



SLOVENSKI STANDARD
SIST EN 13232-8:2023

01-december-2023

**Železniške naprave - Zgornji ustroj proge - Kretnice in križišča za Vignolove tirnice
- 8. del: Dilatacijske naprave**

Railway applications - Track - Switches and crossings for Vignole rails - Part 8:
Expansion devices

Bahnanwendungen - Oberbau - Weichen und Kreuzungen für Vignolschienen - Teil 8:
Auszugsvorrichtungen

Applications ferroviaires - Infrastructure - Appareils de voie - Partie 8: Appareils de
dilatation

Ta slovenski standard je istoveten z: EN 13232-8:2023

[SIST EN 13232-8:2023](https://standards.retailcatalog.standards/sist/03-dec-23/86-13232-8:2023)

ICS:

45.080	Tračnice in železniški deli	Rails and railway components
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en,fr,de

English Version

Railway applications - Track - Switches and crossings for Vignole rails - Part 8: Expansion devices

Applications ferroviaires - Voie - Appareils de voie
pour rails Vignole - Partie 8 : Appareils de dilatation

Bahnanwendungen - Oberbau - Weichen und
Kreuzungen für Vignolschienen - Teil 8:
Auszugsvorrichtungen

This European Standard was approved by CEN on 2 January 2023.

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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

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European foreword

This document (EN 13232-8:2023) 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of an identical text or by endorsement, at the latest by April 2024, and conflicting national standards shall be withdrawn at the latest by April 2024.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 13232-8:2007+A1:2011.

This series of standards “*Railway applications – Track – Switches and crossings for Vignole rails*” covers the design and quality of switches and crossings in flat bottomed rail. The list of Parts is as follows:

- *Part 1: Definitions*
- *Part 2: Requirements for geometric design*
- *Part 3: Requirements for wheel/rail interaction*
- *Part 4: Actuation, locking and detection*
- *Part 5: Switches*
- *Part 6: Fixed common and obtuse crossings*
- *Part 7: Crossings with moveable parts*
- *Part 8: Expansion devices*

— *Part 9: Layouts*

Part 1 contains terminology used throughout all parts of this series. Parts 2 to 4 contain basic design guides and are applicable to all switch and crossing assemblies. Parts 5 to 8 deal with particular types of equipment including their tolerances. These use Parts 1 to 4 as a basis. Part 9 defines the geometric and non-geometrical acceptance criteria for inspection of layouts.

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

For the relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

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.

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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.

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Introduction

An expansion device is a device that permits longitudinal relative rail movement of two adjacent rails, while maintaining correct guidance and support.

These longitudinal movements may be required in:

- a) interrupted continuously welded rail (CWR);
- b) structure movement;
- c) or a combination of both.

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EN 13232-8:2023 (E)**1 Scope**

This document

- establishes a working terminology for expansion devices, for their constituent parts and for the types
- specifies the minimum manufacturing requirements for expansion devices and their constituent parts
- formulates codes of practice for inspection and tolerances
- defines the method by which expansion devices and their parts should be identified.

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 13146-1:2019, *Railway applications - Track - Test methods for fastening systems - Part 1: Determination of longitudinal rail restraint*

EN 13232-1:2023, *Railway applications - Track — Switches and crossings for Vignole rails - Part 1: Definitions*

EN 13232-2:2023, *Railway applications - Track — Switches and crossings for Vignole rails - Part 2: Requirements for geometric design*

EN 13232-3:2023, *Railway applications - Track - Switches and crossings for Vignole rails - Part 3: Requirements for wheel/rail interaction*

EN 13232-9:2023, *Railway applications - Track - Switches and crossings for Vignole rails - Part 9: Layouts*

EN 13715:2020, *Railway applications - Wheelsets and bogies - Wheels - Wheels tread*

EN 13674-1:2011+A1:2017, *Railway applications - Track - Rail - Part 1: Vignole railway rails 46 kg/m and above*

EN 13674-2:2019, *Railway applications - Track - Rail- Part 2: Switch and crossing rails used in conjunction with Vignole railway rails 46 kg/m and above*

3 Terms and definitions

For the purpose of this document the terms and definitions given in EN 13232-1:2023 and the following apply.

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

— ISO Online browsing platform: available at <https://www.iso.org/obp>

— IEC Electropedia: available at <http://www.electropedia.org/>

3.1 General definitions

3.1.1

hand of half set

identifies the left hand or right hand half set of the adjustment or expansion switch when viewed standing in the centre of the track and facing the tips of the inside rails or switches

Note 1 to entry: With check rails, there may be two LH or two RH half sets, see Figure 6, or opposite hand half sets.

Note 2 to entry: See 3.2.1 for definition of adjustment switch.

Note 3 to entry: See 3.2.2 for definition of expansion switch.

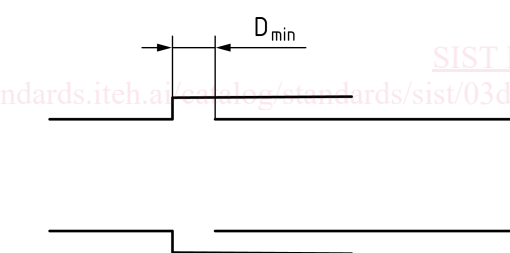
3.1.2

expansion capacity C

maximum permissible relative longitudinal movement between the two rails, where:

$$C = D_{\max} - D_{\min}$$

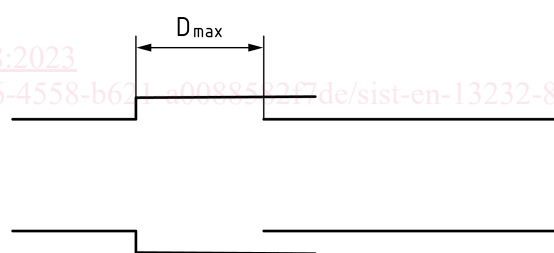
Note 1 to entry: See Figures 1 and 2.



