

Irish Standard I.S. EN 16207:2014

Railway applications - Braking - Functional and performance criteria of Magnetic Track Brake systems for use in railway rolling stock

© CEN 2014 No copying without NSAI permission except as permitted by copyright law.

I.S. EN 16207:2014

Incorporating amendments/corrigenda/National Annexes issued since publication

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

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

S.R.~xxx: Standard~Recommendation-recommendation~based~on~the~consensus~of~an~expert~panel~and~subject~to~public~consultation.

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

This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.

This document is based on: Published:
EN 16207:2014 2014-08-20

This document was published
under the authority of the NSAI

and comes into effect on:

2014-09-06

ICS number:

45.060.01

NOTE: If blank see CEN/CENELEC cover page

NSAI T +353 1 807 3800 Sales:

 1 Swift Square,
 F +353 1 807 3838
 T +353 1 857 6730

 Northwood, Santry
 E standards@nsai.ie
 F +353 1 857 6729

 Dublin 9
 W NSAI.ie
 W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

EUROPEAN STANDARD

EN 16207

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2014

ICS 45.060.01

English Version

Railway applications - Braking - Functional and performance criteria of Magnetic Track Brake systems for use in railway rolling stock

Applications ferroviaires - Freinage - Critères pour la fonction et la performance des systèmes de freinage magnétiques pour véhicules ferroviaires

Bahnanwendungen - Bremse - Anforderungen an Funktion und Leistungsfähigkeit von Magnetschienenbremssystemen für Schienenfahrzeuge

This European Standard was approved by CEN on 28 June 2014.

CEN 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. 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 CEN 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 CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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 United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION COMITÉ EUROPÉEN DE NORMALISATION EUROPÄISCHES KOMITEE FÜR NORMUNG

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

Contents		Page	
Forew	Foreword4		
1	Scope		
2	Normative references		
- 3	Terms, definitions and abbreviations		
ა 3.1	Terms and definitions		
3.2	Abbreviations		
4	Task and purpose of the MTB	8	
5	Design requirements		
5 5.1	Space envelope to be observed by the MTB		
5.2	Retardation force		
5.3	Guidance of the activated magnet when applied to the rails		
5.4	Rest position of the magnet above the rail surface		
5.5	Magnet elements		
5.5.1	End pieces	11	
5.5.2	Pole shoes		
5.6	Clearance for wheel lathe machines and wheel skates		
5.7	Strength requirements		
5.8	Mechanical fastening of the MTB parts to the bogie		
5.9	Additional requirements for permanent magnets		
5.10	Control of the MTB	15	
6	Load combinations for component tests	16	
6.1	MTB performance considered in the emergency brake performance		
6.2	MTB performance not considered in the emergency brake performance	17	
7	MTB diagnostics	17	
8	EMC and interfaces	17	
8.1	Compatibility with train detection systems		
8.2	Bogie components in the area of MTB		
8.3	EMC-proof in accordance with EN 50121-3-2	18	
9	Type and series production tests		
9.1	Type test		
9.1.1	General		
9.1.2	Magnetic test		
9.1.3	Electric test		
9.1.4 9.1.5	Thermal test Mechanical test		
9.1.5 9.1.6	Other tests and proofs		
9.1.6 9.2	Series production testing		
10	Vehicle implementation tests		
-	·		
Annex A.1	x A (normative) Design loads (load assumptions) of the MTB		
A.1 A.2	GeneralRest position		
A.2 A.3	Working position (brake application position)		
A.3 A.4	Rail brakes		
Α. 4 Δ.5	FMF/C\A	27	

A.6	Load collective for operational safety proof	27
A.7	Load collective for component tests on the example of 10 000 brake applications	
A.8	Test procedure	29
A.9	Test result	29
Annex	B (normative) Measurement of the magnetic attractive force — Functional test of brake	•
D 4	magnets	
B.1	Measurement of the magnetic attractive force of MTB magnets	
B.2	Formation of the mean magnetic attractive force for rigid magnets	31
B.3	Formation of the mean magnetic attractive force for articulated magnets	31
Annex	C (normative) End pieces of MTB	33
Annex	ZA (informative) Relationship between this European Standard and the Essential	
	Requirements of EU Directive 2008/57/EC	37
Biblio	graphy	40

Foreword

This document (EN 16207:2014) has been prepared by Technical Committee CEN/TC 256 "Railway applications", the secretariat of which is held by DIN.

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 February 2015 and conflicting national standards shall be withdrawn at the latest by February 2015.

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 2008/57/EC.

For relationship with EU Directive 2008/57/EC, see informative Annex ZA, which is an integral part of this document.

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.

1 Scope

This European Standard specifies the functionality, position, constraints and control of a magnetic track brake system (MTB system) installed in bogies for use in emergency braking and in low adhesion conditions on Mainline Trains with speeds up to 280 km/h. It covers high suspension types of MTB only and not high/low and low suspension type of MTB.

This document also contains test methods and acceptance criteria for an MTB system. It identifies interfaces with electrical equipment, bogie, track and other brake systems.

On the basis of the existing international and national standards, additional requirements are defined for:

- conditions of application for the MTB system;
- retardation and brake forces;
- functional and design features;
- strength requirements;
- type, series and vehicle implementation tests.

For design and calculation a "reference surface" is established.

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 10025-2, Hot rolled products of structural steels — Part 2: Technical delivery conditions for non-alloy structural steels

EN 13674-1, Railway applications — Track — Rail — Part 1: Vignole railway rails 46 kg/m and above

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

EN 14478, Railway applications — Braking — Generic vocabulary

prEN 14531-2, Railway applications — Methods for calculation of stopping and slowing distances and immobilisation braking — Part 2: Step by step calculations for train sets or single vehicles

EN 15085 (all parts), Railway applications — Welding of railway vehicles and components

EN 15179, Railway applications — Braking — Requirements for the brake system of coaches

EN 15273-1:2013, Railway applications — Gauges — Part 1: General — Common rules for infrastructure and rolling stock

EN 15273-2, Railway applications — Gauges — Part 2: Rolling stock gauge

EN 15734-1, Railway applications — Braking systems of high speed trains — Part 1: Requirements and definitions



Product Page

- Dooking for additional Standards? Visit Intertek Inform Infostore
- Dearn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation