



**NSAI**  
Standards

Irish Standard  
I.S. EN 61534-1:2011&A1:2014

## Powertrack systems -- Part 1: General requirements

**I.S. EN 61534-1:2011&A1:2014**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

EN 61534-1:2011/A1:2014

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*This document is based on:*

EN 61534-1:2011

*Published:*

2011-07-15

*This document was published under the authority of the NSAI and comes into effect on:*  
2014-09-18

*ICS number:*

29.060.10  
29.120.10

*NOTE: If blank see CEN/CENELEC cover page*

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 61534-1:2011/A1**

August 2014

ICS 29.060.10; 29.120.10

English Version

**Powertrack systems - Part 1: General requirements  
(IEC 61534-1:2011/A1:2014)**

Systèmes de conducteurs préfabriqués - Partie 1:  
Exigences générales  
(CEI 61534-1:2011/A1:2014)

Stromschienensysteme - Teil 1: Allgemeine Anforderungen  
(IEC 61534-1:2011/A1:2014)

This amendment A1 modifies the European Standard EN 61534-1:2011; it was approved by CENELEC on 2014-08-04. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This amendment exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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

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

## Foreword

The text of document 23A/700A/FDIS, future IEC 61534-1:2011/A1, has been prepared by subcommittee 23A: Cable management systems, of IEC technical committee 23 "Electrical accessories" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61534-1:2011/A1:2014.

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) 2015-05-04
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2017-08-04

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC).

## Endorsement notice

The text of the International Standard IEC 61534-1:2011/A1:2014 was approved by CENELEC as a European Standard without any modification.



**IEC 61534-1**

Edition 2.0 2014-06

# **INTERNATIONAL STANDARD**

## **NORME INTERNATIONALE**

### **AMENDMENT 1**

### **AMENDEMENT 1**

**Powertrack systems –  
Part 1: General requirements**

**Systèmes de conducteurs préfabriqués –  
Partie 1: Exigences générales**





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**IEC 61534-1**

Edition 2.0 2014-06

# **INTERNATIONAL STANDARD**

## **NORME INTERNATIONALE**

### **AMENDMENT 1**

### **AMENDEMENT 1**

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**Powertrack systems –  
Part 1: General requirements**

**Systèmes de conducteurs préfabriqués –  
Partie 1: Exigences générales**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

PRICE CODE  
CODE PRIX

**D**

ICS 29.060.10; 29.120.10

ISBN 978-2-8322-1643-9

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## FOREWORD

This amendment has been prepared by subcommittee 23A: Cable management systems, of IEC technical committee 23: Electrical accessories.

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

FDIS	Report on voting
23A/700A/FDIS	23A/706/RVD

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

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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

## 1 Scope

**1.1 Replace, in the existing paragraph, "50 Hz/60 Hz" by "50 Hz or 60 Hz".**

## 3 Terms and definitions

*Add the following two new definitions:*

### **3.54**

#### **dry-treatment of floor**

process for cleaning and/or care by which the floor is treated without liquids or with only a small quantity of liquid such that no pools or soaking of the floor covering occurs

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

### **3.55**

#### **wet-treatment of floor**

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

EXAMPLE Wet scrubbing, manual or mechanical wiping.

## 8 Marking and documentation

**8.8** *In the existing second paragraph, add "cotton" before "cloth" and "or 95+% n-hexane" after "petroleum spirit".*

*Add, after the existing notes, the following new Note 4:*

NOTE 4 95+% n-hexane (Chemical Abstracts Service Registry Number, CAS RN, 110-54-3) is available from a variety of chemical suppliers as a high pressure liquid chromatography (HPLC) solvent.

