SLOVENSKI STANDARD
SIST EN 13232-8:2007+A1:2012

01-januar-2012

Železniške naprave - Zgornji ustroj - Kretnice in križišča - 8. del: Dilatacijske naprave

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

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

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

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ICS:

45.080	Tračnice in železniški deli	Rails and railway components

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

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

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

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

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Foreword

This document (EN 13232-8:2007+A1:2011) 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of an identical text or by endorsement, at the latest by April 2012, and conflicting national standards shall be withdrawn at the latest by April 2012.

〈A1〉 This document has been prepared under a mandate given to CEN/CENELEC/ETSI by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive 2008/57/EC.

For relationship with EU Directive 2008/57/EC, see informative Annex ZA, which is an integral part of this document. 〈A1〉

This document includes Amendment 1, approved by CEN on 2011-09-13.

This document supersedes EN 13232-8:2007.

The start and finish of text introduced or altered by amendment is indicated in the text by tags 〈A1〉 〈A1〉.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This series of standards “*Railway applications — Track — Switches and crossings*” 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 the standard. Parts 2 to 4 contain basic design guides and are applicable to all switch and crossing assemblies. The latter parts, from 5 onwards, deal with particular types of equipment, including their tolerances. Part 9 defines the functional and geometric dimensions and tolerances for layout assemblies. These use Parts 1 to 4 as a basis.

The following terms are used within to define the parties involved in using the EN as the technical basis for a transaction:

Customer	The Operator or User of the equipment, or the Purchaser of the equipment on the User's behalf.
Supplier	The body responsible for the use of the EN in response to the Customer's requirements.

According to the CEN/CENELEC Internal Regulations, the national standards organizations 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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Introduction

An expansion device is a device which permit 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 part of EN 13232 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 and traced.

2 Normative references

The following referenced documents are indispensable for the application 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*

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

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

EN 13232-9, *Railway applications — Track — Switches and crossings — 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.

3.1 General definitions

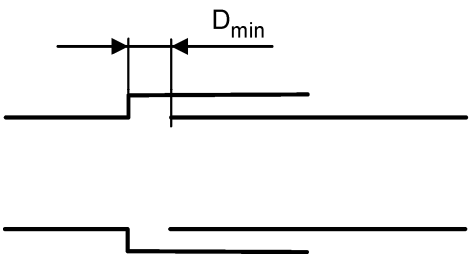
3.1.1
hand (of half set) – adjustment switch (bayonet type)
LH (left hand) half set or RH (right hand) when viewed standing in the track gauge and facing the tips of the inside rails.

With check rails, there may be two LH or two RH half sets, see Figure 6, or opposite hand half sets

3.1.2
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

3.1.3
expansion capacity C
maximum permissible relative longitudinal movement between the two rails, where:

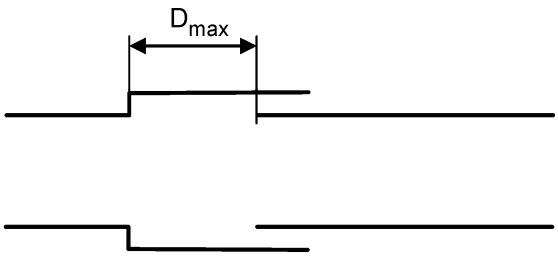
$$C = D_{max} - D_{min}$$



Key

D_{min} minimum gap

Figure 1 — Closed position



Key

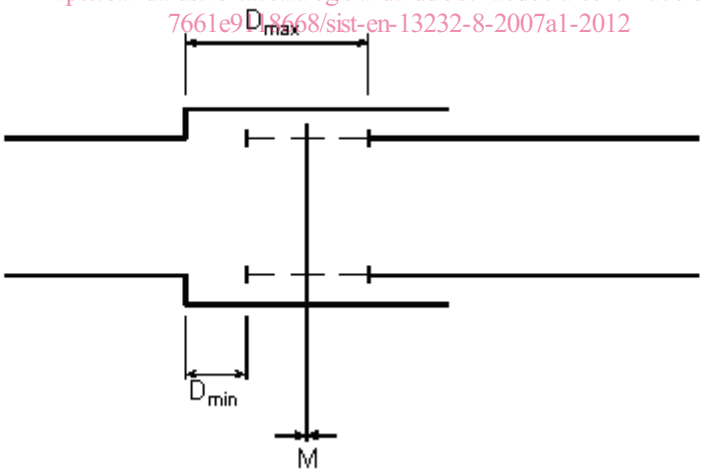
D_{max} maximum gap

Figure 2 — Open position

3.1.4
relative displacement rail / support
maximum permissible relative longitudinal movement between the rail (switch or stock rail) and the corresponding support (base plate or bearer)

