



BSI Standards Publication

Electrical supply track systems for luminaires

National foreword

This British Standard is the UK implementation of EN 60570:2003+A2:2020. It is derived from IEC 60570:2003, incorporating amendment 1:2017 and amendment 2:2019. It supersedes BS EN 60570:2003+A1:2018, which will be withdrawn on 15 January 2023.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to IEC text carry the number of the IEC amendment. For example, text altered by IEC amendment 1 is indicated by **A1** **A1**.

The CENELEC common modifications have been implemented at the appropriate places in the text. The start and finish of each common modification is indicated in the text by tags **C** **C**.

The UK participation in its preparation was entrusted to Technical Committee CPL/34/4, Luminaires.

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

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2020
Published by BSI Standards Limited 2020

ISBN 978 0 580 98771 7

ICS 29.120.20; 29.140.40

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 24 September 2003.

Amendments/corrigenda issued since publication

Date	Text affected
30 June 2018	Implementation of IEC amendment 1:2017 with CENELEC endorsement A1:2018
30 April 2020	Implementation of IEC amendment 2:2019 with CENELEC endorsement A2:2020

EUROPEAN STANDARD

EN 60570:2003+A2

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2020

ICS 29.120.20; 29.140.40

Supersedes EN 60570:1996 + A1:1998 + A2:2000 & EN 60570-2-1:1994 + A1:1996

English version

Electrical supply track systems for luminaires (IEC 60570:2003, modified)

Systèmes d'alimentation électrique
par rail pour luminaires
(CEI 60570:2003, modifiée)

Elektrische Stromschienensysteme
für Leuchten
(IEC 60570:2003, modifiziert)

This European Standard was approved by CENELEC on 2003-03-18. 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 electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Lithuania, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, 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

European Foreword

The text of document 34D/770/FDIS, future edition 4 of IEC 60570, prepared by SC 34D, Luminaires, of IEC TC 34, Lamps and related equipment, was submitted to the IEC-CENELEC parallel vote. Together with existing common modifications in EN 60570:1996, it was approved by CENELEC as EN 60570 on 2003-03-18.

This European Standard supersedes EN 60570:1996 + A1:1998 + A2:2000 and EN 60570-2-1:1994 + A1:1996.

This standard is to be used in conjunction with EN 60598-1.

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) 2004-02-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2010-03-01

Annexes designated "normative" are part of the body of the standard.
In this standard, annex ZA is normative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60570:2003 was approved by CENELEC as a European Standard with agreed common modifications.

European foreword to amendment A1

The text of document 34D/1221/CDV, future edition 1 of IEC 60570:2003/A1:2017, prepared by IEC/SC 34D "Luminaires" of IEC/TC 34 "Lamps and related equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60570:2003/A1:2018.

The following dates are fixed:

- latest date by which the document has to be (dop) 2018-11-18
implemented at national level by
publication of an identical national
standard or by endorsement
- latest date by which the national (dow) 2021-05-18
standards conflicting with the
document have to be withdrawn

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC 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).

For the relationship with EU Directive see informative Annex ZZ, which is an integral part of this document.

Endorsement notice

The text of the International Standard IEC 60570:2003/A1:2017 was approved by CENELEC as a European Standard without any modification.

European foreword to amendment A2

The text of document 34D/1502/FDIS, future IEC 60570/A2, prepared by SC 34D "Luminaires" of IEC/TC 34 "Lamps and related equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60570:2003/A2:2020.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2020-10-15
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-01-15

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC 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).

For the relationship with EU Directive(s), see informative Annex ZZ, included in EN 60570:2003/A1:2018.

Endorsement notice

The text of the International Standard IEC 60570:2003/A2:2019 was approved by CENELEC as a European Standard without any modification.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60417-2	– ¹⁾	Graphical symbols for use on equipment Part 2: Symbol originals	EN 60417-2	– ¹⁾
IEC 60598-1 (mod)	2014	Luminaires - Part 1: General requirements and tests	EN 60598-1	2015
+ A1	2017		+ A1	2018
IEC 60598-2-22	2014	Luminaires - Part 2-22: Particular requirements - Luminaires for emergency lighting	EN 60598-2-22	2014
-	-		+ AC	2015
+ A1	2017		+ A1	2020
-	-		EN 60598-2-22:2014 /AC:2016-09	
IEC 61032	1997	Protection of persons and equipment by enclosures - Probes for verification	EN 61032	1998

¹⁾ Undated reference.

Annex ZZ
(informative)

Relationship between this European standard and the safety objectives of Directive 2014/35/EU [2014 OJ L96] aimed to be covered

This European Standard has been prepared under a Commission's standardization request relating to harmonized standards in the field of the Low Voltage Directive, M/511, to provide one voluntary means of conforming to safety objectives of Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits [2014 OJ L96].

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZZ.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding safety objectives of that Directive, and associated EFTA regulations.

Table ZZ.1 – Correspondence between this European standard and Annex I of Directive 2014/35/EU [2014 OJ L96]

Safety objectives of Directive 2014/35/EU	Clause(s) / sub-clause(s) of this EN	Remarks / Notes
1. General conditions		
a) the essential characteristics, the recognition and observance of which will ensure that electrical equipment will be used safely and in applications for which it was made, shall be marked on the electrical equipment, or, if this is not possible, on an accompanying document;	6	
b) the electrical equipment, together with its component parts, shall be made in such a way as to ensure that it can be safely and properly assembled and connected;	All, except Clauses 1, 2 and 3	
c) the electrical equipment shall be so designed and manufactured as to ensure that protection against the hazards set out in points 2 and 3 is assured, providing that the equipment is used in applications for which it was made and is adequately maintained.	See item 2 and 3 of this table	
2. Protection against hazards arising from the electrical		

equipment Measures of a technical nature shall be laid down in accordance with point 1, in order to ensure that:		
a) persons and domestic animals are adequately protected against the danger of physical injury or other harm which might be caused by direct or indirect contact;	7 and 8 16 18 and 18 11 13	
b) temperatures, arcs or radiation which would cause a danger, are not produced;	7 and 8 9 12 15	Products covered by this standard are considered passive with respect to EMF
c) persons, domestic animals and property are adequately protected against non-electrical dangers caused by the electrical equipment which are revealed by experience;	7 and 8 15 9	
d) the insulation is suitable for foreseeable conditions.	14 15	
3. Protection against hazards which may be caused by external influences on the electrical equipment Technical measures shall be laid down in accordance with point 1, in order to ensure that the electrical equipment:		
a) meets the expected mechanical requirements in such a way that persons, domestic animals and property are not endangered;	6 7 and 8	
b) is resistant to non-mechanical influences in expected environmental conditions, in such a way that persons, domestic animals and property are not endangered;	14 17	
c) does not endanger persons, domestic animals and property in foreseeable conditions of overload.	8 12	

