SLOVENSKI STANDARD
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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: **prEN 13232-8**

ICS:

45.080	Tračnice in železniški deli	Rails and railway components

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English Version

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

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

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

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 256.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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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 (prEN 13232-8:2020) has been prepared by Technical Committee CEN/TC 256 “Railway applications”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will supersede 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.

Introduction

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

These longitudinal movements may be required in:

a) interrupted CWR (continuously welded rail);

b) structure movement;

c) or a combination of both.

1 Scope

This document covers the following subjects: to establish a working terminology for expansion devices, for their constituent parts and for the types; to specify the minimum manufacturing requirements for expansion devices and their constituent parts; to formulate codes of practice for inspection and tolerances; to define 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, *Railway applications - Track - Test methods for fastening systems - Part 1: Determination of longitudinal rail restraint*

prEN 13232-2:2020, Railway applications – Track — Switches and crossings for Vignole rails – Part 2: Requirements for geometric design

prEN 13232-3:2020, Railway applications – Track – Switches and crossings for Vignole rails – Part 3: Requirements for wheel/rail interaction

prEN 13232-9:2020, Railway applications – Track – Switches and crossings for Vignole rails – Part 9: Layouts

EN 13715, Railway applications – Wheelsets and bogies – Wheels – Wheels tread

UIC 510-2, *Trailing stock: wheels and wheelsets – Conditions concerning the use of wheels of various diameters*

3 Terms and definitions

For the purposes of this document, the following terms and definitions 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
customer
term used to define one party involved in using the EN as the technical basis for a transaction: the Operator or User of the equipment, or the Purchaser of the equipment on the User's behalf

3.1.2
supplier
term used to define one party involved in using the EN as the technical basis for a transaction: the Body responsible for the use of the EN in response to the Customer's requirements

3.1.3
hand (of half set) – adjustment switch (bayonet type)
LH (left hand) half set or RH (right hand) when viewed standing in the track gauge and facing the tips of the inside rails

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 (bayonet type).

3.1.4
hand (of half set) – expansion switch
LH half set or a RH half set when viewed standing in the track gauge and facing the toes of the expansion switch

Note 1 to entry: See 3.2.2 for definition of expansion switch.

3.1.5
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

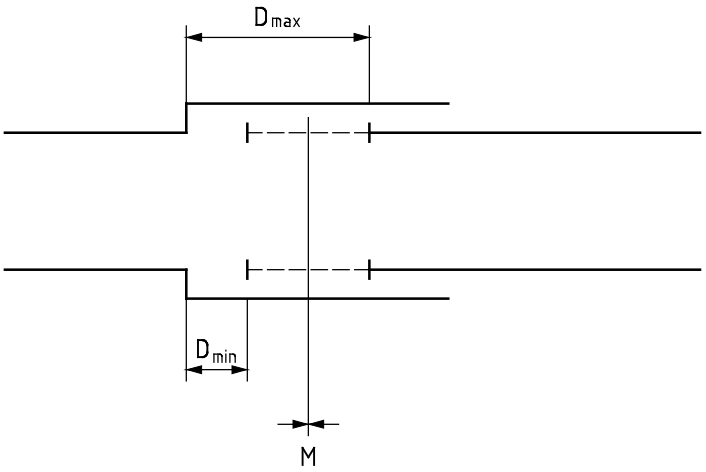
Key
D_{max} maximum gap

Figure 2 — Open position

3.1.6
relative displacement rail / support
maximum permissible relative longitudinal movement between the rail (switch or stock rail) and the corresponding support (base plate or bearer)

