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Järnvägar – Bromssystem – Bromsblocksfäste och bromsblockskil

Railway applications – Braking – Brake block holder and brake block key

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Denna standard ersätter SS-EN 15329:2015, utgåva 1.

The European Standard EN 15329:2019 has the status of a Swedish Standard. This document contains the official version of EN 15329:2019.

This standard supersedes the SS-EN 15329:2015, edition 1.

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EUROPEAN STANDARD

EN 15329

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2019

ICS 45.040

Supersedes EN 15329:2015

English Version

Railway applications - Braking - Brake block holder and brake block key

Applications ferroviaires - Freinage - Porte-semelles et
clavette de semelle de frein

Bahnanwendungen - Bremsen - Bremsklotzhalter und
Bremsklotzkeil

This European Standard was approved by CEN on 30 December 2018.

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.

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

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

SS-EN 15329:2019 (E)

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European foreword

This document (EN 15329:2019) 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of an identical text or by endorsement, at the latest by September 2019, and conflicting national standards shall be withdrawn at the latest by September 2019.

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 15329:2015.

This document has been prepared under a standardization request given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU 2008/57/EC.

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

Compared to the previous edition, the following changes have been made:

- a) the standard title has been modified;
- b) normative references have been updated;
- c) terms and definitions have been revised;
- d) requirements on materials have been revised;
- e) requirements on design have been revised;
- f) requirements on markings have been revised;
- g) requirements on type testing have been revised;
- h) normative Annexes have been revised;
- i) new informative Annex ZA has been added.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

SS-EN 15329:2019 (E)

1 Scope

This document applies to brake block holders and brake block keys included in brake rigging installed on railway vehicles.

Brake block holders and brake block keys made of non-ferrous materials are not within the scope of this document.

This document contains requirements for design and evaluation testing of conformity.

The requirements contained in this document apply to the brake block holders and brake block keys fitted on railway vehicles with brake blocks whose dimensions are in accordance with the requirements given in EN 16452.

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 10204, *Metallic products — Types of inspection documents*

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

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

EN 16452, *Railway applications — Braking — Brake blocks*

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

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)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 14478, EN 16452 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>

3.1

brake block key

securing element for the brake block in the brake block holder

3.2

brake block with low coefficient of friction

composite (organic or sinter) brake block material type L or LL as defined in EN 16452 or cast iron brake block material

3.3

brake block with high coefficient of friction

composite (organic or sinter) brake block material type K as defined in EN 16452

**3.4
single brake block holder**

brake block holder suitable for one brake block typically of length 320 mm; corresponds to “Bg” configuration as defined in EN 16452

**3.5
double brake block holder**

brake block holder suitable for two brake blocks typically of length 250 mm; corresponds to “Bgu” configuration as defined in EN 16452

**3.6
integrated brake rigging**

brake rigging as an integrated part of the brake actuator

**3.7
non-integrated brake rigging**

independent brake rigging

Note 1 to entry: Known as “standard rigging”.

4 Symbols and abbreviations

4.1 Symbols

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

Table 1 — Symbols and units

Symbol	Description	Unit
D	Diameter	mm
F_{bmax}	Maximum application force in service = maximum pneumatic application force + overlapping parking brake force ^a	kN
F_{Pr}	Test force	kN
F_{Prdyn}	Dynamic test force	kN
F_{Prm}	Dynamic mean force	kN
h	Pitch before deflection test	mm
L_S	Span during deflection test	mm
^a Overlapping is to be considered if overlapping is a normal mode.		

4.2 Abbreviations

For the purposes of this document, the following abbreviations apply.

- MP magnetic particle testing
- UT Ultrasonic Testing
- GE Go Everywhere

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5 Materials

5.1 General

The ferrous materials used for the manufacturing of brake block holders and their components shall comply with relevant standards of material (as for instance welded design shall be in accordance with EN 15085).

Declaration of conformity with standards (e.g. with EN 10204 or internal specification) shall be provided.