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

<http://www.china-gauges.com/>

CONTENTS

FOREWORD	3
1 Scope	5
2 Normative references	5
3 Terms and definitions	6
4 Classification	8
5 General test requirements	8
6 Marking	9
7 General requirements and ratings	11
8 Construction	11
9 Creepage distances and clearances	16
10 Terminals	16
11 External and internal wiring	16
12 Thermal endurance and operating temperatures	17
13 Protection against electric shock	18
14 Resistance to humidity	18
15 Insulation resistance and electric strength	18
16 Provision for earthing	19
17 Resistance to heat, fire and tracking	19
18 Terminals and connections for external wiring	20
A2 Annex A (informative) Test to be carried out on luminaires supplied with track systems providing control signals A2	24
Figure 1 – Luminaire track systems (definitions)	21
Figure 2 – Measurement positions for typical class III adaptor contacts	22
A1 Figure 3 A1 – A2 Measurement positions for typical class I tracks (not to scale)	22
Figure 4 – Measurement positions for typical class III adaptor contacts with protruding contacts A2	23

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTRICAL SUPPLY TRACK SYSTEMS FOR LUMINAIRES

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 cooperation 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.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60570 has been prepared by subcommittee 34D: Luminaires, of IEC technical committee 34: Lamps and related equipment.

This fourth edition cancels and replaces the third edition published in 1995 as well as the first edition of IEC 60570-2-1 published in 1994 and constitutes a minor revision.

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

FDIS	Report on voting
34D/770/FDIS	34D/774/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 standard shall be used in conjunction with IEC 60598-1.

NOTE In this standard, the following print types are used:

- requirements proper: in roman type;
- *test specifications: in italic type;*
- notes: in smaller roman type.

The committee has decided that the contents of this publication will remain unchanged until 2005. At this date the publication will be

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

<http://www.china-gauges.com/>

ELECTRICAL SUPPLY TRACK SYSTEMS FOR LUMINAIRES

1 Scope

This International Standard applies to the following track systems with two or more poles for the connection of luminaires to the electrical supply consisting of, either

- a system with a rated voltage not exceeding 440 V between poles (live conductors) with provision for earthing (class I) and a rated current not exceeding 16 A per conductor, or
- a SELV system without provision for protective earthing (class III) and a rated current not exceeding 25 A per conductor, or
- a combination of the two systems mentioned above (mixed supply system) for the connection of both mains voltage luminaires (class I or II) and SELV supplied luminaires (class III) simultaneously, but in different sector openings (mains or SELV).

The track systems may also provide for the mechanical support of the luminaires.

It applies to track systems designed for ordinary interior use for mounting on, or flush with, or suspended from walls and ceilings. These track systems are not intended for locations where special conditions prevail as in ships, vehicles and the like and in hazardous locations, for example, where explosions are liable to occur.

This document does not cover operational or performance compatibility between different track systems. Protection against unsafe compatibility between Class I and Class III circuit is covered by this document.

The track system can be provided with auxiliary circuits for the purpose of a control or audio signal other than supply.

NOTE 1 At present, the following types of control systems are available on the market:

- control signal, with basic insulation to LV supply (e.g. digital addressable lighting interface, 1 V to 10 V DC signal);
- control signal, SELV/PELV insulated to LV supply (e.g. DMX);
- control signal, not insulated to LV supply (e.g. push button control/phase cut/step dim).

Track systems can also be provided with conductors specifically identified for emergency lighting luminaires.

NOTE 2 Requirements for PELV are under consideration, pending modification in IEC 60598-1.

2 Normative references

The following referenced documents are indispensable for the application 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 60417-2, *Graphical symbols for use on equipment – Part 2: Symbol originals*

IEC 60598-1:2014, *Luminaires – Part 1: General requirements and tests*
IEC 60598-1:2014/AMD1:2017

NOTE The 9th edition of IEC 60598-1 is under preparation. Stage at the time of publication IEC PRVC 60598-1:2019. This 9th edition provides a cross link between IEC 60598-1 and IEC 60570 for track mounted luminaires.

IEC 60598-2-22:2014, *Luminaires – Part 2-22: Particular requirements – Luminaires for emergency lighting*
 IEC 60598-2-22:2014/AMD1:2017 ^{A2}

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

3 Terms and definitions

For the purposes of this standard, the definitions of section one of IEC 60598-1 apply, together with the following definitions.

NOTE The use of the term luminaire (see IEC 60598-1) hereinafter also includes components of the luminaire track system.

3.1

luminaire track system

system, including a track with conductors, for the connection of luminaires to an electrical supply in a range of different positions determined only by the length and location of the track and comprising some or all of the components defined in 3.2 to 3.14 (see also Figure 1)

^{A2} NOTE 1 to entry: The track system may be provided with auxiliary circuits for the purpose of a control or audio signal other than supply; the track system may be used to supply luminaires where the control signals are injected via supply conductors or a circuit connected to the supply via separated conductors (e.g. powerline).

NOTE 2 to entry: The track system may be provided with circuits identified to ensure battery recharge (for self-contained emergency luminaires). ^{A2}

3.2

track

generally linear assembly of conductors within a housing providing the electrical connection and in most instances mechanical support of luminaires

NOTE Luminaires can be positioned or repositioned along the length of track in a simple manner (that is, without the use of tools).

3.3

track* coupler

component enabling electrical or mechanical connection to be made between tracks, but electrically only on the same sector opening (mains voltage or SELV)

3.4

track* supply connector

component used for the electrical connection of a supply to the track system, but always operating on one sector opening only

NOTE 1 The function of a coupler and a track supply connector may be combined.

NOTE 2 For the SELV sector, the track supply connector may incorporate a SELV convertor or safety isolating transformer supplied directly from the mains voltage sector.

3.5

luminaire supply connector

component for the electrical connection of a luminaire to the track. A connector does not provide mechanical connection of a luminaire to the track

The electrical connection shall operate on one sector only (mains or SELV)

IEC 60570:2003+A2:2019
© IEC 2019

3.6 **track* adaptor**

component used for the electrical and mechanical connection of a luminaire to the track, but electrically and mechanically only on the same sector opening (mains voltage or SELV)

NOTE An adaptor may incorporate a switch or a fuse.

3.7 **track* suspension device**

component used for the mechanical connection of the track system to the supporting surface

3.8 **luminaire suspension device**


component used for the mechanical connection of a luminaire to the track


3.9 **end cover**

component intended to be fixed at the end of a track, providing electrical and mechanical protection of the ends of the conductors

3.10 **class I track**



generally linear assembly of conductors and housing designed to be operated from a mains voltage supply providing the electrical connection and in most instances mechanical support of class I and class II luminaires only.

 Note 1 to entry: The track can be provided with auxiliary circuits for control or audio signals. These auxiliary circuits can use conductors originally designed for mains supply.

Note 2 to entry: The track system can be provided with circuits identified to ensure battery recharge (for self-contained emergency luminaires). 