3.1.7
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

3.1.8
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

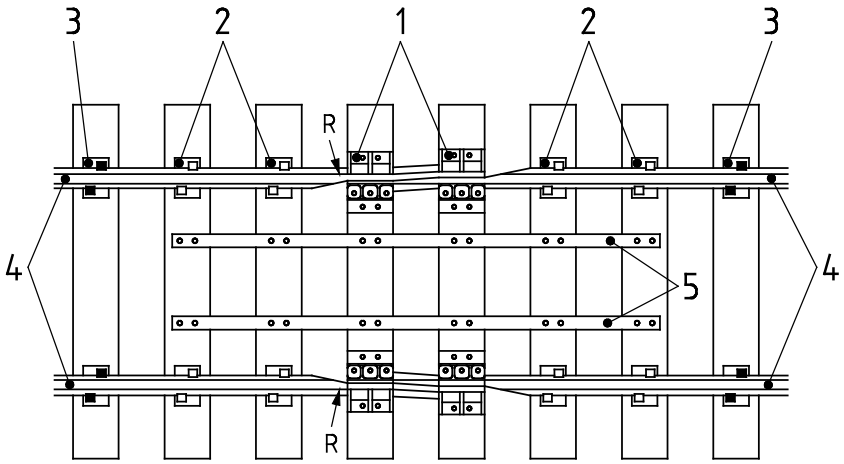
Figure 3 — Mean position

3.2 Main types of expansion devices

3.2.1
adjustment switch (bayonet type)

expansion device with interruption of the running edge

3.2.1.1
adjustment switch without check rails (both sides moveable)

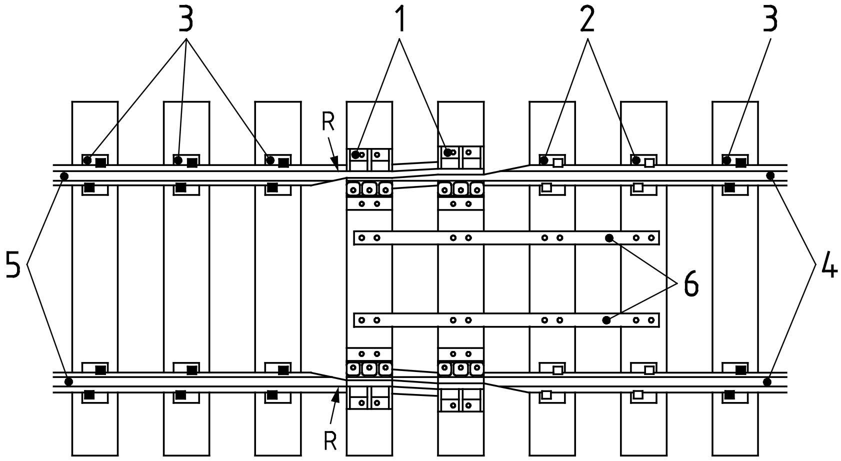


Key

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

3.2.1.2
adjustment switch without check rails (one side moveable)



