



NSAI
Standards

Irish Standard
I.S. EN 50206-1:2010

Railway applications - Rolling stock - Pantographs: Characteristics and tests -- Part 1: Pantographs for main line vehicles

I.S. EN 50206-1:2010

Incorporating amendments/corrigenda issued since publication:

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I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

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SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

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English version

**Railway applications -
Rolling stock -
Pantographs: Characteristics and tests -
Part 1: Pantographs for main line vehicles**

Applications ferroviaires -
Matériel roulant -
Pantographes: Caractéristiques et essais
-
Partie 1: Pantographes pour véhicules
grandes lignes

Bahnanwendungen -
Schienenfahrzeuge -
Merkmale und Prüfungen
von Stromabnehmern -
Teil 1: Stromabnehmer
für Vollbahnfahrzeuge

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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.

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CENELEC

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

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Foreword

This European Standard was prepared by SC 9XB, Electromechanical material on board rolling stock, of Technical Committee CENELEC TC 9X, Electrical and electronic applications for railways. It was submitted to the CENELEC formal vote and was approved by CENELEC as EN 50206-1 on 2010-05-01.

This document supersedes EN 50206-1:1998.

The main changes brought by this revision are:

- simplification and standardisation of the tolerances for static contact force (Annexes A and B);
- definition of a new investigation test "Measurement of mean static contact force at ambient temperature" (6.3.4);
- definition of a new combined test "Check of operating system at maximum speed" (6.14);
- adjustment of terms to TSI (static contact force instead of static force);
- deletion of Clause 10;
- update of normative references.

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) 2011-05-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) - *

* D115/202: No dow fixed as long as EN 50206-1:1998 is referenced as such in Technical Specifications for Interoperability (TSIs).

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Introduction

The electrical power supply of a tractive unit is achieved by the collection of current from one or more contact wires by means of one or more pantograph(s), installed on the traction unit or on the trainset's vehicle.

The contact strips of the pantograph which slide along the contact wire facilitate the transmission of power.

The pantograph and the overhead contact line system form two oscillating sub-systems which can be displaced. There exists a unilateral sliding linkage between them, which shall ensure continuous contact. Their design shall allow for minimum wear of both sub-systems when used.

1 Scope

This European Standard specifies the general assembly characteristics which are to be applied to pantographs, to enable current collection from the overhead contact line system. It also specifies the tests the pantographs have to perform, excluding insulators.

This European Standard is not applicable to pantograph dielectric tests, which are to be performed on the pantograph installed on the vehicle roof. If no other requirement is agreed between customer and supplier, insulation coordination according to EN 50124-1 may be used.

This European Standard is not applicable to pantographs used on isolated metros and light rail systems. These pantographs are considered in EN 50206-2.

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.

EN 50125-1, *Railway applications – Environmental conditions for equipment – Part 1: Equipment on board rolling stock*

EN 50126 series, *Railway applications – The specification and demonstration of Reliability, Availability, Maintainability and Safety (RAMS)*

EN 50163, *Railway applications – Supply voltages of traction systems*

EN 50317, *Railway applications – Current collection systems – Requirements for and validation of measurements of the dynamic interaction between pantograph and overhead contact line*

EN 50367, *Railway applications – Current collection systems – Technical criteria for the interaction between pantograph and overhead line (to achieve free access)*

EN 60077 (series), *Railway applications – Electric equipment for rolling stock (IEC 60077 series)*

EN 61373, *Railway applications – Rolling stock equipment – Shock and vibration tests (IEC 61373)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1 General

3.1.1

supplier

manufacturer of the pantograph

3.1.2

customer

either operating authority or vehicle manufacturer

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