3.11 **class III track**

generally linear assembly of conductors and housing designed to be operated from a SELV supply providing the electrical connection and in most instances mechanical support of class III luminaires only

 Note 1 to entry: The track can be provided with auxiliary circuits for a SELV control or audio signals. These auxiliary circuits can use separate auxiliary conductors or conductors originally designed for a SELV supply. 

3.12 **mixed supply track system – classes I and III**

combination of tracks according to 3.10 and 3.11

3.13 **rated current**

current assigned to the track or the component by the manufacturer

3.14 **track* sector opening**

opening in the track enabling the electrical connection of the adaptor or the luminaire supply connector to the track conductors

* The word 'track' is occasionally not repeated in the text of the standard where these definitions are used.

* The word 'track' is occasionally not repeated in the following text where these definitions are used.

4 Classification

Luminaire track systems shall be either class I, class III or a mixed supply track system with class I and class III sectors in accordance with the provisions of section two of IEC 60598-1.

Track systems shall only be classified as ordinary.

Luminaire/adaptor assemblies that are inseparable can be class II in accordance with the provisions of section two of IEC 60598-1 provided they contain no earthing facilities.

Separate adaptors shall not be classified as class II, but may be used with class II luminaires.

5 General test requirements

5.1 The requirements and tests of this standard shall not be applied to equipment already subject to its own separate IEC standard.

5.2 Tests according to this standard are type tests.

One test sample as described in 5.3 shall be subjected to all relevant tests.

In order to reduce the time of testing and to allow for any tests which may be destructive, the manufacturer may submit additional samples or parts of samples provided that these are of the same materials as the original sample and that the results of the test are the same as if carried out on a single sample.

5.3 Unless otherwise specified, the sample is tested as delivered and under the most unfavourable conditions of use taking into account the manufacturer's instructions, at an ambient temperature of between 10 °C and 30 °C.

The minimum test sample of a class I or a class III track shall include A_2 items a) to i) as follows. A_2 For a mixed supply system the minimum sample quantities stated are required for both class I and class III sectors.

A_2 For track systems with control interface and/or additional circuits, it is necessary to provide samples of the different constructions (both with and without additional circuits); the same is applicable for tracks designed to be used together with emergency luminaires. A_2

- a) where a track system provides for interconnection between track lengths, at least 3 sections of track comprising a total length when assembled together of not less than 2,4 m and including 1 section of maximum length as indicated in the manufacturer's literature. Where interconnection is not provided for, only 1 track section of maximum length is required;
- b) 1 track supply connector;
- c) 1 end cover (if required);
- d) 1 coupler per length of track supplied (if applicable) (minimum of 3);
- e) 1 adaptor per length of track supplied (minimum of 3);
- f) 1 luminaire supply connector per length of track supplied (if applicable) (minimum of 3);
- g) the necessary suspension devices and any other components as specified by the manufacturer in his installation instructions;
- h) a typical luminaire representing the most unfavourable combination from a testing point of view for the purpose of the test of clause 11;
- i) additionally with a class III test sample, one selection of track of each type of class I track made by the same manufacturer.

IEC 60570:2003+A2:2019
© IEC 2019

NOTE Item i) is required for the tests of 8.1.1 when testing a class III track.

5.4 Unless otherwise specified, the tests are carried out in the order of the clauses.

6 Marking

The provisions of section three of IEC 60598-1 apply together with the requirements in 6.1 to ^{A2}6.9 ^{A2}.

6.1 The track shall be marked with rated current (A), rated voltage (V) and the graphical symbol IEC 60417-5180 for class III equipment if appropriate.

A mixed supply system shall be marked with rated current (A), rated voltage (V) on the mains voltage sector and on the SELV sector respectively. The SELV sector shall also be marked with the ^{A2} graphical symbol IEC 60417-5180 for class III ^{A2}.

6.2 Adaptors need only be marked with their rated current, rated voltage, manufacturer's name or trade mark and type reference and the graphical symbol IEC 60417-5180 for class III equipment if appropriate.

Adaptors and luminaire supply connectors incorporated in luminaires do not require marking additional to that of the luminaire.

If the adaptor has a fuse incorporated, the rated current and type of fuse shall be marked on the body of the adaptor.

6.3 Couplers and connectors need only be marked with the manufacturer's name or trade mark and type reference and the graphical symbol IEC 60417-5180 for class III equipment if appropriate.

Luminaire supply connectors not incorporated in the luminaire shall, in addition, be marked with rated current and rated voltage. ^{A2} All terminals shall be marked with their identification; the mounting instructions shall explain the meaning of identification and the relevant circuit connections and/or functions.

NOTE Some track and adaptor terminals can be identified with a dual function such as for supply or audio signal connection. ^{A2}

6.4 Marking of the rated current and the rated voltage of the track system shall be easily discernible during and after installation of the track system.

^C Text deleted ^C

6.5 In addition to the above markings the following details, if they are necessary to ensure proper use and maintenance, shall be given either on the luminaire track system or in the manufacturer's instructions supplied with it:

- a) details of the maximum mechanical loading for which each section of the track system and luminaire suspension devices are suitable, inclusive of the weight of luminaires and accessories. In addition, a warning that the mechanical loading shall be intended as the complete loading of the whole system. ^{A2} If the track is intended to be wall mounted, or has similar non-horizontal mounting, the instructions shall contain information regarding any limitations of the track positioning, and the maximum specified mechanical loadings. ^{A2}
- b) a warning if the components are unsuitable for the connection of inductive loads, or derating for inductive loads if appropriate;

- c) the maximum permissible track temperature under normal operating conditions if different from 70 °C;
- d) a warning that it is the user's responsibility to ensure electrical, mechanical and thermal compatibility between the track system and luminaire attached to it.

Mounting instructions supplied with the adaptor shall state the track system on which it may be used and warnings shall be given that its use is limited to the track system specified.

ⓘ Instructions related to safety shall be in a language which is acceptable in the country in which the equipment is to be installed. ⓘ

6.6 In addition to the above markings and information, the following details shall be given in the manufacturer's instructions supplied with class III and mixed supply track systems;

- a) a warning that the class III system or sector opening should only be connected to a SELV supply designed for operating class III equipment;
- b) ⓘ where there is an associated safety isolating transformer or lamp controlgear, instructions regarding the correct method of connection of the transformer or lamp controlgear terminals to avoid misinterpretation of the primary and secondary terminals; ⓘ
- c) a warning that class III luminaire track systems/sectors openings and components are not compatible with class I track systems and that class III luminaire connectors/adaptors should not be used on other manufacturer's track systems;
- d) instructions concerning suitable means for overload and short-circuit protection of the SELV circuit;
ⓘ Text deleted ⓘ
- e) the minimum cross-sectional area and maximum length of the supply cable between transformer and track supply connector;
- ⓘ f) a warning that for Class III track systems any connected control or audio signals shall only be provided by a SELV source. ⓘ

6.7 The instruction leaflet for class III track systems/sector openings shall contain the following warning:

CAUTION: TO REDUCE THE RISK OF OVERHEATING AND FIRE
DO NOT BRIDGE CONDUCTORS

ⓘ 6.8 Marking for tracks using other circuits

In addition to the above markings and information, the following details shall be given in the manufacturer's instructions supplied with tracks using control signals via conductors originally designed for mains supply:

- Instructions for the safe connection of control signal conductors if any misconnection could inadvertently reduce the required electrical insulation between circuits.