### **Table 1 – Pull and torque values for tests on cord anchorages**

*Replace, in the existing first column heading, the unit "Mm<sup>2</sup>" by "mm<sup>2</sup>".*

#### **11.1 Access to live parts**

**11.1.2** *Replace, in the existing second paragraph, "11.3.1" by "11.3.3".*

#### **11.3 Effectiveness of protective circuit continuity**

**11.3.1** *Replace, in the existing second paragraph, "frequency of 50 Hz to 60 Hz" by "nominal frequency of 50 Hz or 60 Hz".*

**11.3.2** *Replace, in the existing first paragraph, "frequency of 50 Hz to 60 Hz" by "nominal frequency of 50 Hz or 60 Hz".*

*Add the following new subclause 11.3.3:*

**11.3.3** The effectiveness of the connection of the exposed conductive parts to the protective circuit shall be measured as follows:

A current of  $(25 \pm 1)$  A a.c. having a nominal frequency of 50 Hz or 60 Hz supplied by a source with a no-load voltage not exceeding 12 V shall be passed between the exposed conductive part and the point on the protective circuit which is nearest to the exposed conductive part.

Measurement of the voltage drop shall be made within 120 s after the initiation of the current flow.

The impedance calculated from the measurement of the voltage drop between the two points stated shall not exceed 50 mΩ.

## **13 Screws, current carrying parts and connections**

**13.5** *Replace the existing first paragraph by the following new paragraph:*

**13.5** Parts designed for carrying current including busbars, terminals and earthing terminals shall be of a material having, under the conditions occurring in the PT system, adequate mechanical strength and resistance to corrosion.

*Add, at the start of the existing list, the following two new dashed items:*

- aluminium;
- brass;

## **21.1 Resistance to corrosion**

### **21.1.3 Replace the existing second paragraph by the following new paragraph:**

After degreasing the sample is submitted to a salt mist treatment according to IEC 60068-2-52 except for Clauses 7 and 10 which are not applicable. The test is carried out using severity (2).

## **Annex H**

*Delete Annex H.*

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## AVANT-PROPOS

Le présent amendement a été établi par le sous-comité 23A: Systèmes de câblage, du comité d'études 23 de l'IEC: Petit appareillage.

Le texte de cet amendement est issu des documents suivants:

FDIS	Rapport de vote
23A/700A/FDIS	23A/706/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à l'approbation de cet amendement.

Le comité a décidé que le contenu de cet amendement et de la publication de base ne sera pas modifié avant la date de stabilité indiquée sur le site web de l'IEC sous "http://webstore.iec.ch" dans les données relatives à la publication recherchée. A cette date, la publication sera

- reconduite,
  - supprimée,
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  - amendée.
- 

## 1 Domaine d'application

**1.1 Remplacer, dans l'alinéa existant, "50 Hz/60 Hz" par "50 Hz ou 60 Hz".**

## 3 Termes et définitions

*Ajouter les deux nouvelles définitions suivantes:*

### **3.54**

#### **traitement à sec de sol**

procédé de nettoyage et/ou d'entretien au cours duquel le sol est traité sans liquide ou en utilisant seulement une petite quantité de liquide sans formation de flaques et sans que le revêtement de sol soit trempé

**EXEMPLE** Nettoyage au balai ou au balai mécanique, nettoyage à l'aspirateur, brossage, nettoyage avec une poudre de nettoyage à sec, traitement avec un shampoing sec, shampouinage des tapis en utilisant un liquide, traitement avec une liège de nettoyage (agent de nettoyage chimique liquide sur une matière solide utilisée comme support, par exemple sciure de bois humidifiée, chiffon humide, etc.).

### **3.55**

#### **traitement humide de sol**

procédé de nettoyage et/ou d'entretien au cours duquel le sol est traité avec des agents liquides de telle sorte qu'on ne peut exclure la formation de flaques ou que le revêtement de sol soit trempé pendant une courte période

**EXEMPLE** Nettoyage humide, essuyage manuel ou mécanique.

## 8 Marquage et documentation

### 8.8 *Dans le deuxième alinéa existant,*

*Ajouter "en coton" après "morceau de tissu". Ajouter "ou n-hexane 95+%" après "essence".*

*Ajouter, après les notes existantes, la nouvelle Note 4 suivante:*

**NOTE 4** Le n-hexane 95+% (Référence CAS RN "Chemical Abstracts Service Registry Number", 110-54-3) est disponible auprès de différents fournisseurs de produits chimiques comme solvant obtenu par chromatographie liquide à haute pression (HPLC).

