
11.1	Electrical continuity	26
11.1.1	General	26
11.1.2	Preparation and conditioning	26
11.1.3	Electrical impedance tests	26
11.2	Electrical insulation	28
11.2.1	Solid insulation	28
11.2.2	Conditioning and preparation	28
11.2.3	Insulation resistance test	29
11.2.4	Dielectric strength test	29
12	Thermal properties	29
12.1	Resistance to heat	29
12.1.1	General	29
12.1.2	Test for non-metallic or composite system components necessary to retain current-carrying parts in position	29
12.1.3	Test for non-metallic or composite system components not necessary to retain current-carrying parts in position	30
13	Fire hazard	30
13.1	Reaction to fire	30
13.1.1	Initiation of fire	30
13.1.2	Contribution to fire	31
13.1.3	Spread of fire	31
13.1.4	Additional reaction to fire characteristics	32
13.2	Resistance to fire	32
14	External influences	32
14.1	Degree of protection provided by enclosure	32
14.1.1	General	32
14.1.2	Protection against ingress of solid foreign objects	33
14.1.3	Protection against ingress of water	33
14.1.4	Protection against access to hazardous parts	33
14.2	Protection against corrosive or polluting substances	33

15	Electromagnetic compatibility .....	33
16	Environmental properties .....	33
16.1	Halogen content.....	33
Annex A (informative)	Types of cable trunking systems (CTS) and cable ducting systems (CDS).....	42
Annex B (normative)	CTS/CDS IK code .....	44
	Bibliography.....	45
Figure 1 –	Types and application of trunking systems (CTS) and ducting systems (CDS) .....	34
Figure 2 –	Example of impact test apparatus .....	35
Figure 3 –	Arrangement for test for resistance to flame propagation .....	36
Figure 4 –	Enclosure for test for resistance to flame propagation .....	37
Figure 5 –	Ball pressure test apparatus.....	37
Figure 6 –	Electrical impedance tests arrangement .....	39
Figure 7 –	Examples of membranes and grommets .....	39
Figure 8 –	Typical apparatus for testing the resistance of cable anchorage to pull force .....	40
Figure 9 –	Typical apparatus for testing the resistance of cable anchorage to twist force .....	41
Figure 10 –	Piston for durability of marking test .....	41
Table 1 –	Minimum storage and transport temperature .....	13
Table 2 –	Minimum installation and application temperature .....	14
Table 3 –	Maximum application temperature .....	14
Table 4 –	Torque values for the test of screwed connections .....	19
Table 5 –	Forces and torques to be applied to cable anchorage.....	23
Table 6 –	Impact test values .....	24
Table A.1 –	Types of CTS and CDS for wall and ceiling installation .....	42
Table A.2 –	Types of CTS and CDS for floor installation .....	42
Table A.3 –	Types of CTS and CDS for installation between two opposite surfaces .....	43

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

---

### **CABLE TRUNKING SYSTEMS AND CABLE DUCTING SYSTEMS FOR ELECTRICAL INSTALLATIONS –**

#### **Part 1: General requirements**

#### **FOREWORD**

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). 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. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

**This consolidated version of the official IEC Standard and its amendment has been prepared for user convenience.**

**IEC 61084-1 edition 2.1 contains the second edition (2017-03) [documents 23A/826/FDIS and 23A/833/RVD] and its amendment 1 (2024-02) [documents 23A/1057/FDIS and 23A/1067/RVD].**

**This Final version does not show where the technical content is modified by amendment 1. A separate Redline version with all changes highlighted is available in this publication.**

International Standard IEC 61084-1 has been prepared by subcommittee 23A: Cable management systems, of IEC technical committee 23: Electrical accessories.

This second edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- classification;
- construction;
- mechanical and electrical properties.

This part of the IEC 61084 series is not intended to be used by itself.

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

A list of all parts in the IEC 61084 series, published under the general title *Cable trunking and cable ducting systems for electrical installations*, can be found on the IEC website.

The committee has decided that the contents of this document and its amendment will remain unchanged until the stability date indicated on the IEC website under [webstore.iec.ch](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

# CABLE TRUNKING SYSTEMS AND CABLE DUCTING SYSTEMS FOR ELECTRICAL INSTALLATIONS –

## Part 1: General requirements

### 1 Scope

This part of the IEC 61084 series specifies requirements and tests for cable trunking systems (CTS) and cable ducting systems (CDS) intended for the accommodation, and where necessary for the electrically protective separation, of insulated conductors, cables and possibly other electrical equipment in electrical and/or communication systems installations. The maximum voltage of these installations is 1 000 V AC and 1 500 V DC.

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

NOTE This part of the IEC 61084 series is not intended to be used by itself.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60417, *Graphical symbols for use on equipment*

IEC 60423:2007, *Conduit systems for cable management – Outside diameters of conduits for electrical installations and threads for conduits and fittings*

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

IEC 60529:1989/AMD1:1999

IEC 60529:1989/AMD2:2013

IEC 60695-2-11:2021, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end-products (GWEPT)*

IEC 60695-11-2:2017, *Fire hazard testing – Part 11-2: Test flames – 1 kW pre-mixed flame – Apparatus, confirmatory test arrangement and guidance*

IEC 61032:1997, *Protection of persons and equipment by enclosures – Probes for verification*

IEC 63355:2022, *Cable management systems – Test method for content of halogens*

ISO 2768-1:1989, *General tolerances – Part 1: Tolerances for linear and angular dimensions without individual tolerance indications*