6.9 Marking for track suitable for supplying emergency luminaires

In addition to the above markings and information, the following details shall be given in the manufacturer's instructions:

- for track systems designed to operate centrally supplied emergency luminaires: a warning that the track and components shall be connected to a system designed to supply emergency luminaires, to ensure the correct operating of emergency luminaires on the whole system;
- for track systems used to supply a self-contained emergency luminaire: information that the supply line for battery recharging shall be un-switched. ⓘ

7 General requirements and ratings

Track systems shall be so designed and constructed that in normal use they function safely and minimize the risk of danger to persons and surroundings.

In general, compliance is checked by carrying out all tests specified.

[A2] The rated voltage between poles for a class I track system shall not exceed 440 V and for a class III system the rated voltage shall not exceed SELV voltage limits as specified in IEC 60598-1. **[A2]** The current rating for a class I track system shall be maximum 16 A and for a class III system it shall be maximum 25 A. For a combined system the rated current of each sector opening shall not exceed the values given for a class I or a class III system respectively.

Compliance is checked by inspection.

8 Construction

[A2] The provisions of section four of IEC 60598-1 apply together with the requirements in 8.1 to 8.13 with the exception of 4.11.6 which is replaced by 8.9.

Annex A provides details regarding the test to be carried out on luminaires supplied by track systems using control signals via conductors designed for supply voltage.

*Compliance shall be checked by carrying out the tests in Annex A as applicable. **[A2]***

8.1 Components for class I tracks shall be so designed that there is no risk of accidental contact between the earthing contact of the component and the current-carrying parts of the track during insertion and removal by the user.

This requirement does not apply during installation of the track system.

8.1.1 Adaptors, couplers and supply connectors shall be so constructed that electrical connection with systems/sectors openings of other classes of tracks made by the same manufacturer is effectively prevented.

8.2 Class I adaptors shall incorporate provision for mechanical connection to the track such that the weight of the adaptor and/or luminaire is not supported by the electrical connections of the adaptor and track.

The requirements of 16.3 shall also apply.

Class III adaptors shall incorporate provision for mechanical connection to the track such that the weight of the adaptor and/or luminaire cannot impair electrical connection and safety.

8.2.1 When fuses are incorporated in adaptors they shall be of the high-breaking capacity type.

8.3 Contacts of adaptors shall not be removable without dismantling the adaptor. Also, it shall not be possible to replace the earthing pins or contacts in an incorrect position and this provision shall also apply to neutral pins or contacts where this is a safety requirement of the method of construction of the system.

Where luminaires meet the requirements of class II and are provided with an integral adaptor for connection to track systems, the adaptor may incorporate an earthing contact provided

that, when connected to the track, the requirements of class II for the luminaire are maintained.

Compliance is checked by inspection and by the electrical strength test of 15.1.

8.4 Couplers, track supply connectors and end covers shall be capable of being mechanically locked to the track. Couplers, connectors and adaptors shall ensure reliable electrical connection.

Compliance with the requirements in 8.1 to 8.4 is checked by inspection, manual test and where appropriate by the test in 12.1.

Compliance of 8.1.1 is checked by attempting to insert the adaptors, couplers and connectors into the different samples of the track system/sector openings. There shall be no electrical connection made.

8.5 Adjacent lengths of track shall be mechanically locked together in one of the following ways:

- a) with the aid of couplers;
- b) by other separate means using the couplers only to align the tracks;
- c) by rigidly fixing the length of track directly to the supporting surface in which case the electrical contact shall be reliable when the ends of the track sections are separated longitudinally by 1 mm and when they are separated by 1 mm at right angles to the supporting surface.

NOTE A spacing at right angles to the supporting surface is specified in order to take account of unevenness of the surface.

Compliance is checked by carrying out the tests with the track in this position.

8.6 Mechanical suspensions shall have adequate factors of safety. The tests in 4.14.1 of IEC 60598-1 shall be replaced by the following tests for luminaire track system suspensions.

Compliance is checked by the following tests:

A2 To test the suspension of both track and luminaires, suspension devices for luminaires, including adaptors, are mounted on the track as in normal use specified by the track manufacturer and are subjected for 1 h to a load equal to 5 times the specified load as claimed by the manufacturer. The minimum claimed load value for adaptor and for suspension devices for luminaires shall be:

- 50 N for class I and class II;
- 10 N for class III;
- the weight of the luminaire for adaptors which are integrated in the luminaire.

NOTE The adaptors according to the third bullet are intended for use by luminaire manufacturers only and are not for retail sale.

This test shall be made at a temperature of t_a of the track +15 °C.

*After the test, the components, the track and its fixing devices shall not be deformed to such an extent that safety would be impaired and the components shall not have become detached from the track. **A2***

For the purpose of the following bending test, which is an additional test of luminaire suspension devices, the track is mounted on a horizontal surface.

The test shall be made at a temperature of t_a of the track $+15\text{ }^{\circ}\text{C}$.

A2) A bending moment of 2,5 Nm is then applied to the luminaire suspension/fixing device, the force being applied for 1 min in a direction parallel to the track axis and for 1 min in a direction perpendicular to this axis.

After the test, the luminaire suspension/fixing device and other parts of the track system shall not be deformed to such an extent that safety would be impaired and the suspension device shall not have become loose.

NOTE Additional tests may be required for track systems designed for use in low-temperature areas.

8.7 Track shall have adequate mechanical robustness.

Compliance is checked by the following test:

A force of 30 N is applied to metal parts enclosing live parts by means of a test finger according to Figure 6 of IEC 61032. During the test, the clearance distance between metal parts and live parts shall be not less than the values given in clause 9.

8.8 Polarity

Where necessary for the correct operation of the system, means shall be provided throughout to ensure that the correct polarity is maintained.

Compliance is checked by inspection.

8.9 Mechanical/electrical endurance

Components shall withstand, without excessive wear and other harmful effects, the mechanical, electrical and thermal stresses occurring in normal use.

For adaptors and luminaire supply connectors, compliance is checked by the following tests in which "an operation" is either the insertion or withdrawal of an adaptor or the making or breaking of an electrical contact at a speed which corresponds to practical usage.

- The mechanical support system is checked by 100 operations.
- Electrical contacts which operate simultaneously with the mechanical fixing devices are checked by 100 operations in the same position on the track.
- Electrical contacts which are operated independently from the mechanical fixing devices are checked by 1 000 operations. After each 100 operations the contacts shall be moved to a fresh position on the track. This test is applicable only to adaptors.
- Where the luminaire supply connector or adaptor for a class III track system/sector is designed to be positioned along the axis of the track without being removed, it shall be subject to 150 cycles of operation as described in 4.14.3 of IEC 60598-1.

