



NSAI
Standards

Irish Standard
I.S. EN 50502:2015

Railway applications - Rolling stock - Electric equipment in trolley buses - Safety requirements and current collection systems

I.S. EN 50502:2015

Incorporating amendments/corrigenda/National Annexes issued since publication:

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This European Standard was approved by CENELEC on 2015-03-30. 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.

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EN 50502:2015 (E)

European foreword

This document (EN 50502:2015) has been prepared by CLC/SC 9XB "Electromechanical material on board rolling stock" of the Technical Committee CENELEC TC 9X "Electrical and electronic applications for railways".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2016-03-30
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2018-03-30

This document supersedes CLC/TS 50502:2008.

EN 50502:2015 includes the following significant technical changes with respect to CLC/TS 50502:2008:

- Clause 1: a more detailed scope (guided vehicles) in reference to other electric vehicles;
- 5.6.1: insulation resistance and separate source applied voltage tests for voltage band I components is waived with respect to other electric vehicles and with reference to ECE R100;
- Table 5: test voltages for components intended to break a current which are used with open contacts for supplementary or basic insulation;
- 6.4.2: specification of periodical checks additional to insulation resistance tests;
- 6.2.5, Table 6: electrical tests of the insulation of entrance areas are waived, visual inspection is added;
- 6.5: extension of description and test of different leakage detectors;
- A.3: description of special requirements for external insulations;
- A.13, A.14: addition of energy storage systems and fuel cells;
- B.2.4.6: equipment for switch operation of overhead contact line.

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.

1 Scope

This European Standard applies to electrical systems on board of vehicles of the type trolley bus, as defined in 3.1, fed with a nominal line voltage (U_n) between 600 V d.c. and 750 V d.c.

This European Standard defines the requirements and constructional hints, especially to avoid electrical danger to the public and to staff. Where special requirements are existing for trolley buses, hints are given for mechanical and functional safety as well as for protection against fire.

This European Standard covers vehicles intended for public transport of persons. This Standard applies to:

- trolley buses,
- buses with current rail for guidance in the road surface,
- guided buses with bipolar roof current collector.

This European Standard does not apply to:

- a) electric driven vehicles with only internal power supply:
 - 1) hybrid vehicles,
 - 2) diesel - electric vehicles,
 - 3) fuel - cell vehicles,
 - 4) battery vehicles,
- b) vehicles with safe protective bonding:
 - 1) rubber tyred commuter trains,
 - 2) guided buses with supply by a separate current rail,
 - 3) rail guided buses with unipolar roof current collector,
- c) vehicles operated outside publicly accessible areas:
 - 1) electric driven lorries on motorways.

Guidance and current rails are special solutions and at this time are not under standardization like trolley bus current collectors and overhead contact lines (OCL).

It refers mainly to earthed networks, but reference is made also to galvanically insulated networks.

Annex A is related to detailed design features for trolley buses.

Annexes B and C are related to the current collection systems. The detailed scope of these annexes is given in Annex B.

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 45502 (all parts), *Active implantable medical devices*

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 50110 (all parts), *Operation of electrical installations*

EN 50110-1:2013, *Operation of electrical installations — Part 1: General requirements*

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