Key

1 slide chair

2 low restrain fastening

3 standard fastening

4 moveable rails

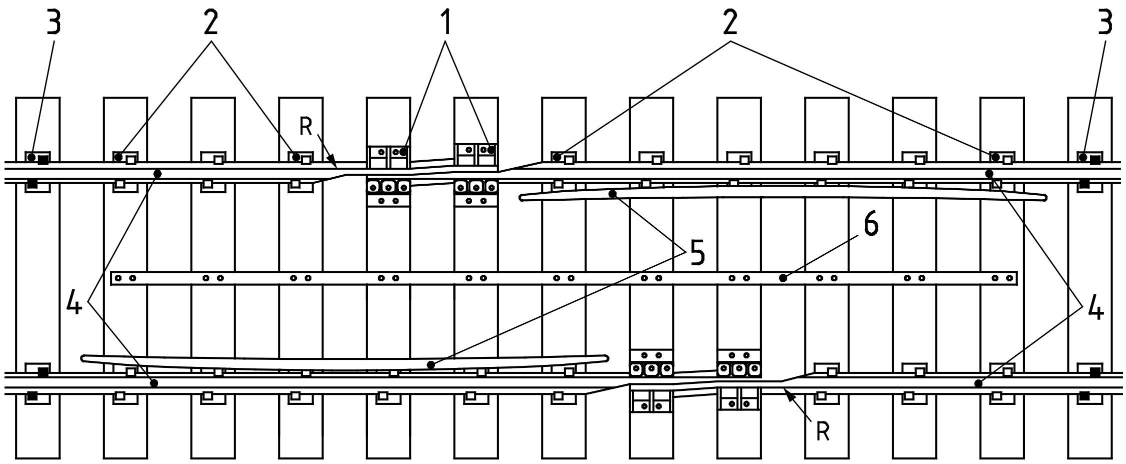
5 fixed rails

6 bearer straps

R reference point

Figure 5 — Adjustment switch – One side moveable

3.2.1.3
adjustment switch with check rails (both sides moveable)

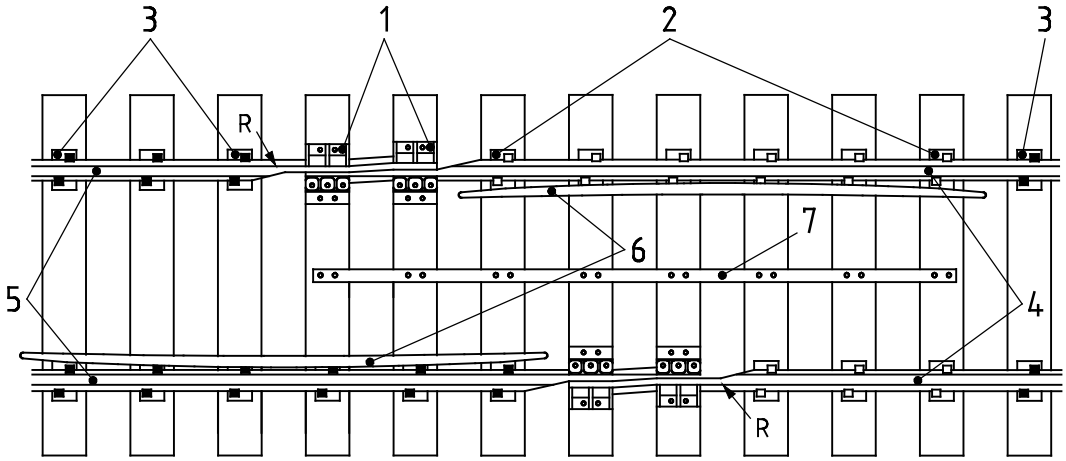


Key

1 slide chair
2 low restrain fastening
3 standard fastening
4 moveable rails
5 check rails
6 bearer strap
R reference point

Figure 6 — Adjustment switch with check rails – Both sides moveable

3.2.1.4
adjustment switch with check rails (one side moveable)



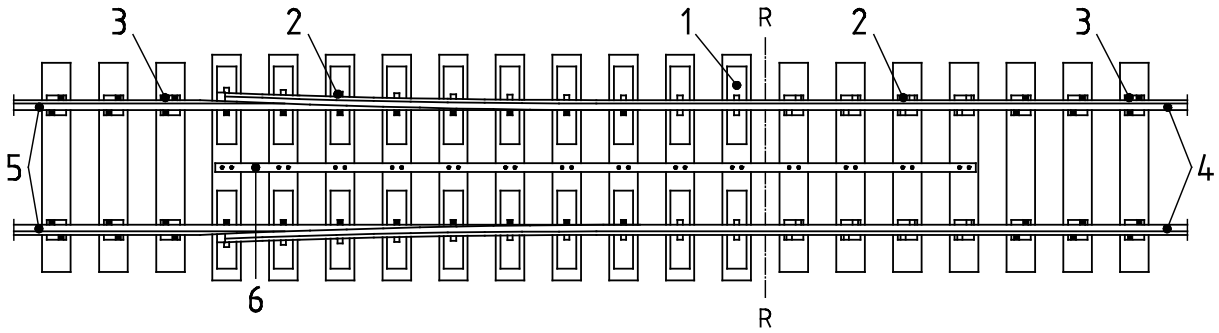
Key

1	slide chair	5	fixed rails
2	low restrain fastening	6	check rails
3	standard fastening	7	bearer strap
4	moveable rails	R	reference point