## Tableau 1 – Valeurs des forces de traction et couples de torsion pour les essais sur les ancrages de câbles

*La modification de l'unité de l'entête de la première colonne de "Mm<sup>2</sup>" par "mm<sup>2</sup>" ne concerne que l'anglais.*

## 11 Accès aux parties actives

### 11.1.2 *Remplacer, dans le deuxième alinéa existant: "11.3.1" par "11.3.3".*

## 11.3 Efficacité de la continuité du circuit de protection

### 11.3.1 *Remplacer, dans le deuxième alinéa existant, "fréquence comprise entre 50 Hz et 60 Hz" par "fréquence nominale de 50 Hz ou 60 Hz".*

### 11.3.2 *Remplacer, dans le premier alinéa existant, "fréquence comprise entre 50 Hz à 60 Hz" par "fréquence nominale de 50 Hz ou 60 Hz".*

*Ajouter le nouveau paragraphe 11.3.3 suivant:*

**11.3.3** L'efficacité de la connexion des parties conductrices accessibles au circuit de protection doit être mesurée comme suit:

On doit faire passer un courant alternatif d'intensité égale à  $(25 \pm 1)$  A à une fréquence nominale de 50 Hz ou 60 Hz, fourni par une source dont la tension à vide ne dépasse pas 12 V, entre la partie conductrice accessible et, sur le circuit de protection, le point qui est le plus proche de la partie conductrice accessible.

La mesure de la chute de tension doit être effectuée moins de 120 s après que le courant électrique a commencé à circuler.

L'impédance calculée à partir de la mesure de la chute de tension entre les deux points indiqués ne doit pas dépasser 50 mΩ.

## 13 Vis, pièces transportant le courant et connexions

### 13.5 *Remplacer le premier alinéa existant par le nouvel alinéa suivant:*

**13.5** Les pièces destinées à transporter le courant, y compris les barres conductrices, les bornes et les bornes de mise à la terre doivent être réalisées dans un matériau ayant, dans les conditions apparaissant dans le système de conducteurs préfabriqués, la résistance mécanique et la résistance à la corrosion adéquates.

*Ajouter, au début de la liste existante, les deux nouveaux tirets suivants:*

- l'aluminium;
- le laiton;

## **21.1 Résistance à la corrosion**

**21.1.3 Remplacer le deuxième alinéa existant par le nouvel alinéa suivant:**

Après dégraissage, l'échantillon est soumis à un traitement au brouillard salin conformément à l'IEC 60068-2-52, à l'exception des Articles 7 et 10 qui ne sont pas applicables. L'essai est réalisé en utilisant la sévérité (2).

## **Annexe H**

*Supprimer l'Annexe H.*

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 61534-1**

July 2011

ICS 29.060.10; 29.120.10

Supersedes EN 61534-1:2003

English version

**Powertrack systems -  
Part 1: General requirements  
(IEC 61534-1:2011)**

Systèmes de conducteurs préfabriqués -  
Partie 1: Exigences générales  
(CEI 61534-1:2011)

Stromschienensysteme -  
Teil 1: Allgemeine Anforderungen  
(IEC 61534-1:2011)

This European Standard was approved by CENELEC on 2011-06-22. 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, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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Comité Européen de Normalisation Electrotechnique  
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**Management Centre: Avenue Marnix 17, B - 1000 Brussels**

## Foreword

The text of document 23A/630/FDIS, future edition 2 of IEC 61534-1, prepared by SC 23A, Cable management systems, of IEC TC 23, Electrical accessories, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61534-1 on 2011-06-22.

This European Standard supersedes EN 61534-1:2003.

The main changes from EN 61534-1:2003 are as follows:

- updated normative references (Clause 2);
- changes to the number of samples to be tested (Subclause 5.3);
- inclusion of a short circuit test (New Clause 18);
- changes to external influences (Clause 21).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

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) 2012-03-22
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2014-06-22

Annex ZA has been added by CENELEC.

