

SVENSK STANDARD

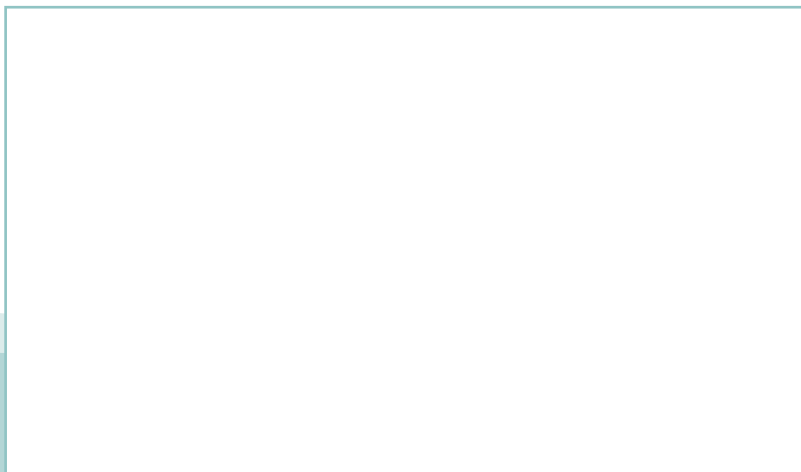
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Järnvägar – Bromssystem – Beläggghållare

Railway applications – Braking – Brake pad holder



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EUROPEAN STANDARD

EN 16451

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2015

ICS 45.040

English Version

Railway applications - Braking - Brake pad holder

Applications ferroviaires - Freinage - Porte-garnitures

Bahnanwendungen - Bremse - Bremsbelaghalter

This European Standard was approved by CEN on 13 May 2015.

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Foreword

This document (EN 16451:2015) 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of an identical text or by endorsement, at the latest by December 2015, and conflicting national standards shall be withdrawn at the latest by December 2015.

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Introduction

This European Standard 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

The requirements contained in this European Standard apply to the brake pad holders with which the rail vehicles of main-line railways, regional and suburban railways are fitted. Brake pad holders pursuant to this standard are to be made from ferrous materials e.g. cast iron, cast steel or forged steel. Brake pad holders made of non-ferrous materials are not subject of this standard.

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 10204, *Metallic products - Types of inspection documents*

EN 10328, *Iron and steel - Determination of the conventional depth of hardening after surface heating*

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

EN 22768-1, *General tolerances - Part 1: Tolerances for linear and angular dimensions without individual tolerance indications (ISO 2768-1)*

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

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

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

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

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

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

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

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

EN ISO 9227, *Corrosion tests in artificial atmospheres - Salt spray tests (ISO 9227)*

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

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

3 Terms and definitions

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

3.1

compact disc brake unit

disc brake unit, generally with reduced envelope and weight with a single interface to the bogie

3.2

operational mounting condition

normal and nominal conditions of assembly on a vehicle

3.3

referenced technical drawings

drawings used for definition of brake pad holder

4 Symbols and abbreviations

A%	Percentage elongation after fracture (as specified by EN ISO 6892-1)
<i>F</i>	Force
g	Gravity acceleration 9,81 m/s ²
KV	Absorbed energy for a V-notch test piece (as specified by EN ISO 148-1)
KU	Absorbed energy for a U-notch test piece (as specified by EN ISO 148-1)
SL1 and SL2	Classes of loading
T1 and TX	Classes of temperature as specified by EN 50125-1
VL and VH	Classes of vibration

5 Design and manufacture

5.1 Latch mechanism

The design of the latch mechanism to retain the brake pads shall satisfy the following principle:

- there shall be a positive retention (generation of strain to obtain unlocking) of the latch when in the closed position;
- no single point failure of the latch mechanism and its attachment to the pad holder shall result in a loss of brake pads;
- ease of operation – no special tools to open and close the latch mechanism. Preferably designed to allow use of simple flat bladed screw driver;
- during pad renewal the latch mechanism should remain attached to the brake pad holder;
- renewal of a defective latch mechanism should not require the dismantling of the brake pad holder from the brake unit.

5.2 Interchangeability by applying same main dimensions and geometry

5.2.1 General

Brake pad holders can be designed based on different concepts. The requirements specially for interchangeability are defined below.