The tests of items b) and c) are made with a.c. at rated voltage and the test current shall be 1,25 times the rated current of the component. The power factor of the load shall be approximately 0,6 unless a different current rating is marked for resistor loads which are then tested with a.c. in a non-inductive circuit. For class III systems, the power factor is taken as 1,0.

NOTE In the case of a dual rating (see item b) of 6.5), the more onerous condition should be applied.

If an air core inductor is used for the 0,6 power factor load, a resistor taking approximately 1 % of the current through the inductor is connected in parallel with it. Iron core inductors may be used, provided the current is of substantially sinusoidal waveform. No current is passed through the earthing circuit.

After the test, the samples shall withstand an electric strength test made in accordance with 10.2 of IEC 60598-1, the test voltage however, being reduced to 500 V for components operating at mains supply voltage and to 500 V for components operating at SELV.

The samples shall show:

- a) no wear impairing their further use;*
- b) no deterioration of enclosure or barriers;*
- c) no loosening of electrical or mechanical connections.*

Before and after the tests of this clause, the adaptor shall be mounted on the track and the contacts loaded with 1,5 times the rated current of the adaptor. The voltage drop across each contact, including the earth contact, shall not exceed 50 mV.

9.10 Short-circuit protection

8.10.1 For class I system/sector openings it shall not be possible to bridge track conductors with the test probe D, according to IEC 60598-1.

Compliance is checked by the test of 9.2.0 of IEC 60598-1, using the test probe D application force shown in Table 9.1.

8.10.2 The SELV class III track system/sector opening shall incorporate means to prevent accidental short circuits between current-carrying parts of different polarity in the output circuit.

Adequate means shall be provided to prevent impairing of safety due to unintended short-circuiting of uninsulated accessible SELV conductors of opposite polarity by the test chain described in 4.26.3 of IEC 60598-1.

NOTE 1 Class III luminaires supplied from a separate unspecified SELV supply should have at least one conductor insulated. Where insulation is not provided, the luminaire manufacturer should declare the maximum VA output of the SELV source and the test should be conducted at this value.

NOTE 2 If the test chain cannot be hung on the track by itself, the test sample is deemed to comply with the test requirement.

Compliance is checked by the test of 4.26.2 of IEC 60598-1.

8.11 Interchangeability

8.11.1 Care shall be taken in the design and manufacture of adaptors for use with a particular track system to ensure interchangeability and safety in use. In particular, no connections between live conductors and earth conductors shall be possible.

Tests shall be conducted with approved track samples retained by the test house or samples of the approved track provided by the manufacturer.

The minimum insulation between supply circuits (LV, SELV) and the housing and control/signal interface shall be at least those specified in IEC 60598-1.

SELV circuits shall not use conductors designed for mains supply; this restriction also applies to control signal and audio circuits which may be provided from a SELV source.

SELV circuits shall comply with the requirements for Class III track.

IEC 60570:2003+A2:2019
© IEC 2019

Track conductors designed for the supply connection to luminaires may be used for other than SELV control signal purposes if the insulation for those conductors meets the requirements for relevant mains supply voltages.

It shall not be possible to reduce the minimum creepage distances and clearances between different circuits, as specified in IEC 60598-1, neither along the track, nor inside the components. This requirement shall be observed even in the case of connection of different adaptors/components with different purposes of the same manufacturer in the track body, with the only exception of track using control signals via conductors originally designed for mains supply and marked accordingly.

The track and adaptor shall comply with all appropriate parts of IEC 60598-1.

8.11.2 The opening in the insulating liner of a class I track/track sector giving access to the conductor shall have a maximum dimension of 3,0 mm and the conductor shall be recessed into the insulating liner by at least 1,7 mm.

The contacts of class III adaptors shall either:

- have a minimum dimension of 3,5 mm in any orientation that can be presented to the conductor opening in the insulating liner of any class I track sector, or
- the contacts shall not protrude by more than 1 mm from a surface that has a minimum dimension of 3,5 mm in any orientation that can be presented to the conductor opening in the insulating liner of any class I track/track sector (see example in Figure 4).

NOTE 1 This second requirement ensures, by requiring maximum protruding dimension of 1 mm, that there is no electrical contact between the contacts of class III adaptors and the mains voltage conductors (being recessed by at least 1,7 mm).

NOTE 2 For clarity, the dimensions of the class I tracks and the class III adaptor contacts are measured in the positions shown in Figures 2, 3 and 4.

Compliance is checked by measurements.

The opening in the insulation liner of the track system giving access to the control interface conductor of the following type:

- control signal, with basic insulation to LV supply,
- control signal, not insulated to LV supply

shall comply with the requirements of 8.11.2 for Class I tracks.

The opening in the insulation liner of the track system giving access to the SELV control interface conductor shall comply with the requirements of 8.11.1 for Class III tracks with the exception of the minimum dimension that can be reduced.

NOTE 3 For clarity, the dimensions of the class I tracks and the class III adaptor contacts are measured in the positions shown in Figures 2 and 3.

Compliance is checked by inspection and measurements.

8.12 Track systems designed to supply emergency lighting luminaires shall prevent any accidental disconnection (in accordance with 22.11.1 of IEC 60598-2-22:2014 and IEC 60598-2-22:2014/AMD1:2017).

Track adaptors and luminaire suspension devices to be used with emergency luminaires which are intended to be used for a display lighting application, shall include a system for locking the luminaire in a fixed aiming direction and fixed position on the track. The locking system shall ensure that the luminaire can be locked in its final aiming position and location and that it cannot be adjusted or moved without the aid of a tool, and the emergency lighting function of the luminaire cannot be switched off without the aid of a tool.

NOTE A display lighting application is normally within arm reach.

8.13 A track system used for centrally supplied emergency lighting shall provide double or reinforced insulation between the conductors of the emergency lighting circuit and the normal mains circuit.

The working voltage to be used to design the insulation between different circuits shall be the higher rated voltage of the different circuits.

In a track system for centrally supplied emergency lighting, terminals identification shall always be consistent within the entire system. ^(A2)

9 Creepage distances and clearances

The provision of section eleven of IEC 60598-1 apply but with the modifications in ^(A2) 9.1 to 9.3 ^(A2).

9.1 For rewirable connectors and adaptors the measurements are made with and without conductors of the largest cross-sectional area connected to the terminals.

For non-rewirable connectors and adaptors the measurements are made on the sample as delivered.

Components are checked when wired and installed as in normal use and electrical connection is made.

9.2 For a mixed supply system the creepage distances and clearances between conductors of mains voltage sector opening and SELV sector opening shall comply with Table 11.1 of IEC 60598-1 regarding class II constructions for the maximum working voltage used.

^(A2) **9.3** For Class I track systems it shall be ensured, by design, that any access to live parts closer than the values given in Table 11.1A of IEC 60598-1 for reinforced insulation is prevented.