Figure 7 — Adjustment switch with check rails – One side moveable

3.2.2
expansion switch
expansion device without interruption of the running edge

3.2.2.1
expansion switch with moveable stock rails

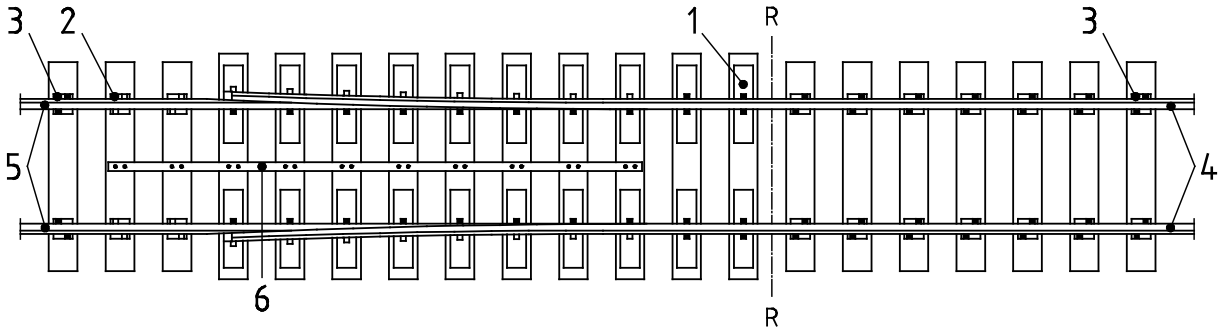


Key

1	slide chair	5	fixed switch rails
2	low restrain fastening	6	bearer strap
3	standard fastening	R	reference point
4	moveable stock rails		

Figure 8 — Expansion switch – Moveable stock rails

3.2.2.2
expansion switch with moveable switch rails

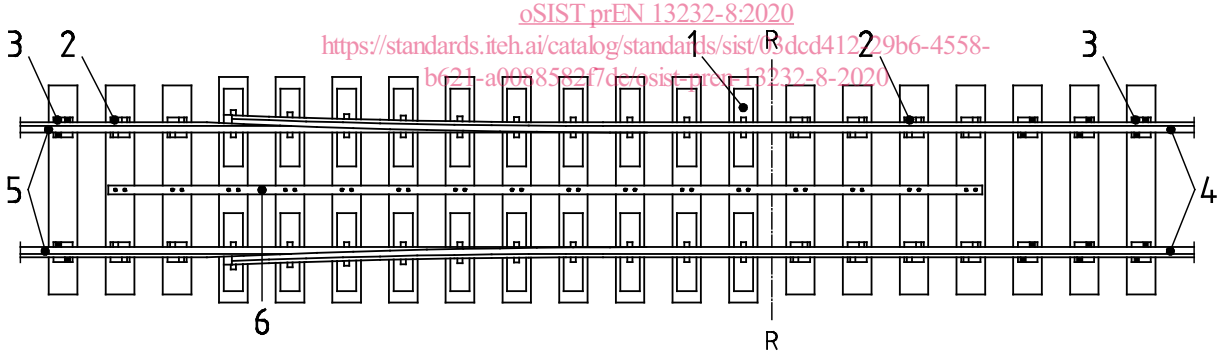


Key

1	slide chair	5	moveable switch rails
2	low restrain fastening	6	bearer strap
3	standard fastening	R	reference point
4	fixed stock rails		

Figure 9 — Expansion switch – Moveable switch rails

3.2.2.3
expansion switch both sides moveable



Key

1	slide chair	5	moveable switch rails
2	low restrain fastening	6	bearer strap
3	standard fastening	R	reference point
4	moveable stock rails		

Figure 10 — Expansion switch – Both sides moveable