Key

D_{\min} minimum gap

Figure 1 — Closed position



Key

D_{\max} maximum gap

Figure 2 — Open position

3.1.3

relative displacement rail / support

maximum permissible relative longitudinal movement between the rail (switch or stock rail) and the corresponding support (base plate or bearer)

3.1.4

mean position

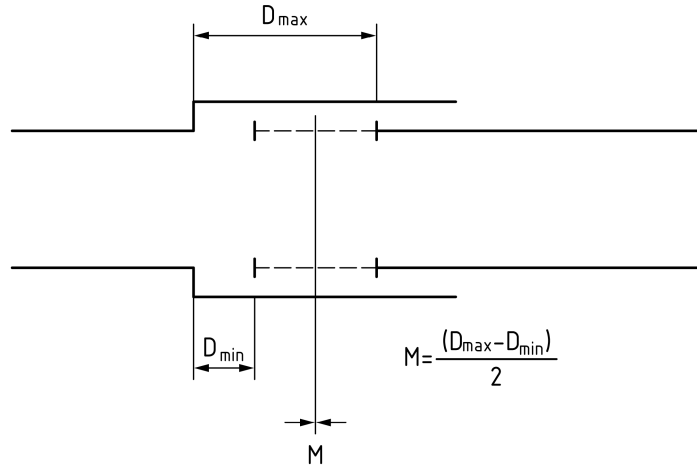
position where the expansion capacity and the relative displacement of rails are half way, and the bearers are in their nominal position (See Figure 3)

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3.1.5

design position

nominal position where the expansion capacity and the relative displacement of rails are half way, especially where shrinkage of concrete structures, for example, will shift the mean position

**Key**

D_{\min}	minimum gap
D_{\max}	maximum gap
M	mean position

Figure 3 — Mean position

3.2 Main types of expansion devices

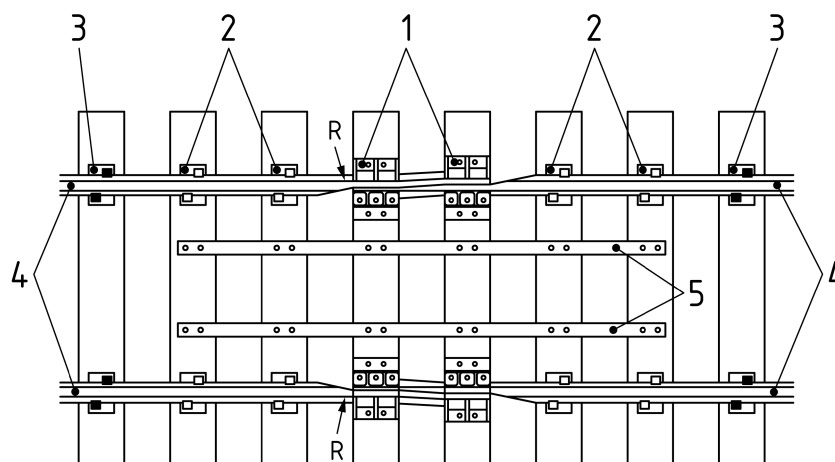
3.2.1

adjustment switch

expansion device with interruption of the running edge sometimes called bayonet type

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3.2.1.1 adjustment switch without check rails (both sides moveable)



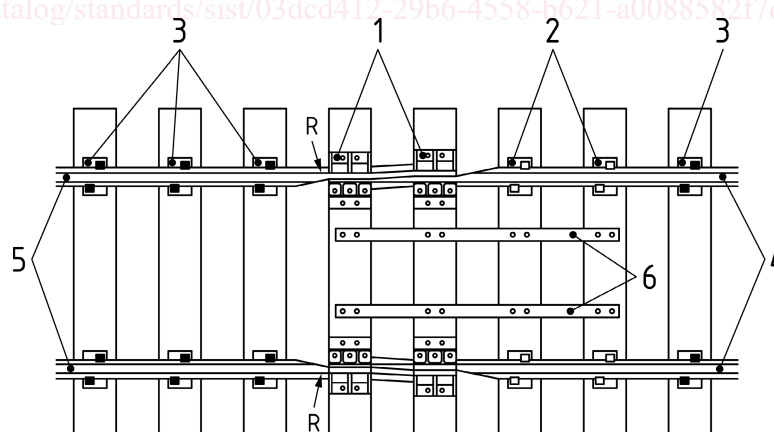
Key

- | | | | |
|---|------------------------|---|-----------------|
| 1 | slide chair | 4 | moveable rails |
| 2 | low restrain fastening | 5 | bearer straps |
| 3 | standard fastening | R | reference point |

Figure 4 — Adjustment switch – Both sides moveable

Note 1 to Entry Low restrain fastenings are not always used and therefore not mandatory, the figure illustrates the location of the low restrain fastening for the situations where they are used. See also 4.2.1.2

3.2.1.2 adjustment switch without check rails with one side moveable



Key

- | | | | |
|---|------------------------|---|-----------------|
| 1 | slide chair | 5 | fixed rails |
| 2 | low restrain fastening | 6 | bearer straps |
| 3 | standard fastening | R | reference point |
| 4 | moveable rails | | |

Figure 5 — Adjustment switch – One side moveable