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Standards

Irish Standard  
I.S. EN 16185-1:2014+A1:2020

# Railway applications - Braking systems of multiple unit trains - Part 1: Requirements and definitions

**I.S. EN 16185-1:2014+A1:2020**

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

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## National Foreword

I.S. EN 16185-1:2014+A1:2020 is the adopted Irish version of the European Document EN 16185-1:2014+A1:2020, Railway applications - Braking systems of multiple unit trains - Part 1: Requirements and definitions

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EUROPEAN STANDARD

**EN 16185-1:2014+A1**

NORME EUROPÉENNE

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English Version

## Railway applications - Braking systems of multiple unit trains - Part 1: Requirements and definitions

Applications ferroviaires - Systèmes de freinage pour  
trains automoteurs - Partie 1 : Exigences et définitions

Bahnanwendungen - Bremssysteme für Triebzüge -  
Teil 1: Anforderungen und Definitionen

This European Standard was approved by CEN on 13 October 2014 and includes Amendment 1 approved by CEN on 6 April 2020.

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## European foreword

This document (EN 16185-1:2014+A1:2020) has been prepared by Technical Committee CEN/TC 256 “Railway Applications”, the secretariat of which is held by DIN.

This document includes Amendment 1 approved by CEN on 4 April 2020.

This document supersedes A1 EN 16185-1:2014 A1.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 A1.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2020, and conflicting national standards shall be withdrawn at the latest by November 2020.

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

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive 2016/797/EU.

For relationship with EU Directive EU Directive 2016/797/EU, see informative Annex ZA which is an integral part of this document.

This series of European Standards *Railway applications — Braking systems of multiple unit trains* consists of:

- *Part 1: Requirements and definitions;*
- *Part 2: Test methods.*

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

**EN 16185-1:2014+A1:2020 (E)****1 Scope**

**A1** This document describes the functionality, constraints, performance and operation of a brake system for use in self-propelling thermal and electric trains operating on routes of the European rail system network. **A1**

This European Standard covers:

- all new vehicle designs of self-propelling thermal and electric trains being operated at a maximum speed up to 200 km/h, in the following text simply called EMU/DMU;
- all major overhauls of the above-mentioned vehicles if they involve redesigning or extensive alteration to the brake system of the vehicle concerned.

This standard does not cover:

- locomotive hauled trains which are specified by EN 14198;
- mass transit rolling stock which is specified by EN 13452-1;
- high speed trains being operated at speeds greater than 200 km/h which are specified by EN 15734-1.

**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 837-1:1996, *Pressure gauges — Part 1: Bourdon tube pressure gauges — Dimensions, metrology, requirements and testing*

EN 854, *Rubber hoses and hose assemblies — Textile reinforced hydraulic type — Specification*

EN 10220, *Seamless and welded steel tubes — Dimensions and masses per unit length*

EN 10305-4, *Steel tubes for precision applications — Technical delivery conditions — Part 4: Seamless cold drawn tubes for hydraulic and pneumatic power systems*

EN 10305-6, *Steel tubes for precision applications — Technical delivery conditions — Part 6: Welded cold drawn tubes for hydraulic and pneumatic power systems*

EN 13749, *Railway applications — Wheelsets and bogies — Method of specifying the structural requirements of bogie frames*

EN 14198, *Railway applications — Braking — Requirements for the brake system of trains hauled by a locomotive*

EN 14478:2005, *Railway applications — Braking — Generic vocabulary*

EN 14535-1, *Railway applications — Brake discs for railway rolling stock — Part 1: Brake discs pressed or shrunk onto the axle or drive shaft, dimensions and quality requirements*

EN 14535-2, *Railway applications — Brake discs for railway rolling stock — Part 2: Brake discs mounted onto the wheel, dimensions and quality requirements*



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