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## Endorsement notice

The text of the International Standard IEC 61534-1:2011 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

- |                     |  |
|---------------------|--|
| IEC 60364-4-44:2007 | NOTE Harmonized as HD 60364-4-444:2010 (modified). |
| IEC 60439-2:2000    | NOTE Harmonized as EN 60439-2:2000 (not modified). |
| IEC 60570:2003      | NOTE Harmonized as EN 60570:2003 (modified).       |
| IEC 60664-1:2007    | NOTE Harmonized as EN 60664-1:2007 (not modified). |
-

## **Annex ZA** (normative)

### **Normative references to international publications with their corresponding European publications**

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60038 (mod)	2009	IEC standard voltages	EN 60038 <sup>1</sup>	2011
IEC 60060-1	2010	High-voltage test techniques - Part 1: General definitions and test requirements	EN 60060-1	2010
IEC 60068-2-52	-	Environmental testing - Part 2: Tests - Test Kb: Salt mist, cyclic (sodium chloride solution)	EN 60068-2-52	-
IEC 60068-2-75	-	Environmental testing - Part 2-75: Tests - Test Eh: Hammer tests	EN 60068-2-75	-
IEC 60112	2003	Method for the determination of the proof and the comparative tracking indices of solid insulating materials	EN 60112	2003
IEC 60127-1	2006	Miniature fuses - Part 1: Definitions for miniature fuses and general requirements for miniature fuse-links	EN 60127-1	2006
IEC 60269-1	2006	Low-voltage fuses - Part 1: General requirements	EN 60269-1	2007
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May	1991 1993
IEC 60695-2-11	2000	Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products	EN 60695-2-11	2001
IEC 60695-10-2	2003	Fire hazard testing - Part 10-2: Abnormal heat - Ball pressure test	EN 60695-10-2	2003
IEC 60695-11-2	2003	Fire hazard testing - Part 11-2: Test flames - 1 kW nominal pre- mixed flame - Apparatus, confirmatory test arrangement and guidance	EN 60695-11-2	2003
IEC 60884-1 + A1	2002 2006	Plugs and socket-outlets for household and similar purposes - Part 1: General requirements	-	-
IEC 60998-1 (mod)	2002	Connecting devices for low-voltage circuits for household and similar purposes - Part 1: General requirements	EN 60998-1	2004

<sup>1</sup> At draft stage

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60998-2-3 (mod)	2002	Connecting devices for low-voltage circuits for EN 60998-2-3 household and similar purposes - Part 2-3: Particular requirements for connecting devices as separate entities with insulation-piercing clamping units		2004
IEC 60999-1	1999	Connecting devices - Electrical copper conductors - Safety requirements for screw- type and screwless-type clamping units - Part 1: General requirements and particular requirements for clamping units for conductors from 0,2 mm <sup>2</sup> up to 35 mm <sup>2</sup> (included)	EN 60999-1	2000
IEC 60999-2	2003	Connecting devices - Electrical copper conductors - Safety requirements for screw- type and screwless-type clamping units - Part 2: Particular requirements for clamping units for conductors above 35 mm <sup>2</sup> up to 300 mm <sup>2</sup> (included)	EN 60999-2	2003
IEC 61032	1997	Protection of persons and equipment by enclosures - Probes for verification	EN 61032	1998
IEC 61210 (mod)	2010	Connecting devices - Flat quick-connect terminations for electrical copper conductors - Safety requirements	EN 61210	2010
IEC 60417	Data- base	Graphical symbols for use on equipment	-	-
ISO 1456	2009	Metallic and other inorganic coatings - Electrodeposited coatings of nickel, nickel plus chromium, copper plus nickel and of copper plus nickel plus chromium	EN ISO 1456	2009
ISO 2081	2008	Metallic and other inorganic coatings - Electroplated coatings of zinc with supplementary treatments on iron or steel	EN ISO 2081	2008
ISO 2093	1986	Electroplated coatings of tin - Specification and test methods	-	-