5.2 Material for brake block holder

The brake block holders shall be produced from one of the following:

- steel (cast, forged, rolled or welded);
- grey or nodular cast iron.

5.3 Material for brake block key

The selection of the material and the manufacturing process are free and shall comply with the technical specifications and/or the drawings.

5.4 Corrosion protection

If corrosion protection is applied, it shall not contain any components constituting a hazard for the staff coming into contact with them. Should paint colouring be applied, care shall be taken to ensure that bearing points for bolts, bushes and moving parts are free from paint.

6 Design

6.1 Environmental conditions

6.1.1 General

For vehicles used in “general operation” or “GE” (various formations of vehicles from different origins; train formation not declared at design stage) and using non-integrated brake rigging, all the environmental requirements listed shall be taken into account within the design concept of the components. However only the assessment tests listed in Clause 8 shall be performed. The remaining proofs are to be presented in the declarations of conformity.

For other vehicles any deviation on below environmental conditions is allowed. Any special requirement shall be declared in a specification.

6.1.2 Ambient temperature

The brake component shall be able to operate within the temperature class TX in accordance with EN 50125-1, where the upper limit for TX shall be raised up to +70 °C for the external air temperature.

6.1.3 External air humidity

The following humidity levels shall be considered for the external environment (EN 50125-1:2014, 4.4):

- yearly average: 75 % relative humidity;
- on 30 days in the year continuously: between 75 % and 95 % relative humidity;
- on the other days occasionally: between 95 % and 100 % relative humidity;
- maximum absolute humidity: 30 g/m³ occurring in tunnels.

6.1.4 Rain

Rain rate of 6 mm/min shall be taken into account. The effect of rain shall be considered depending on the possible equipment installation together with wind and vehicle movement.

6.1.5 Snow, ice and hail

Consideration shall be given to the effect of all kinds of snow, ice and hail. The maximum diameter of hailstones shall be taken as 15 mm, larger diameter can occur exceptionally. The effect of snow, ice and hail shall be considered depending on the equipment installation together with wind and vehicle movement.

6.1.6 Solar radiation

Equipment design shall allow for direct exposure to solar radiation at the rate of 1 120 W/m² for a maximum duration of 8 h per day.

6.1.7 Resistance to pollution

The effects of pollution shall be considered in the design of equipment and components. Means may be provided to reduce exposure to pollution by the effective use of protection of the device. The severity of pollution can depend upon the location of the equipment therefore the effects of the kinds of pollution indicated in Table 2 shall be considered as a minimum.

Table 2 — Class of environmental definition

Pollution	Class to be considered (IPX level 5)
Chemically active substances	Class 5C2 of EN 60721-3-5:1997
Contaminating fluids	Class 5F2 (electrical engine) of EN 60721-3-5:1997
Biologically active substances	Class 5B2 of EN 60721-3-5:1997
Dust	Class 5S2 of EN 60721-3-5:1997
Stones and other objects Ballast and other objects	maximum 15 mm diameter
Sand	Class 5S2 of EN 60721-3-5:1997
Salt mist	Class 5C2 of EN 60721-3-5:1997

6.2 Brake block holders

6.2.1 General

The brake block holders shall provide secure mounting and positioning of the brake block made of grey cast iron, sintered material or composite material. Sprues, suction heads and sharp edges caused by manufacturing shall be removed. Brake block holders should be designed to accommodate

- one brake block configuration Bg for single brake block holders (see Annex A),
- two brake blocks configuration Bgu for double brake block holders (see Annex B).

For vehicles used in “general operation” or “GE” and using non-integrated brake rigging, the dimensional characteristics shall ensure the interchangeability of brake block holders designed in accordance with Annexes A and B and including marking as described in Annex C.

For other vehicles with integrated brake rigging and using brake blocks in accordance with EN 16452, only the interface between brake block holder and brake block shall be in accordance with Annexes A and B.