



**SLOVENSKI STANDARD**  
**oSIST prEN 13232-6:2020**

**01-marec-2020**

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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

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**Ta slovenski standard je istoveten z: prEN 13232-6**

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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

**DRAFT**  
**prEN 13232-6**

January 2020

ICS 93.100

Will supersede EN 13232-6:2005+A1:2011

English Version

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

Applications ferroviaires - Infrastructure - Appareils de  
voie - 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 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.

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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 13232-6:2020) 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 13232-6:2005+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 inspection of layouts.

**prEN 13232-6:2020 (E)****1 Scope**

The scope of this document is to:

- establish a working terminology for fixed crossings and their constituent parts, and identify the main types;
- specify 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.

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*

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*

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*

### 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

#### 3.2 Types of crossings

##### 3.2.1

##### **common crossing**

crossing as shown in Figures 1 and 2

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##### 3.2.2

##### **straight common crossing**

common crossing with both routes straight (see Figure 1)

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##### 3.2.3

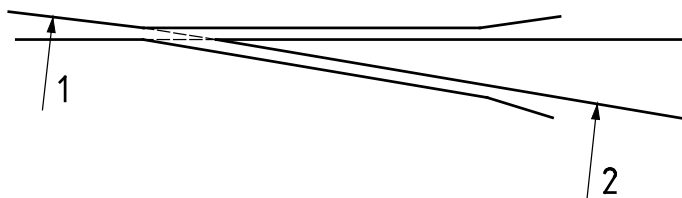
##### **curved common crossing**

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

##### 3.2.3.1

##### **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**

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## 3.2.3.2

**double junction type**

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

## 3.2.3.3

**non-standard**

common crossing with other forms of curvature

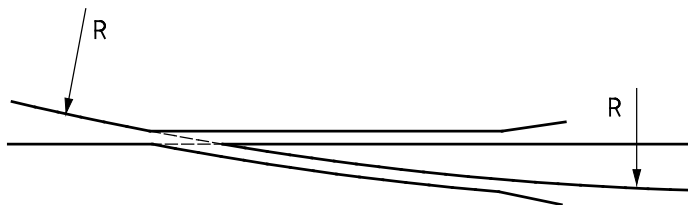


Figure 2 — Common crossing, double junction type

## 3.2.4

**obtuse crossing**

crossing in which the angle subtended at the IP is greater than  $90^\circ$

## 3.2.4.1

**set of obtuse crossings**

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

## 3.3 Rail joints

## 3.3.1

**vee leg**

extension of the vee of a crossing in standard rail profile

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## 3.3.2

**wing front**

extension of the wing of a crossing in standard rail profile

## 3.4 Parts of crossings

## 3.4.1

**common crossing panel**

see Figure 3

## 3.4.2

**common crossing panel parts**

## 3.4.2.1

**vee**

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

## 3.4.2.2

**nose**

point at which the vee commences, at the level of the gauge reference plane. See also 3.5.1.5