3.1.5
mean position
position where the expansion capacity and the relative displacement of rails are half way, and the bearers are in their nominal position

3.1.6
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



$$M = \frac{D_{max} - D_{min}}{2}$$

Key

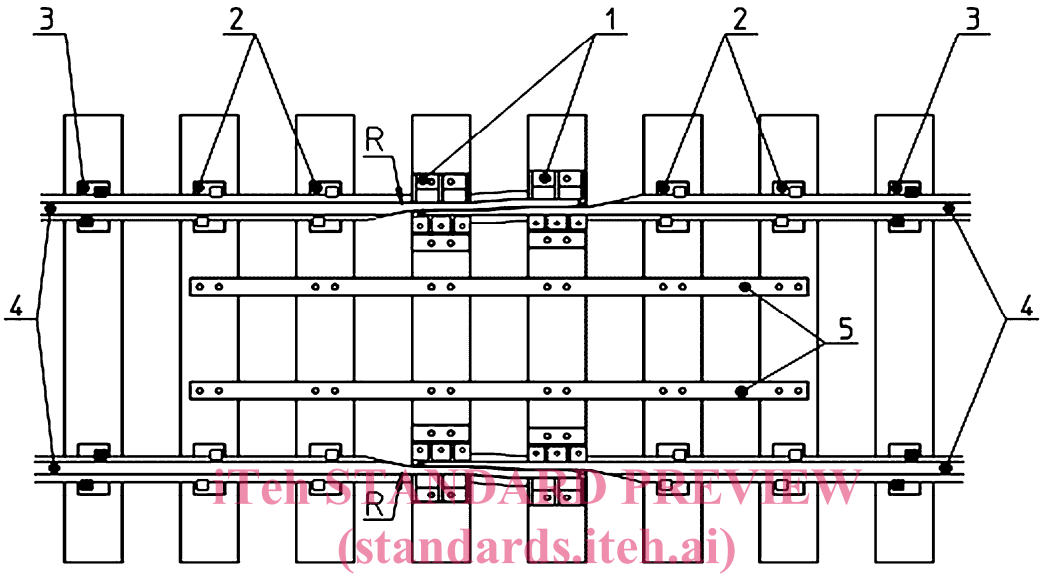
D_{min} minimum gap
D_{max} maximum gap
M mean position

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)