Compliance is checked by measuring the distance between live parts and a metal foil pressed into any openings of the fully assembled track system with the probe 1 of IEC 61032:1997 (50 mm sphere) in every possible direction. ^(A2)

10 Terminals

The provisions of sections fourteen and fifteen of IEC 60598-1 apply except that the use of terminals mounted on floating contacts shall not be precluded provided their movement does not impair correct operation.

Compliance is checked by inspection.

11 External and internal wiring

The provisions of section five of IEC 60598-1 apply but with the following modification:

^(A2) If a supply cable is provided, the cross-sectional area of the conductors shall be compatible with the rated current of the track system. ^(A2)

Compliance is checked by inspection.

12 Thermal endurance and operating temperatures

Luminaire track systems shall have adequate thermal endurance and shall not attain excessive temperatures in conditions of normal use.

Compliance shall be checked by the tests in 12.1 to 12.3

12.1 Current-carrying parts of the track as installed shall be so designed as to prevent excessive temperatures due to the passage of current.

Compliance is checked by the following test:

A typical luminaire in accordance with 0.4.2 of IEC 60598-1 and chosen to represent the most onerous situation designed to be used with the track shall be mounted on it in the most unfavourable position of normal use and electrically connected to it. The track shall be further electrically loaded so as to pass a total current, including the current to the luminaire, equal to its rated current, until a condition of thermal stability is reached or for 1 h whichever is the longer.

Typical luminaires are mounted on the class I and class III sector openings.

The test shall be made at a temperature equal to the t_a of the track or at 25 °C if t_a is not marked.

The highest temperature of any part of the track shall be determined and the value obtained shall not exceed the manufacturer's stated maximum track temperature under normal operating conditions.

12.2 Components of a track system shall not attain excessive temperatures in normal use. Temperatures of components excluding the track shall comply with the requirements of section twelve of IEC 60598-1.

12.3 The thermal endurance of the track shall be checked by the following tests:

12.3.1 *A 1,2 m length of track is mounted as in normal use, according to the manufacturer's installation instructions, in a heating cabinet which is maintained for 168 h at a temperature which is 10 °C in excess of the manufacturer's stated maximum track temperature under normal operating condition, with a minimum of 80 °C or the t_a of the track +55 °C, whichever is the greater.*

After the test, the track shall show no visible signs of deterioration and any shrinkage of the insulating liner shall be such that the track still complies with the relevant requirements of clause 8 and 13.1 (steel probe, test finger, test chain, etc.) and the track shall comply with the requirements of 15.1 (insulation resistance test).

12.3.2 *For Class III track/sector openings a typical luminaire in accordance with 0.4.2 of IEC 60598-1 and chosen to represent the most onerous situation designed to be used with the track shall be mounted on it in the most unfavourable position of normal use and electrically connected to it. For the supply cable the most unfavourable position shall be taken with the cable bent sharply at the inlet opening as far as possible as the design permits. The track shall be further electrically loaded so as to pass a total current, including the current to the luminaire, equal to its rated current.*

The track system is operated at its rated t_a plus 20 °C and the test is made in accordance with 12.3 of IEC 60598-1.

Following the test, in addition to complying with 12.3 of IEC 60598-1, the track supply connector and couplers (if any) shall be loaded with 1,5 times the rated current of the track system. The voltage drop across each contact of the connectors and/or couplers shall not exceed 22,5 mV.

13 Protection against electric shock

A2 The provisions of section eight of IEC 60598-1 apply together with the requirements of 13.1 to 13.3. **A2**

13.1 Additionally, for track, compliance with 8.2.5 of IEC 60598-1 shall be checked by the application of the test probe D, according to Table 9.1 of IEC 60598-1.

13.2 The test shall not be carried out on:

- SELV circuits;
- circuits with at least basic insulation to LV. **A2**

Compliance is checked by carrying out the test with the probe applied in every possible direction. During the test the probe shall not touch live parts.

13.2 Adaptors shall be so designed that live parts are not touchable when the adaptor is in partial or complete engagement and is wired as in normal use.

Compliance is checked by inspection and by a test with the standard test finger. This finger is applied in every possible position, if necessary with a force of 10 N, an electrical indicator being used to show contact with live parts. Movable parts are placed by hand in the most unfavourable position.

13.3 It shall not be possible to remove, by hand, track or component parts preventing access to live parts. The means for fixing these parts shall be insulated from live parts. For adaptors, the requirements of this subclause apply only when the adaptor is fitted to the track. If these parts are metallic, they shall not touch any of the live parts.

Compliance is checked by inspection and manual test.

14 Resistance to humidity

The provisions of 9.3 of section nine of IEC 60598-1 apply.

15 Insulation resistance and electric strength

The provisions of section ten of IEC 60598-1 apply but with the modifications of 15.1 to 15.3.

15.1 The insulation resistance measured according to 10.2.1 of IEC 60598-1 shall be not less than 100 MΩ divided by the length in metres of track under test, between live parts of different polarity and between live parts and the body and/or earthing conductors. (This replaces the values given in Table 10.1 of IEC 60598-1.)

15.2 **A2** Track systems that comply with the requirements of this document, are deemed to comply with the provisions in 10.3 of IEC 60598-1 without testing. **A2**

15.3 For a mixed supply system the electric strength test between the mains voltage sector and the SELV sector shall be carried out using a 3 750 V test voltage.

16 Provision for earthing

The provisions of section seven of IEC 60598-1 apply but with the modification in 16.1 to 16.4.

This section applies to mains voltage class track systems and the mains voltage sector opening of a mixed supply system only.

16.1 The test in 7.2.3 of IEC 60598-1 shall be made on the test sample, as specified in 5.3.

Compliance is checked by the following test:

The test shall be carried out at a current of at least 25 A, and the calculated resistance shall not exceed 0,1 Ω . Adaptors and luminaire supply connectors with current ratings of less than 6 A shall comply with the test in 7.2.3 of IEC 60598-1.

The voltage drop from which the resistance is calculated shall be measured between any 2 points of the installed system with 3 lengths of track, and in particular between the track supply connector and an adaptor placed farthest away from the supply, i.e. over at least 6 contact points of the earthing circuit.

16.2 All parts of the earthing system shall be such that there is no risk of corrosion, including oxidation, resulting from contact between the parts and the track earthing conductor, or any other metal that is in contact with it.

If the body of the track or enclosure is of aluminium or aluminium alloy, precautions shall be taken to avoid the risk of corrosion resulting from contact between copper and aluminium or its alloys.

16.3 For class I luminaires with detachable parts provided with connectors or similar connection devices, the earth connection shall be made before the current-carrying contacts are made and the current-carrying contacts shall separate before the earth connection is broken.

16.4 An earth continuity conductor shall extend the whole length of the track/sector. This conductor may be part of the mechanical construction of the track, provided that it is not possible to remove this part of the mechanical construction without at the same time interrupting the current supply.

☐ Text deleted ☐

Compliance with the requirements in 16.2 to 16.4 are checked by inspection and by test.