## 3.4.2.3

**transfer area**

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



**3.4.2.4****heel of crossing**

physical end of the common crossing vee at its open end

**3.4.2.5****apron**

plate between two rail sections at wing front or vee end

**3.4.2.6****wing wheel riser**

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

**3.4.2.7****back of wheel ramp**

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

**3.4.2.8****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

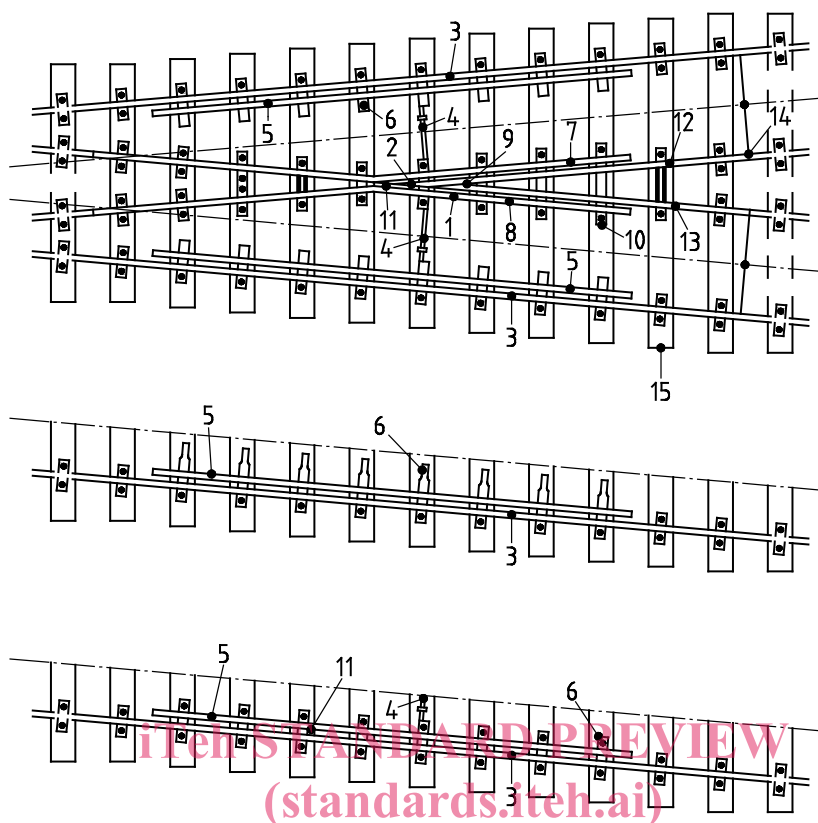
**3.4.2.9****point rail**

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

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**Key**

1 Common crossing	9 Crossing vee	<a href="https://standards.iteh.ai/catalog/standards/sist/9513f119-77f5-48f3-9805-6a7/osist-pren-13232-6-2020">oSIST prEN 13232-6:2020 https://standards.iteh.ai/catalog/standards/sist/9513f119-77f5-48f3-9805-6a7/osist-pren-13232-6-2020</a>
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****3.4.2.10  
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.

**3.4.2.11  
wing or wing rail**

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

**3.4.2.11.1****left hand wing**

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

**3.4.2.11.2****right hand wing**

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

**3.4.2.12****outside rail**

running rail opposite the crossing at a distance of track gauge away

**3.4.2.13****check or check rail**

special section bar ensuring (by guidance of the wheel) the safe passage of the axle opposite the neck gap of the common crossing

**3.4.2.13.1****check rail strut**

part joining the common crossing to the check rail ensuring the maintenance of the correct position of the check rail relative to the crossing nose

**3.4.2.13.2****check rail support**

part supporting the check rail

**3.4.2.14****vee block**

block between the vee rails or the point and splice rails in a built-up crossing towards the heel end of the crossing

**3.4.2.15****throat block****neck block**

block between the wing rails at the throat position

**3.4.2.16****wing front block**

block between the two wing rails in front of the throat

**3.4.2.17****flangeway block**

block between the wing rails and vee forming the flangeway

**3.4.2.18****block bolts or fasteners**

mechanical device used to clamp blocks in position

**3.4.2.19****web washer**

washer used to give a flat suitable face for the bolt or fastener head and nut

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## 3.4.2.20

**fishing recess**

recess in the rail or casting profile to permit the use of fishplates to form a joint

## 3.4.2.21

**fishbolt hole**

hole to permit the use of bolts when clamping rail joints using fishplates

## 3.4.2.22

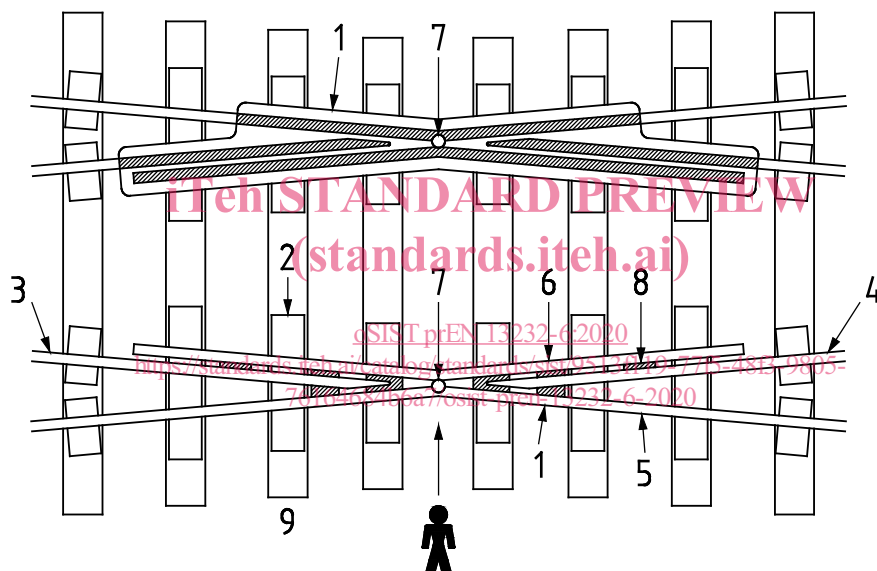
**bonding**

provision for the use of an electrical connection to the crossing for track circuitry

## 3.4.3

**obtuse crossing panel**

arrangement in a layout that ensures the continuity of two routes, the corresponding running edges of which intersect, and consisting of two obtuse crossings, complete with small fittings, and assembled together usually with bearers. It is the central part of a diamond crossing

**Key**

- |   |                           |   |              |
|---|---------------------------|---|--------------|
| 1 | Obtuse crossing           | 6 | Check (rail) |
| 2 | Obtuse crossing baseplate | 7 | Knuckle      |
| 3 | Left hand point (rail)    | 8 | Block        |
| 4 | Right hand point (rail)   | 9 | Bearer       |
| 5 | Wing (rail)               |   |              |

**Figure 4 — Parts of obtuse crossing panel**

Note 1 to entry: For an observer placed on the axis of symmetry of the obtuse crossing facing the wing rail from outside the track (direction of the arrow) - all components to the left are “left hand”, all the components to the right are “right hand”. See Figure 4.