**IEC 61534-1**

Edition 2.0 2011-05

# **INTERNATIONAL STANDARD**

## **NORME INTERNATIONALE**

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**Powertrack systems –  
Part 1: General requirements**

**Systèmes de conducteurs préfabriqués –  
Partie 1: Exigences générales**





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**Powertrack systems –  
Part 1: General requirements**

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INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

PRICE CODE  
CODE PRIX **XB**

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ICS 29.060.10; 29.120.10

ISBN 978-2-88912-504-3

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### POWERTRACK SYSTEMS –

#### Part 1: General requirements

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International Standard IEC 61534-1 has been prepared by subcommittee 23A: Cable management systems, of IEC technical committee 23: Electrical accessories.

This second edition cancels and replaces the first edition published in 2003 and constitutes a technical revision. The main changes from the previous edition are as follows:

- updated normative references (Clause 2);
- changes to the number of samples to be tested (Subclause 5.3);
- inclusion of a short circuit test (New Clause 18);
- changes to external influences (Clause 21).

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

FDIS	Report on voting
23A/630/FDIS	23A/631/RVD

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

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

A list of all the parts in the IEC 61534 series, under the general title *Powertrack systems*, can be found on the IEC website.

The following difference exists in the countries indicated below:

- Table 4, first column, first line: the 10 A rated terminal should be capable of clamping 1 mm<sup>2</sup> as a minimum (UK);
- Australia has specific wiring rules covering socket-outlets to be switched. In Australia, AS/NZS 3000 contains requirements for switching devices to be used in Australian and New Zealand electrical installations;
- 9.5: in Australia, fuses and fuse-links are not to be used.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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

The contents of the corrigendum of June 2013 apply to the French version only.

## INTRODUCTION

Particular requirements for specific types of powertrack systems will be specified in the relevant parts 2 of IEC 61534.

For a specific type of powertrack system the requirements of Part 1 of the standard are to be considered, together with the particular requirements of the appropriate Part 2, which will supplement or modify some of the corresponding clauses in Part 1 to provide the complete requirements for that type of system.

Part 1 shall apply unless supplemented or modified by an appropriate Part 2.

## POWERTRACK SYSTEMS –

### Part 1: General requirements

#### 1 Scope

**1.1** This part of IEC 61534 specifies general requirements and tests for powertrack (PT) systems with a rated voltage not exceeding 277 V a.c. single phase, or 480 V a.c. two or three phase 50 Hz/60 Hz with a rated current not exceeding 63 A. These systems are used for distributing electricity in household, commercial and industrial premises.

**1.2** Powertrack systems, according to this standard, are intended for use under the following conditions:

- an ambient temperature in the range –5 °C to + 40 °C, the average value over a 24 h period not exceeding 35 °C;
- a situation not subject to a source of heat likely to raise temperatures above the limits specified above;
- an altitude not exceeding 2000 m above sea level;
- an atmosphere not subject to excessive pollution by smoke, chemical fumes, prolonged periods of high humidity or other abnormal conditions.

In locations where special conditions prevail, as in ships, vehicles and the like and in hazardous locations, for instance, where explosions are liable to occur, special constructions may be necessary.

This standard does not apply to

- cable trunking systems and cable ducting systems covered by IEC 61084 [8] 1;
- busbar trunking systems covered by IEC 60439-2 [5];
- electrical supply track systems for luminaires covered by IEC 60570 [6].

#### 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 60038:2009, *IEC standard voltages*

IEC 60060-1:2010, *High-voltage test techniques – Part 1: General definitions and test requirements*

IEC 60068-2-52, *Environmental testing – Part 2-52: Tests - Test Kb: Salt mist, cyclic (sodium, chloride solution)*

IEC 60068-2-75, *Environmental testing – Part 2-75: Tests – Test Eh: Hammer tests*

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<sup>1</sup> Figures in square brackets refer to the bibliography.



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