17 Resistance to heat, fire and tracking

The provisions of section thirteen of IEC 60598-1, excluding those in 13.4 apply except that the test in 13.2.1 of IEC 60598-1 for resistance to heat shall be as in 17.1 and 17.2.

17.1 Test for track

The test conditions and requirements shall be as in 13.2.1 of IEC 60598-1 except that 2 samples of the track insulation material about 100 mm long and of rectangular cross-section 10 mm wide and of a thickness equal to the minimum linear thickness used for insulation purposes within the particular track configuration shall be taken from different track lengths of the test sample. Where the track insulation is of insufficient size for the samples to be prepared and the test area to be unmachined, then test samples manufactured in the same

material and by the same process shall be used. These samples shall be preconditioned as required in 12.3.

Both the track insulation samples shall comply with the test requirements, after the apparatus, with the sample in position, has been kept for 1 h in a heating cabinet at a temperature 10 °C in excess of the manufacturer's stated maximum track temperature under normal operating conditions, with a minimum of 80 °C or the temperature of the track +55 °C whichever is the greater.

17.2 Test for track components

The test conditions and requirements shall be as in 13.2.1 of IEC 60598-1 except that

- a) parts of insulating material retaining live parts or current-carrying parts in position shall be tested at temperature equal to the t_a of the track +25 °C with a minimum temperature of 125 °C;
- b) parts of insulating material providing protection against electric shock shall be tested at a temperature equal to the t_a of the track +25 °C with a minimum temperature of 80 °C.

NOTE Two samples of the actual product should be used for the test of 17.2. Where the product is of insufficient size, test samples manufactured in the same material and fashion should be provided by the manufacturer, on which to conduct the test. These samples should have been subjected to all previous tests as required by the standard.

Preparing a small complex-shaped product to give sufficient flat surface area by any normal method is likely to involve damaging the surface of that product. As such, its normal properties will be affected and this is not the intention of the test.

18 Terminals and connections for external wiring

For Class III track the provisions of **A2** 15.6.3.1 and 15.6.3.2 **A2** of IEC 60598-1 apply with the following modifications.

A2 15.6.3.1.1 **A2**

Replace the first paragraph by the following:

For all types of terminals (or connections), the test according to 15.9.1.3 is made with 10 solid copper non-insulated conductors or with conductors which are delivered by the manufacturer with the track system.

A2 15.6.3.1.3 **A2**

Add at the end of the first paragraph

The voltage drop is measured across each terminal and across each connection to the track conductor.

A2 15.6.3.2.3 **A2**

Replace the text by the following:

Terminals (or connections) with rated current up to and including 6 A are then subjected to the ageing test, without current of 25 cycles duration, each cycle comprising 30 min at the upper cycle temperature of $T \pm 5$ °C or 80 °C ± 5 °C whichever is the higher, followed by a cooling- down period to a temperature between 15 °C and 30 °C.

Terminals (or connections) with rated current exceeding 6 A are subjected to an ageing test of 100 such cycles.

IEC 60570:2003+A2:2019
© IEC 2019

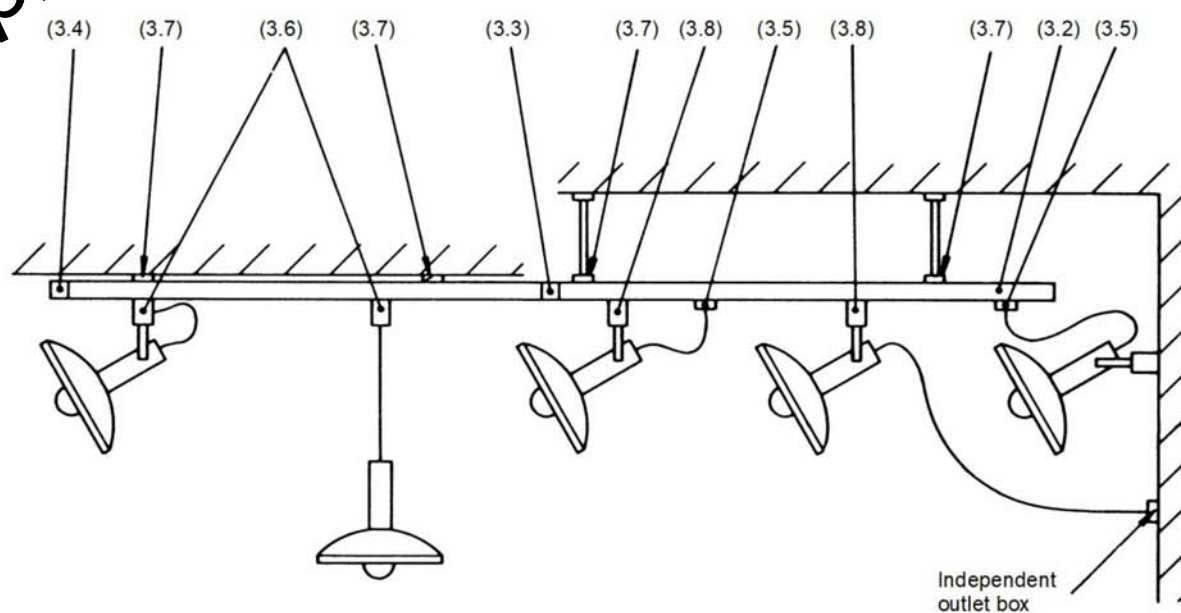
For the supply cable the most unfavourable position shall be taken with the cable bent sharply at the inlet opening as far as possible as the design permits.

NOTE The temperature T is the marked maximum rated temperature for T marked components, such as lamp-holders.

15.6.3.2.4

Replace the text of the first line of the first paragraph by the following:

The voltage drop is measured across each terminal and across each connection to the track conductor:



IEC 252/03

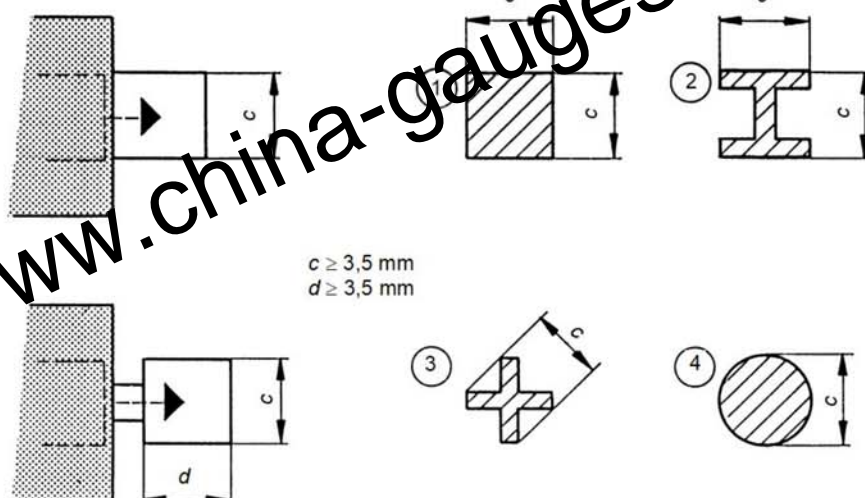
- 3.2 Track.
- 3.3 Coupler.
- 3.4 Track supply connector – supply into track.
- 3.5 Luminaire supply connector – supply from track only.
- 3.6 Adaptor – Mechanical and electrical connection to track.
- 3.7 Track suspension device (to ceiling or to suspension tubes).
- 3.8 Luminaire suspension device – mechanical connection only to track.

