



SLOVENSKI STANDARD
SIST EN 13232-6:2023

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**Železniške naprave - Zgornji ustroj proge - Kretnice in križišča za Vignolove tirnice
- 6. del: Kretniška srca**

Railway applications - Track - Switches and crossings for Vignole rails - Part 6: Fixed common and obtuse crossings

Bahnanwendungen - Oberbau - Weichen und Kreuzungen für Vignolschienen - Teil 6: Starre einfache und doppelte Herzstücke

Applications ferroviaires - Infrastructure - Appareils de voie - Partie 6: Curs de croisement et de traversée à pointes fixes

Ta slovenski standard je istoveten z: EN 13232-6:2023

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45.080	Tračnice in železniški deli	Rails and railway components
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Railway applications - Track - Switches and crossings for Vignole rails - Part 6: Fixed common and obtuse crossings

Applications ferroviaires - Voie - Appareils de voie
pour rails Vignole - Partie 6 : Cœurs de croisement et
de traversée à pointes fixes

Bahnanwendungen - Oberbau - Weichen und
Kreuzungen für Vignolschienen - Teil 6: Starre einfache
und doppelte Herzstücke

This European Standard was approved by CEN on 23 October 2022.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists 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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COMITÉ EUROPÉEN DE NORMALISATION
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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 13232-6:2023) 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 13232-6:2005+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-geometric acceptance criteria for inspection of layouts.

The changes introduced in this document bring further detail and clarity to the requirements and a number of the figures, the structure of the document is largely unchanged from the previous revision.

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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1 Scope

This document:

- establishes a working terminology for fixed crossings and their constituent parts, and identifies the main types;
- specifies the different and varying ways by which crossings can be described using the following parameters:
 - geometry of the crossing;
 - types of construction;
 - design criteria;
 - manufacturing processes;
 - tolerances and inspection.

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 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*

<https://standards.iteh.ai/catalog/standards/sist/9513f119-77f5-48f3-9805-76164684b6a7/sist-en-13232-6-2023>

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*

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

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*

EN 15689:2009, *Railway applications - Track - Switches and crossings - Crossing components made of cast austenitic manganese steel*

EN 13481-1:2012, *Railway applications - Track - Performance requirements for fastening systems - Part 1: Definitions*

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EN 13481-2:2022, *Railway applications - Track - Performance requirements for fastening systems - Part 2: Fastening systems for concrete sleepers*

EN 13481-3:2022, *Railway applications - Track - Performance requirements for fastening systems - Part 3: Fastening systems for wood sleepers*

EN 13481-4:2022, *Railway applications - Track - Performance requirements for fastening systems - Part 4: Fastening systems for steel sleepers*

EN 13481-5:2022, *Railway applications - Track - Performance requirements for fastening systems - Part 5: Fastening systems for slab track with rail on the surface or rail embedded in a channel*

EN 13481-7:2022, *Railway applications - Track - Performance requirements for fastening systems - Part 7: Special fastening systems for switches and crossings and check rails*

EN 13230-1:2016, *Railway applications - Track - Concrete sleepers and bearers - Part 1: General requirements*

EN 13230-2:2016, *Railway applications - Track - Concrete sleepers and bearers - Part 2: Prestressed monoblock sleepers*

EN 13230-3:2016, *Railway applications - Track - Concrete sleepers and bearers - Part 3: Twin-block reinforced sleepers*

EN 13230-4:2016+A1:2020, *Railway applications - Track - Concrete sleepers and bearers - Part 4: Prestressed bearers for switches and crossings*

EN 13230-5:2016, *Railway applications - Track - Concrete sleepers and bearers - Part 5: Special elements*

EN 13230-6:2020, *Railway applications - Track - Concrete sleepers and bearers - Part 6: Design*

3 Terms and definitions

For the purpose of this document the terms and definitions given in EN 13232-1:2023 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 Types of crossings**3.1.1****common crossing**

element in switch and crossing work where the intersecting running rails cross one another at an acute angle

Note 1 to entry: see Figures 1 and 2, see also Figure 3 for the parts of a common crossing.

3.1.2**straight common crossing**

common crossing where both the through route and turnout route is straight

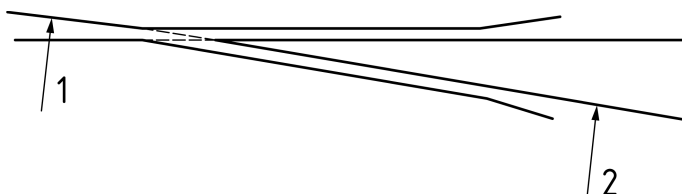
Note 1 to entry: see Figure 1

3.1.3**curved common crossing**

common crossing with a curved diverging route; designated as ordinary or double junction type depending on the direction of curvature

