



**NSAI**  
Standards

Irish Standard  
I.S. EN 50343:2014&A1:2017

# Railway applications - Rolling stock - Rules for installation of cabling

**I.S. EN 50343:2014&A1:2017**

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

EN 50343:2014/A1:2017

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## National Foreword

I.S. EN 50343:2014&A1:2017 is the adopted Irish version of the European Document EN 50343:2014, Railway applications - Rolling stock - Rules for installation of cabling

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EUROPEAN STANDARD

**EN 50343:2014/A1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2017

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ICS 45.060.01

English Version

## Railway applications - Rolling stock - Rules for installation of cabling

Applications ferroviaires - Matériel roulant - Règles  
d'installation du câblage

Bahnwendungen - Fahrzeuge - Regeln für die Installation  
von elektrischen Leitungen

This amendment A1 modifies the European Standard EN 50343:2014; it was approved by CENELEC on 2017-09-19. 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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Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

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

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EN 50343:2014/A1:2017

## European foreword

This document (EN 50343:2014/A1:2017) has been prepared by CLC/SC 9XB "Electrical, electronic and electromechanical material on board rolling stock, including associated software".

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- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2020-09-19

**In Annex E, E.3:**

**Delete the following text:**

"When increasing lifetime, in theory the same formula as under E.2 above may be used."

**Instead, insert the following text:**

"When increasing lifetime, the formula as under E.2 above shall not be used."

NOTE The reason is that „Montsinger’s rule“ is intended for reductions of lifetimes only, and therefore includes safety margins in such a direction that one can be reasonably sure that the really obtained lifetime will be longer than the calculated lifetime. When calculating increasing lifetimes these margins would be used in the wrong direction. It would lead to too small cable dimensions."

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EUROPEAN STANDARD

**EN 50343**

NORME EUROPÉENNE

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May 2014

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English Version

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European Committee for Electrotechnical Standardization  
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Europäisches Komitee für Elektrotechnische Normung

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

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## Foreword

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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 document supersedes EN 50343:2003.

EN 50343:2014 includes the following significant technical changes with respect to EN 50343:2003:

- references to other standards updated and harmonized;
- factor  $k_5$  concerning sizing of multi core cables introduced;
- factor  $k_2$  detailed, see Table 2;
- short time current detailed;
- mechanical aspects detailed;
- separation of cables due to safety reasons and EMC reasons harmonized;
- details added and changed concerning electrical and mechanical requirements for electrical terminations;
- cable lifetime considerations updated.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association.

## 1 Scope

This European Standard specifies requirements for the installation of cabling on railway vehicles and within electrical enclosures on railway vehicles, including magnetic levitation trains and trolley buses.

NOTE With respect to trolley buses, this European Standard applies to the whole electric traction system, including current collecting circuits, power converters and the respective control circuits. The installation of other circuits is covered by street vehicle standards for example those for combustion driven buses.

This European Standard covers cabling for making electrical connections between items of electrical equipment, including cables, busbars, terminals and plug/socket devices. It does not cover special effect conductors like fibre optic cables or hollow conductors (waveguides).

The material selection criteria given here are applicable to cables with copper conductors.

This European Standard is not applicable to the following:

- special purpose vehicles, such as track-laying machines, ballast cleaners and personnel carriers;
- vehicles used for entertainment on fairgrounds;
- vehicles used in mining;
- electric cars;
- funicular railways.

As the field of cabling in rolling stock is also dealt with in the cable makers' standard, references are made to EN 50264 series, EN 50306 series, EN 50382 series and EN 50355.

This European Standard applies in conjunction with the relevant product and installation standards. Stricter requirements than those given in this European Standard may be necessary.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 45545 (all parts), *Railway applications – Fire protection on railway vehicles*

EN 45545-1, *Railway applications – Fire protection on railway vehicles – Part 1: General*

EN 45545-2, *Railway applications – Fire protection on railway vehicles – Part 2: Requirements for fire behaviour of materials and components*

EN 45545-3 *Railway applications - Fire protection on railway vehicles - Part 3: Fire resistance requirements for fire barriers*

EN 45545-5, *Railway applications – Fire protection on railway vehicles – Part 5: Fire safety requirements for electrical equipment including that of trolley buses, track guided buses and magnetic levitation vehicles*

EN 50121-3-1, *Railway applications – Electromagnetic compatibility – Part 3-1: Rolling stock – Train and complete vehicle*

EN 50121-3-2, *Railway applications – Electromagnetic compatibility – Part 3-2: Rolling stock – Apparatus*

EN 50124-1, *Railway applications – Insulation coordination – Part 1: Basic requirements – Clearances and creepage distances for all electrical and electronic equipment*

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