NOTE This drawing is for guidance only; it does not prescribe design features.

Figure 1 – Luminaire track systems (definitions)

Projection

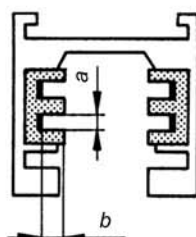
Cross-section



IEC 253/03

Figure 2 – Measurement positions for typical class III adaptor contacts

A1

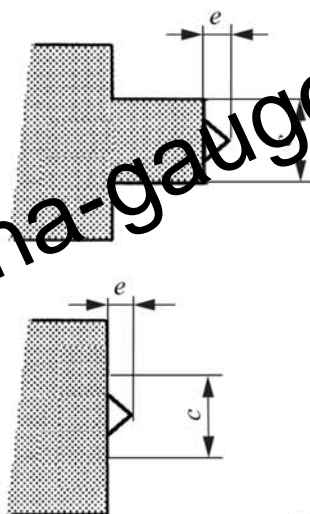

 $a \leq 3,0 \text{ mm}$
 $b \geq 1,7 \text{ mm}$

IEC

A1

A2 Figure 3 – Measurement positions for typical class I tracks (not to scale) A2

A₂



IEC

$e \leq 1 \text{ mm}$

$c \geq 3,5 \text{ mm}$

Figure 4 – Measurement positions for typical class III adaptor contacts with protruding contacts A₂

A₂ Annex A
(informative)**Test to be carried out on luminaires supplied
with track systems providing control signals**

The possibility to establish an unsafe connection between supply conductors and control signals shall be prevented by the track system construction or by the luminaire.

Unsafe connection may be prevented by a special mechanical key in the track system design or, in the case of a track system using control signals via supply conductor, by having an adequate protective measure in the luminaire such that any unintentional contact from the LV supply to the control circuit will not cause a safety failure in the luminaire.


Compliance is checked by the following tests:

In the case of a track system using a mechanical key system to prevent an unsafe connection, no additional requirements apply to the luminaire.

In all other cases the following requirements shall be applied to the luminaire.

The luminaire shall not become unsafe when the highest possible supply voltage is applied between control signals contacts until steady state condition is reached.

During and after the test there shall be no emission of flames or molten material from the luminaire or production of flammable gases. The protection against contact to live parts shall not be impaired. Insulation shall be adequate to exposed parts of the luminaire and checked by the electric strength and insulation resistance tests as required in section ten of IEC 60598-1.

NOTE This requirement is considered sufficient as, in the case of basic insulation failure (wrong connection between adaptor and track system), the supplementary insulation based on working voltage equal to the rated luminaire supply voltage provided is considered sufficient. 

British Standards Institution (BSI)

BSI is the national body responsible for preparing British Standards and other standards-related publications, information and services.

BSI is incorporated by Royal Charter. British Standards and other standardization products are published by BSI Standards Limited.

About us

We bring together business, industry, government, consumers, innovators and others to shape their combined experience and expertise into standards-based solutions.

The knowledge embodied in our standards has been carefully assembled in a dependable format and refined through our open consultation process. Organizations of all sizes and across all sectors choose standards to help them achieve their goals.

Information on standards

We can provide you with the knowledge that your organization needs to succeed. Find out more about British Standards by visiting our website at bsigroup.com/standards or contacting our Customer Services team or Knowledge Centre.

Buying standards

You can buy and download PDF versions of BSI publications, including British and adopted European and international standards, through our website at bsigroup.com/shop, where hard copies can also be purchased.

If you need international and foreign standards from other Standards Development Organizations, hard copies can be ordered from our Customer Services team.

Copyright in BSI publications

All the content in BSI publications, including British Standards, is the property of and copyrighted by BSI or some person or entity that owns copyright in the information used (such as the international standardization bodies) and has formally licensed such information to BSI for commercial publication and use.

Save for the provisions below, you may not transfer, share or disseminate any portion of the standard to any other person. You may not adapt, distribute, commercially exploit or publicly display the standard or any portion thereof in any manner whatsoever without BSI's prior written consent.

Storing and using standards

Standards purchased in soft copy format:

- A British Standard purchased in soft copy format is licensed to a sole named user for personal or internal company use only.
- The standard may be stored on more than one device provided that it is accessible by the sole named user only and that only one copy is accessed at any one time.
- A single paper copy may be printed for personal or internal company use only.

Standards purchased in hard copy format:

- A British Standard purchased in hard copy format is for personal or internal company use only.
- It may not be further reproduced – in any format – to create an additional copy. This includes scanning of the document.

If you need more than one copy of the document, or if you wish to share the document on an internal network, you can save money by choosing a subscription product (see 'Subscriptions').

Reproducing extracts

For permission to reproduce content from BSI publications contact the BSI Copyright and Licensing team.

Subscriptions

Our range of subscription services are designed to make using standards easier for you. For further information on our subscription products go to bsigroup.com/subscriptions.

With **British Standards Online (BSOL)** you'll have instant access to over 55,000 British and adopted European and international standards from your desktop. It's available 24/7 and is refreshed daily so you'll always be up to date.

You can keep in touch with standards developments and receive substantial discounts on the purchase price of standards, both in single copy and subscription format, by becoming a **BSI Subscribing Member**.

PLUS is an updating service exclusive to BSI Subscribing Members. You will automatically receive the latest hard copy of your standards when they're revised or replaced.

To find out more about becoming a BSI Subscribing Member and the benefits of membership, please visit bsigroup.com/shop.

With a **Multi-User Network Licence (MUNL)** you are able to host standards publications on your intranet. Licences can cover as few or as many users as you wish. With updates supplied as soon as they're available, you can be sure your documentation is current. For further information, email cservices@bsigroup.com.

Revisions

Our British Standards and other publications are updated by amendment or revision.

We continually improve the quality of our products and services to benefit your business. If you find an inaccuracy or ambiguity within a British Standard or other BSI publication please inform the Knowledge Centre.

Useful Contacts

Customer Services

Tel: +44 345 086 9001

Email: cservices@bsigroup.com

Subscriptions

Tel: +44 345 086 9001

Email: subscriptions@bsigroup.com

Knowledge Centre

Tel: +44 20 8996 7004

Email: knowledgecentre@bsigroup.com

Copyright & Licensing

Tel: +44 20 8996 7070

Email: copyright@bsigroup.com

BSI Group Headquarters

389 Chiswick High Road London W4 4AL UK