

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**Powertrack systems –  
Part 22: Particular requirements for powertrack systems intended for onfloor or  
underfloor installation**

**Systèmes de conducteurs préfabriqués –  
Partie 22: Exigences particulières pour les systèmes de conducteurs  
préfabriqués destinés au montage sur le sol ou sous le sol**



## THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2021 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Central Office  
3, rue de Varembe  
CH-1211 Geneva 20  
Switzerland

Tel.: +41 22 919 02 11  
[info@iec.ch](mailto:info@iec.ch)  
[www.iec.ch](http://www.iec.ch)

### About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

### About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

#### IEC publications search - [webstore.iec.ch/advsearchform](http://webstore.iec.ch/advsearchform)

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee, ...). It also gives information on projects, replaced and withdrawn publications.

#### IEC Just Published - [webstore.iec.ch/justpublished](http://webstore.iec.ch/justpublished)

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

#### IEC Customer Service Centre - [webstore.iec.ch/csc](http://webstore.iec.ch/csc)

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: [sales@iec.ch](mailto:sales@iec.ch).

#### IEC online collection - [oc.iec.ch](http://oc.iec.ch)

Discover our powerful search engine and read freely all the publications previews. With a subscription you will always have access to up to date content tailored to your needs.

#### Electropedia - [www.electropedia.org](http://www.electropedia.org)

The world's leading online dictionary on electrotechnology, containing more than 22 000 terminological entries in English and French, with equivalent terms in 18 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

### A propos de l'IEC

La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

### A propos des publications IEC

Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

#### Recherche de publications IEC - [webstore.iec.ch/advsearchform](http://webstore.iec.ch/advsearchform)

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études, ...). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

#### IEC Just Published - [webstore.iec.ch/justpublished](http://webstore.iec.ch/justpublished)

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et une fois par mois par email.

#### Service Clients - [webstore.iec.ch/csc](http://webstore.iec.ch/csc)

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: [sales@iec.ch](mailto:sales@iec.ch).

#### IEC online collection - [oc.iec.ch](http://oc.iec.ch)

Découvrez notre puissant moteur de recherche et consultez gratuitement tous les aperçus des publications. Avec un abonnement, vous aurez toujours accès à un contenu à jour adapté à vos besoins.

#### Electropedia - [www.electropedia.org](http://www.electropedia.org)

Le premier dictionnaire d'électrotechnologie en ligne au monde, avec plus de 22 000 articles terminologiques en anglais et en français, ainsi que les termes équivalents dans 16 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.



IEC 61534-22

Edition 2.1 2021-07  
CONSOLIDATED VERSION

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**Powertrack systems –**

**Part 22: Particular requirements for powertrack systems intended for onfloor or underfloor installation**

**Systèmes de conducteurs préfabriqués –**

**Partie 22: Exigences particulières pour les systèmes de conducteurs préfabriqués destinés au montage sur le sol ou sous le sol**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

ICS 29.060.10; 29.120.20

ISBN 978-2-8322-1001-9

**Warning! Make sure that you obtained this publication from an authorized distributor.  
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**



# REDLINE VERSION

## VERSION REDLINE



**Powertrack systems –  
Part 22: Particular requirements for powertrack systems intended for onfloor or  
underfloor installation**

**Systèmes de conducteurs préfabriqués –  
Partie 22: Exigences particulières pour les systèmes de conducteurs  
préfabriqués destinés au montage sur le sol ou sous le sol**

## CONTENTS

FOREWORD .....	3
1 Scope .....	5
2 Normative references .....	5
3 Terms and definitions .....	5
4 General requirements .....	6
5 General notes on tests .....	6
6 Ratings .....	6
7 Classification .....	6
8 Marking and documentation .....	8
9 Construction .....	8
10 Clearances, creepage distances and solid insulation .....	9
11 Protection against electric shock .....	9
12 Terminals and terminations .....	9
13 Screws, current-carrying parts and connections .....	9
14 Mechanical strength .....	9
15 Insulation resistance test and dielectric strength test .....	18
16 Normal operation .....	18
17 Temperature rise .....	18
18 Short-circuit protection and short-circuit withstand strength .....	18
19 Resistance to heat .....	18
20 Fire hazard .....	18
21 External influences .....	19
22 Electromagnetic compatibility .....	19
Annex AA (informative) Illustrations of underfloor and onfloor installations .....	20
Annex BB (normative) Additional test requirements for PT systems already complying with IEC 61534-22: 2009 .....	22
Figure 101 – External load test .....	10
Figure 102 – Traffic load test for flushfloor service units applied to a small surface area .....	14
Figure 103 – Traffic load test for flushfloor service units applied to a large surface area .....	16
Figure 104 – Test arrangement for fixing apparatus mounting device according to 14.101.6.1 .....	17
Figure AA.1 – Illustrations of underfloor installations .....	20
Figure AA.2 – Example of installation onfloor .....	21

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

### POWERTRACK SYSTEMS –

#### **Part 22: Particular requirements for powertrack systems intended for onfloor or underfloor installation**

#### FOREWORD

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

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

**IEC 61534-22 edition 2.1 contains the second edition (2014-06) [documents 23A/702/FDIS and 23A/708/RVD] and its amendment 1 (2021-07) [documents 23A/927/CDV and 23A/940/RVC].**

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

International Standard IEC 61534-22 has been prepared by subcommittee 23A: Cable management systems, of IEC Technical Committee 23: Electrical accessories.

This second edition constitutes a technical revision.

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

- Clauses 18 to 22 have been adapted to IEC 61534-1:2011 and include short-circuit test requirements;
- addition of a new (500 N) classification for the resistance to traffic load applied to small surface areas on a flushfloor service unit;
- addition of a new classification for the non-automatic closing of the lid on flushfloor service units and appropriate tests;
- addition of tests for floor service units declared for use when a floor is wet-treated.

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

This standard is to be used in conjunction with IEC 61534-1:2011, *Powertrack systems – Part 1: General requirements*.

This Part 22 supplements or modifies the corresponding clauses of IEC 61534-1. Where a particular clause or subclause of IEC 61534-1:2011 is not mentioned in this Part 22, that clause or subclause applies as far as is reasonable. Where this Part 22 states "addition" or "replacement", the relevant text of IEC 61534-1:2011 is to be adapted accordingly.

Subclauses, tables and figures which are in addition to those in IEC 61534-1:2011 are numbered starting with 101.

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

The following differences exist in the countries indicated below:

Subclause 7.105.2: In the United Kingdom, this classification is not permitted.

The committee has decided that the contents of the base publication and its amendment 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.

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



## POWERTRACK SYSTEMS –

### Part 22: Particular requirements for powertrack systems intended for onfloor or underfloor installation

#### 1 Scope

Clause 1 of IEC 61534-1:2011 and IEC 61534-1:2011/AMD1:2014 is applicable except as follows:

##### 1.1 Addition:

This part of IEC 61534 specifies the particular requirements and tests for PT systems intended for mounting on, or under the floor level and floor service units which are mounted on the floor, under the floor or flush with the floor.

NOTE 1 Types and applications are shown in Figures AA.1a, AA.1b and AA.2

NOTE 2 Flushfloor PT systems, with the exception of flushfloor service units, are not covered by this standard.

#### 2 Normative references

Clause 2 of IEC 61534-1:2011 is applicable except as follows:

*Addition:*

IEC 61534-1:2011, *Powertrack systems – Part 1: General requirements*  
IEC 61534-1:2011/AMD1:2014  
IEC 61534-1:2011/AMD2:2020

#### 3 Terms and definitions

Clause 3 of IEC 61534-1:2011, ~~and~~ Clause 3 of IEC 61534-1:2011/AMD1:2014 and Clause 3 of IEC 61534-1:2011/AMD2:2020 ~~is~~ are applicable except as follows:

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

*Additional terms and definitions:*

##### 3.101 underfloor PT system

PT system whose components, except flushfloor service units, are intended for installation beneath the finished floor and in normal use are not exposed to traffic loads

Examples are shown in Figures AA.1a and AA.1b

##### 3.102 onfloor PT system

PT system whose components are mounted on the floor surface