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Railway applications - Braking - Brake pad holder

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English Version

Railway applications - Braking - Brake pad holder

Applications ferroviaires - Freinage - Porte-garnitures

Bahnanwendungen - Bremse - Bremsbelaghalter

This European Standard was approved by CEN on 22 January 2024.

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Contents

Page

European foreword ... 4

Introduction ... 5

1 Scope ... 6

2 Normative references ... 6

3 Terms and definitions ... 7

4 Symbols and abbreviations ... 7

5 Design and manufacture ... 8
5.1 Latch mechanism ... 8
5.2 Interchangeability by applying same main dimensions and geometry ... 8
5.2.1 General ... 8
5.2.2 Interchangeability for "conventional" brake unit ... 8
5.2.3 Interchangeability for "compact" brake unit ... 8
5.2.4 Dimensional conformity ... 8
5.3 Material ... 8
5.4 Environmental conditions ... 9
5.4.1 Ambient temperature ... 9
5.4.2 Other environmental conditions ... 9
5.5 Loading in the direction of force application ... 10
5.6 Loading in the direction of the braking moment (tangential force) ... 10
5.7 Vibrations and shocks ... 10
5.7.1 New designs ... 10
5.7.2 Existing designs ... 11

6 Type test methods ... 11
6.1 Sampling for type test ... 11
6.2 Test requirements ... 11
6.3 Test procedure ... 11
6.3.1 Interchangeability by applying same main dimensions and geometry ... 11
6.3.2 Material ... 11
6.3.3 Salt spray test ... 12
6.3.4 Loading in the direction of force application ... 12
6.3.5 Loading in the direction of the braking moment (tangential force) ... 14
6.3.6 Vibrations and shocks ... 15

7 In-service assessment ... 18

8 Designation ... 18

9 Identification and marking ... 18

Annex A (normative) **Interchangeability for "conventional" brake unit** ... 19

Annex B (informative) **Interchangeability for "conventional" brake unit** ... 21

Annex C (normative) **Interchangeability for "compact" brake unit** ... 23

Annex D (informative) **Interchangeability for "compact" brake unit** ... 24

Annex E (informative) **Device with mechanical coding** ... 26

Annex F (informative) **In-service assessment** **27**
F.1 General **27**
F.2 Test set-up and sampling **27**
F.3 Procedure **27**
F.4 Pass/fail criteria **27**
Bibliography **28**

European foreword

This document (EN 16451:2024) 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 October 2024, and conflicting national standards shall be withdrawn at the latest by October 2024.

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 supersedes EN 16451:2015.

In comparison with the previous edition EN 16451:2015, the following technical modifications have been made:

— update of normative and informative references;

— modification of requirements on latch mechanism;

— modification of requirements on loading in the direction of force application and in the direction of the braking moment;

— modifications to Annex A and Annex B;

— content of Annex C switched to Annex E;

— content of Annex E switched to Annex F;

— informative Annex D “Geometry of standard brake pads” has been deleted and references to EN 15328 have been added.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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

Introduction

This document gives the requirements to be met for the design, dimensioning, testing and quality assessment of brake pad holders. These requirements cannot be written in sufficient detail to ensure good workmanship or proper construction. Each manufacturer is therefore responsible for taking every necessary step to make sure, that the quality of workmanship and construction is such as to ensure accordance with good engineering practice.

1 Scope

This document defines requirements for the brake pad holders with which the heavy rail vehicles and urban rail vehicles are fitted.

This document is applicable to the brake pad holders made from ferrous materials e.g. cast iron, cast steel or forged steel.

This document is not applicable for brake pad holders made of non-ferrous materials.

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 14478:2017, *Railway applications — Braking — Generic vocabulary*

EN 15328:2020, *Railway applications — Braking — Brake pads*

EN 50125-1:2014, *Railway applications — Environmental conditions for equipment — Part 1: Rolling stock and on-board equipment*

EN 60068-2-6:2008, *Environmental testing — Part 2-6: Tests — Test Fc: Vibration (sinusoidal) (IEC 60068-2-6:2007)*

EN 60068-2-47:2005, *Environmental testing — Part 2-47: Tests — Mounting of specimens for vibration, impact and similar dynamic tests (IEC 60068-2-47:2005)*

EN 60721-3-5:1997, *Classification of environmental conditions — Part 3: Classification of groups of environmental parameters and their severities — Section 5: Ground vehicle installations (IEC 60721-3-5:1997)*

EN 61373:2010, *Railway applications — Rolling stock equipment — Shock and vibration tests (IEC 61373:2010)*

EN ISO 6506-1:2014, *Metallic materials — Brinell hardness test — Part 1: Test method (ISO 6506-1:2014)*

EN ISO 6507-1:2018, *Metallic materials — Vickers hardness test — Part 1: Test method (ISO 6507-1:2018)*

EN ISO 6508-1:2016, *Metallic materials — Rockwell hardness test — Part 1: Test method (ISO 6508-1:2016)*

EN ISO 6892-1:2019, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature (ISO 6892-1:2019)*

EN ISO 9227:2022, *Corrosion tests in artificial atmospheres — Salt spray tests (ISO 9227:2022)*

EN ISO 14284:2022, *Steel and iron — Sampling and preparation of samples for the determination of chemical composition (ISO 14284:2022)*

EN ISO 148-1:2016, *Metallic materials — Charpy pendulum impact test — Part 1: Test method (ISO 148-1:2016)*

EN ISO 18203:2022, *Steel — Determination of the thickness of surface-hardened layers (ISO 18203:2016)*