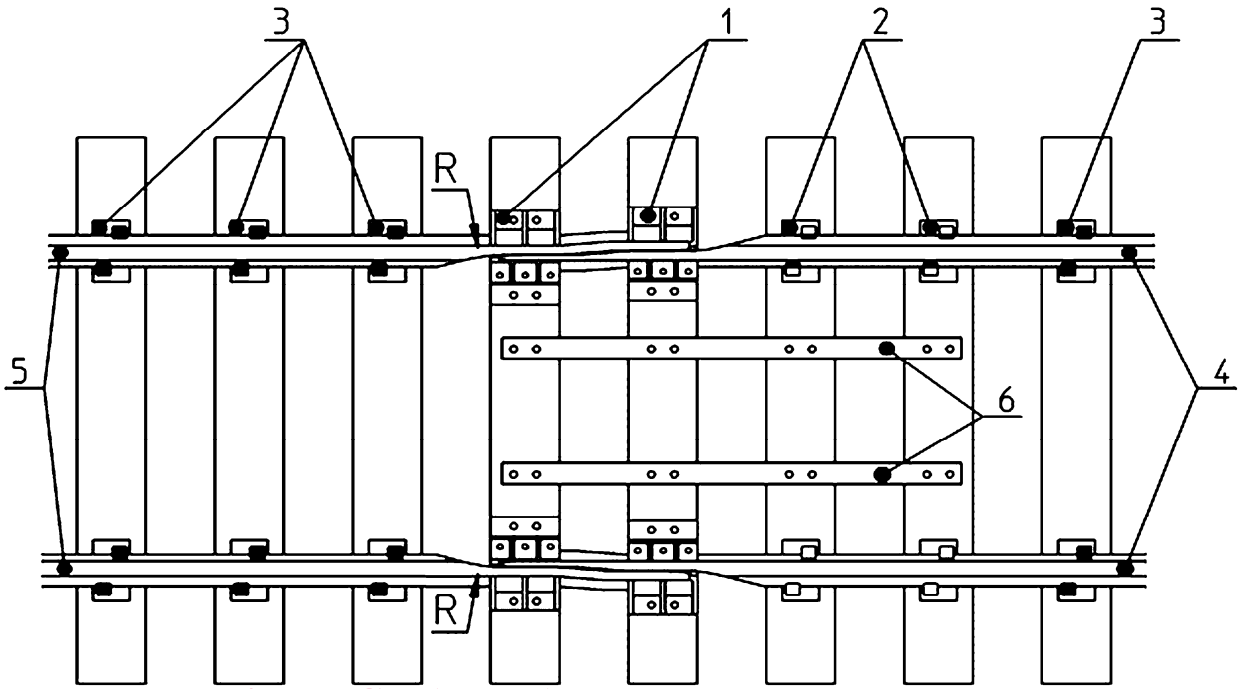


Key

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)

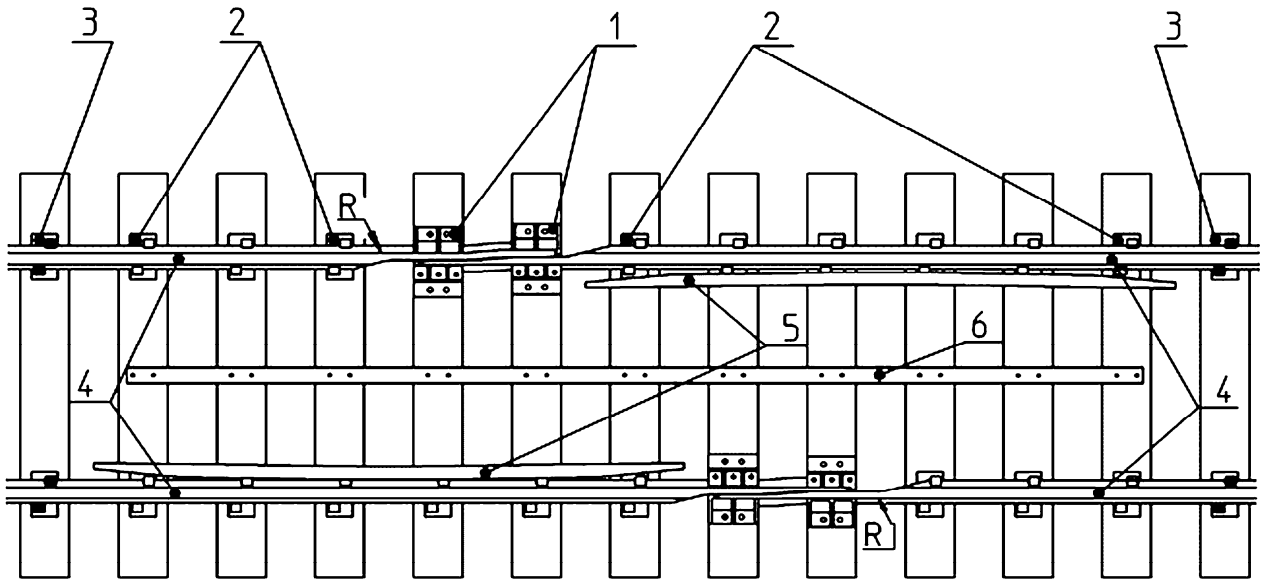


Key

1	slide chair	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

3.2.1.3 Adjustment switch with check rails (both sides moveable)



Key

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

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