



SLOVENSKI STANDARD
SIST-TS CEN/TS 18323:2026

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**Železniška naprava - Kolesni ležaji z vrtljivim zunanjim obročem - Preskušanje
zmogljivosti na preskusni napravi**

Railway application - Wheel bearings with rotating outer ring - Rig performance testing

Bahnanwendungen - Radsatzlager - Lager mit rotierendem Außenring

Applications ferroviaires - Boîtes d'essieux - Roulements avec bague extérieure
tournante

Ta slovenski standard je istoveten z: CEN/TS 18323:2026

ICS:

45.040	Materiali in deli za železniško tehniko	Materials and components for railway engineering
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TECHNICAL SPECIFICATION
SPÉCIFICATION TECHNIQUE
TECHNISCHE SPEZIFIKATION

CEN/TS 18323

September 2026

ICS 45.040

English Version

**Railway application - Wheel bearings with rotating outer
ring - Rig performance testing**

Applications ferroviaires - Boîtes d'essieux -
Roulements avec bague extérieure tournante

Bahnanwendungen - Radsatzlager - Lager mit
rotierendem Außenring

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European foreword

This document (CEN/TS 18323:2025) has been prepared by Technical Committee CEN/TC 256 “Railway Applications”, the secretariat of which is held by DIN.

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Introduction

EN 12082-1 was created for specifying performance testing of conventional railway wheelset bearings which means bearings mounted on a rotating axle and fixed in a non-rotating housing. Therefore, the main acceptance criteria defined by EN 12082-1 are temperatures measured in the stationary load zone of the outer rings. However, in case of some single wheel or axle bridge arrangements this is not possible as in those applications, the outer ring is rotating. That means that the non-rotating load zone is on the inner rings.

Due to technical reasons (e.g. higher Hertzian pressures, lower heat transfer) it is the bearing inner ring which runs warmer than the outer ring regardless of which is the rotating ring. Operating bearing temperatures are in general higher if bearings are preloaded which is often the case for axle bridge bearings.

While this informative document focusses on how to test bearings with rotating outer ring, its existence does neither imply that the execution of the described test is normative for applications with rotating outer rings, nor does it specify under which conditions the test needs to be carried out. The content of the document and particularly the proposed test success criteria are still under technical development and cannot be finally specified before more practical experience is available.

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1 Scope

This document specifies a possible test setup and test methodology on how bearing arrangements can be tested in which the bearing outer ring instead of the inner ring is the rotating component. The bearing arrangement can be based on cartridge bearings but also on a symmetric or asymmetric combination of single row roller bearings which do not constitute a self-contained unit.

This document focuses on grease lubricated bearing arrangements. A test setup for oil lubricated bearing arrangements is different. The document also suggests test acceptance criteria based on the thermal behaviour of the bearings which takes the special loading and application conditions into consideration.

This document offers the possibility to be referred to if bearing arrangements with rotating outer ring undergo performance testing in line with EN 12082-1 for conventional bearings. The necessary type and extent of testing are specified by the deployment procedure specified in EN 12082-2, with respect to design requirements on the axle box and its components. Compliance with EN 12080 and EN 12081 of bearing and grease is not a pre-requisite for the application of this document.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

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

3.1

wheel bearing

assembly consisting of the following major components: rolling bearing(s), grease and seal(s)

Note to entry: Wheels are not in the scope of this TS. Further components such as axle end cap components, bearing sleeve, cover(s), distance rings, fasteners, labyrinth(s) may be also part of the assembly, but their presence depends on the design of the single wheel or axle bridge arrangements.

3.2

rolling bearing

bearing operating with rolling motion between the parts, supporting load and moving in relation to each other

3.3

cartridge bearing

rolling bearing with two or more rows of rolling elements within a self-contained unit, greased and equipped with integral seals

3.4

grease

semi-solid lubricant, which consists of a thickener and additives dispersed in lubricating oil