3.1.3.1**ordinary**

common crossing with diverging route curved to radius R as shown in Figure 1

**Key**

- 1 Radius R
- 2 Radius R or straight

Figure 1 — Common crossing

3.1.3.2**double junction type**

common crossing with diverging route curved to radius R as shown in Figure 2

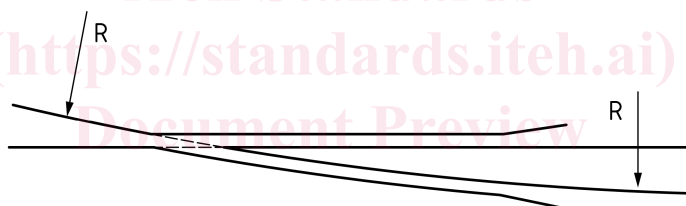


Figure 2 — Common crossing, double junction type

3.1.3.3**non-standard**

common crossing with other forms of curvature

3.1.4**obtuse crossing**

crossing in which the angle subtended at the theoretical intersection point (IP) is greater than 90°

3.1.4.1**set of obtuse crossings**

pair of obtuse crossings placed such that the routes are a distance apart equal to track gauge

3.2 Rail joints**3.2.1****vee leg**

extension of the vee of a crossing in standard rail profile

EN 13232-6:2023 (E)**3.2.2****wing front**

extension of the wing of a crossing in standard rail profile

3.3 Parts of crossings**3.3.1****vee**

parts of the crossing forming the shape of a letter "V" which forms support to the wheels

3.3.2**transfer area**

area over which the wheel transfers its load from one running surface to another

3.3.3**heel of crossing**

physical end of the common crossing vee at its open end

3.3.4**apron**

plate between two rail sections at wing front or vee end

3.3.5**wing wheel riser**

raised part of the wing rail to lift the wheel over the crossing nose

3.3.6**back of wheel ramp**

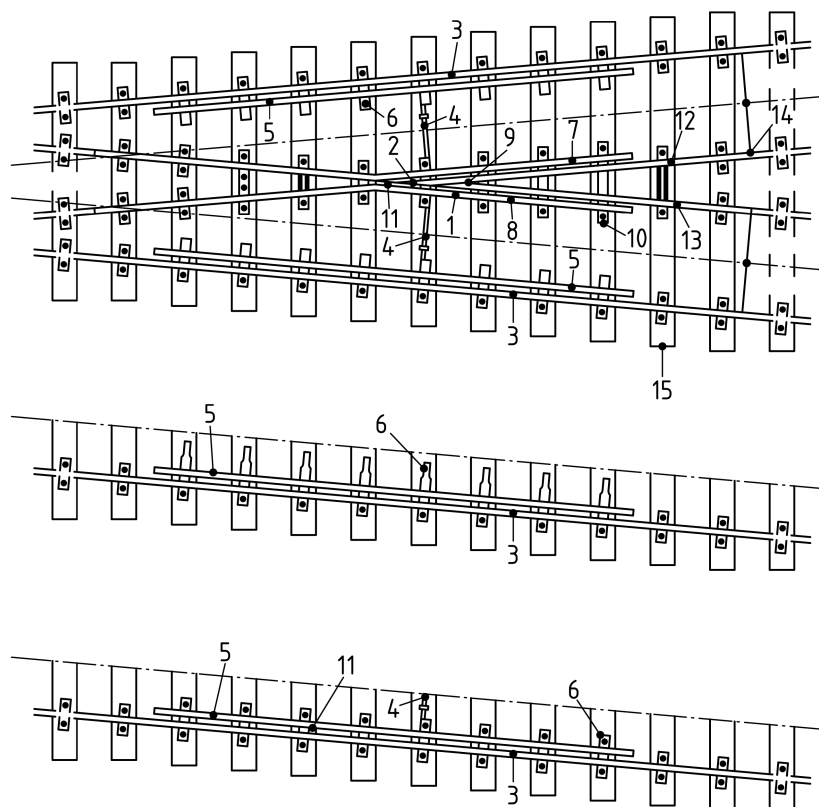
ramp provided to accommodate worn wheels from causing undue damage to the crossing

3.3.7**wing entry ramp**

ramp provided to accommodate worn wheels from causing undue damage to the crossing when a vehicle is travelling towards the nose from the heel, i.e. trailing

3.3.8**point rail**

rail in a built-up crossing which when machined forms the crossing nose

**Key**

- | | |
|--------------------------|-----------------------|
| 1 Common crossing | 9 Crossing vee |
| 2 Crossing nose | 10 Crossing baseplate |
| 3 Outside rail | 11 Block |
| 4 Check rail strut | 12 Point rail |
| 5 Check rail | 13 Splice rail |
| 6 Check rail support | 14 Heel of crossing |
| 7 Left hand wing (rail) | 15 Bearers |
| 8 Right hand wing (rail) | |

Figure 3 — Parts of common crossing panel**3.3.9****splice rail**

rail in a built-up crossing which is spliced into the point rail, forming the crossing vee

Note 1 to entry: The crossing is described as “left hand splice” or “right hand splice” depending on the splice position when the observer is facing the nose from the wing front.

3.3.10**wing or wing rail**

outer part of the common crossing which supports and guides the wheels across the flangeway gap

3.3.10.1**left hand wing**

wing to the left hand side of the crossing nose when facing the nose from the wing front