



SLOVENSKI STANDARD
oSIST prEN 13232-5:2020

01-marec-2020

Železniške naprave - Zgornji ustroj proge - Kretnice in križišča za Vignolove tirnice
- 5. del: Kretniška menjala

Railway applications - Track - Switches and crossings for Vignole rails - Part 5: Switches

Bahnanwendungen - Oberbau - Weichen und Kreuzungen für Vignolschienen - Teil 5:
Zungenvorrichtungen

Applications ferroviaires - Infrastructure - Appareils de voie - Partie 5: Aiguillages

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Ta slovenski standard je istoveten z: prEN 13232-5

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ICS:

45.080	Tračnice in železniški deli	Rails and railway components
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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

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prEN 13232-5

January 2020

ICS 93.100

Will supersede EN 13232-5:2005+A1:2011

English Version

Railway applications - Track - Switches and crossings for Vignole rails - Part 5: Switches

Applications ferroviaires - Infrastructure - Appareils de
voie - Partie 5: Aiguillages

Bahnanwendungen - Oberbau - Weichen und
Kreuzungen für Vignolschienen - Teil 5:
Zungenvorrichtungen

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

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

This draft European Standard was established by CEN in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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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 13232-5:2020) 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 13232-5:2005+A1:2011.

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 2016/797/EU.

For relationship with EU Directive 2016/797/EU, see informative Annex ZA, which is an integral part of this document.

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-geometric acceptance criteria for the inspection of layouts.

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Introduction

This document concerns switches, whose purpose is to cause a vehicle to transfer from one track to the other track of a turnout, either in the facing or trailing direction.

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1 Scope

The scope of this document is to:

- establish a working definition for switches and their constituent parts and identify the main types;
- specify the minimum requirements for the manufacture of the switches and/or constituent parts;
- specify codes of practice for inspection and manufacturing tolerances of both full and half sets of switches and their constituent parts;
- establish the limits and scope of supply;
- list the methods by which switches and their parts should be identified and traced;
- list the different and varying ways by which switches can be described using the following parameters:
 - geometry of the switches;
 - types of construction;
 - performance requirements;
 - design criteria;
 - tolerances and inspection.

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2 Normative references

[oSIST prEN 13232-5:2020](https://standards.iteh.ai/catalog/standards/sist/4837ab89-106f-4ab3-a8c5-2b865e49c61b/osist-pren-13232-5-2020)

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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.

prEN 13232-1:2020, *Railway applications – Track – Switches and crossings for Vignole rails – Part 1: Definitions*

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 13232-4:2020, *Railway applications – Track – Switches and crossings for Vignole rails – Part 4: Actuation, locking and detection*

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

EN 13674-2:2006+A1:2010, *Railway applications – Track – Rail - Part 2: Switch and crossing rails used in conjunction with Vignole railway rails 46 kg/m and above*

EN 13674-3:2006+A1:2010, *Railway applications – Track – Rail - Part 3: Check rails*

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EN 13674-4:2019, *Railway applications – Track – Rail - Part 4: Vignole railway rails from 27 kg/m to, but excluding 46 kg/m*

EN 13803:2017, *Railway applications - Track - Track alignment design parameters - Track gauges 1 435 mm and wider*

3 Terms and definitions

For the purpose of this document the terms and definitions given in prEN 13232-1:2020 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**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

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3.2 Construction

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3.2.1**flexible switch**

switch rail, the toe of which is moved by flexing about a fixed heel, the flexing part being made of one profile only

Note 1 to entry: The switch rail can be either standard rail profile or switch rail profile. If a transition from a switch rail profile to a standard rail profile is required, this takes place in the fixed part of the switch rail. In case of a weld, the weld is also located in the fixed part of the switch rail (see Figure 1).

3.2.2**spring rail switches**

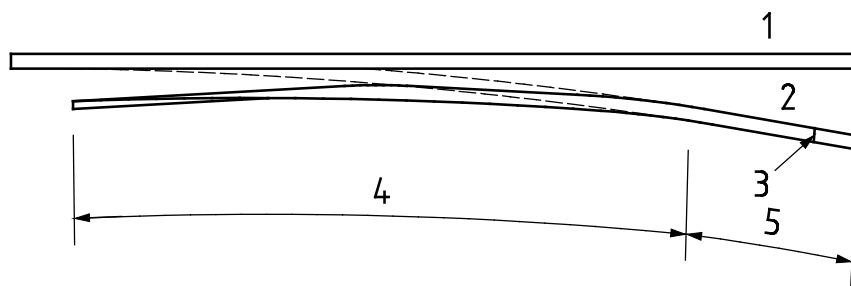
switch rail, the toe of which is moved by flexing about a fixed heel, the flexing part being made of two different profiles

Note 1 to entry: The transition and the weld between one profile and the other takes place in the movable part of the switch rail. This weld is secured by fishplating (see Figure 2).

3.2.3**loose-heel switch****pivot-articulated switch**

rigid switch rail which pivots about its heel (see Figure 3)

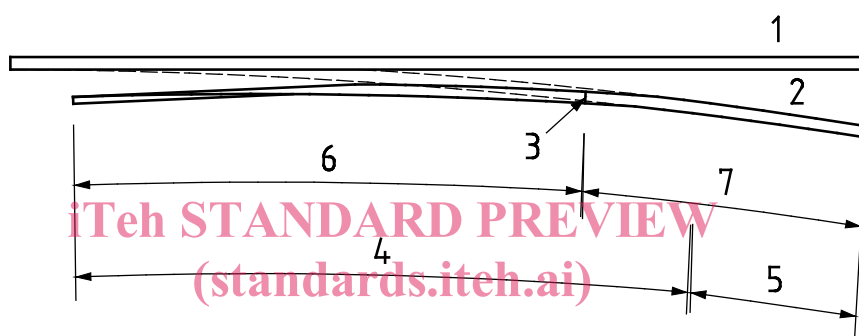
Note 1 to entry: The variations from these basic forms are:



Key

- | | |
|---------------|------------|
| 1 Stock rail | 4 Moveable |
| 2 Switch rail | 5 Fixed |
| 3 Weld | |

Figure 1 — Half set of flexible switches

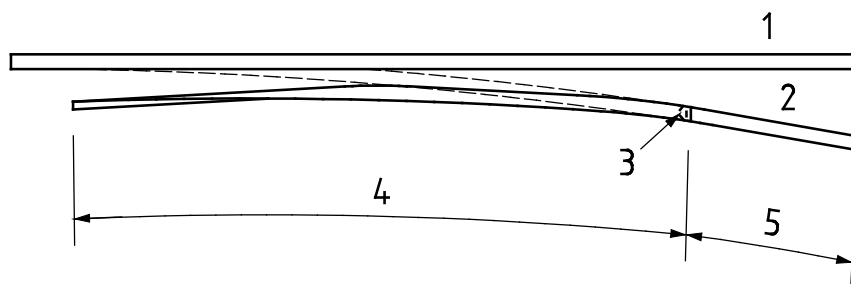


Key

- | | |
|---------------|-------------------------|
| 1 Stock rail | 5 Fixed |
| 2 Switch rail | 6 Switch rail profile |
| 3 Weld | 7 Standard rail profile |
| 4 Moveable | |

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Figure 2 — Half set of spring switches



Key

- | | |
|---------------|------------|
| 1 Stock rail | 4 Moveable |
| 2 Switch rail | 5 Fixed |
| 3 Pivot | |

Figure 3 — Half set of loose heel switches

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3.3 Rail joints

3.3.1

switch rail joint

joint at the heel end of the switch rail

3.3.2

stock rail joint

joint at the switch heel end of the stock rail

3.3.3

stock front joint

joint at the switch toe end of the stock rail

3.4 Handing and sets of switches

3.4.1

set of switches

arrangement of two half sets of switches, one right hand, the other left hand, usually including fittings such as studs/distance blocks (Figure 7, item 11) and blocks or heel blocks (Figure 7, item 9)

Note 1 to entry: They may be diverging right hand (Figure 4), diverging left hand (Figure 5) or equal split or symmetrical (Figure 6).



Figure 4 — Right hand



Figure 5 — Left hand



Figure 6 — Symmetrical

3.4.2**half-set of switches**

consists of one stock rail and its switch rail complete with small fittings

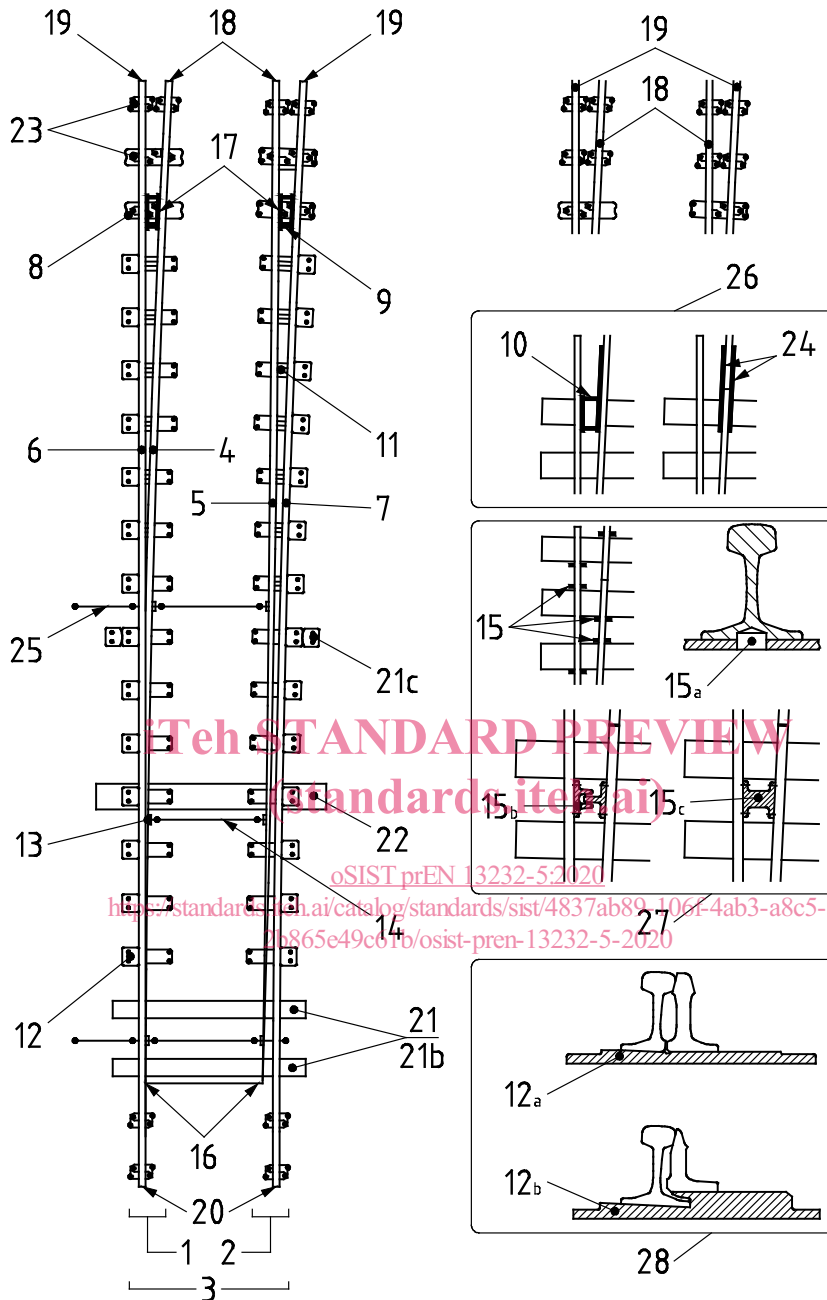
Note 1 to entry: It is right or left hand as seen by an observer in the centre of the track facing the switch heel from the switch toe

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3.5 Parts of switch panel



Key

1 Left hand half set of switches	11 Stud/distance block	21 Soleplate
2 Right hand half set of switches	12 Slide baseplate	21b Gauge plate
3 Set of switches	13 Stretcher bar bracket	21c Special stop
4 Left hand switch rail	14 Stretcher bar	22 Bearers
5 Right hand switch rail	15 Anti-creep device	23 Baseplate
6 Left hand stock rail	16 Switch toe/tip	24 Fishplate (joint bar)
7 Right hand stock rail	17 Switch heel	25 Drive rod
8 Heel baseplate	18 Switch rail joint	26 Example of alternative rail joint position
9 Block or heel block	19 Stock rail joint	27 Example of alternative switch heel arrangements
10 Fishplate block	20 Stock front joint	28 Example of slideplates

Figure 7 — Parts of switch panel