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Järnvägar – Bromssystem – Testförfarande för passagerarvagn

Railway applications – Braking – Passenger coach test procedure

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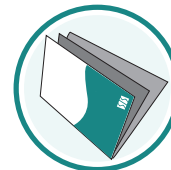
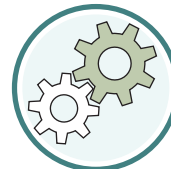
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EUROPEAN STANDARD

EN 17065

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2018

ICS 45.060.01

English Version

Railway applications - Braking - Passenger coach test procedure

Applications ferroviaires - Freinage - Procédure d'essai
des voitures voyageurs

Bahnanwendungen - Bremsen - Prüfverfahren für
Reisezugwagen

This European Standard was approved by CEN on 15 February 2018.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 17065:2018) 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of an identical text or by endorsement, at the latest by December 2018, and conflicting national standards shall be withdrawn at the latest by December 2018.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN 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, see informative Annex ZA, which is an integral part of this document.

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1 Scope

This document specifies test methods and acceptance criteria for a brake system used in passenger coaches including driving trailers for use in general operation.

This document is applicable to all new passenger coaches including driving trailers, which are designed for general operation in the European conventional rail system network in accordance with EN 14198.

This document does not cover the homologation tests of any brake component.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 14198, *Railway applications — Braking — Requirements for the brake system of trains hauled by locomotives*

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

EN 14531-1, *Railway applications — Methods for calculation of stopping and slowing distances and immobilization braking — Part 1: General algorithms utilizing mean value calculation for train sets or single vehicles*

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

EN 14601, *Railway applications — Straight and angled end cocks for brake pipe and main reservoir pipe*

EN 15220, *Railway applications — Brake indicators*

EN 15595, *Railway applications — Braking — Wheel slide protection*

EN 15877-2:2013, *Railway applications — Markings of railway vehicles — Part 2: External markings on coaches, motive power units, locomotives and on track machines*

EN 16207, *Railway applications — Braking — Functional and performance criteria of Magnetic Track Brake systems for use in railway rolling stock*

EN 16334, *Railway applications — Passenger Alarm System — System requirements*

prEN 16834, *Railway applications — Braking — Brake performance*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 14478 and EN 14198 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

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- 3.1**
testing institute
test organization in accordance with EN ISO/IEC 17025
- 3.2**
type test
test of one or more devices, system or complete vehicle demonstrating that the design meets the required specifications and the relevant standards
- 3.3**
routine test
vehicle test that is performed during or after manufacture to confirm conformity to specified criteria
- 3.4**
minimum load
load condition “design mass in working order” as defined in EN 14198
- 3.5**
normal load
load condition “design mass under normal payload” as defined in EN 14198
- 3.6**
maximum braking load
load condition lower or equal to “design mass under exceptional payload” as defined in EN 14198

4 Symbols and abbreviations

For the purposes of this document, the symbols and abbreviations given in Table 1 apply.

Table 1 — Symbols and abbreviations

Symbol	Designation	Unit
p_{BP}	Pressure in brake pipe	bar
p_C	Pressure in brake cylinder	bar
p_{CV}	Brake cylinder pilot pressure	bar
p_{MRP}	Pressure in main reservoir pipe	bar
p_R	Pressure in auxiliary reservoir	bar
p_T	Output pressure from load sensor (pneumatic load signal)	bar
$t_{cd,corr}$	Corrected release time	s
$t_{cd,meas}$	Measured release time	s
U_{nom}	Nominal voltage	V
V_P	Given brake cylinder pilot volume	l
$V_{P,me}$	Additional brake cylinder pilot volume caused by the measurement equipment	l
$\eta_{stat\ test}$	Static efficiency of brake rigging in the tests	-
λ	Brake weight percentage	%
BP	brake pipe	
ETCS	European train control system	
EP	Electro-pneumatic brake (EP assist)	
G	Brake mode G or brake position G	
+Mg	brake position with MTB (P+Mg, R+Mg)	
MRP	Main reservoir pipe	
MTB	Magnetic track brake	
P	Brake mode P or brake position P	
PAS	Passenger alarm system	
R, <R>	Brake position with high brake performance ($\lambda > 125\%$); for details see EN 14198	
WSP	Wheel slide protection	

5 Requirements on the test execution

5.1 Test specification

The tests defined in this document shall be carried out in accordance with Annex A and the results shall be used to verify whether the brake system of the passenger coach complies with the requirements of EN 14198 and the other specified requirements.

This document defines the static and dynamic tests during type and routine test phases. The type tests shall be performed by a testing institute. There are type and routine tests: