



SLOVENSKI STANDARD
oSIST prEN 13232-6:2014
01-julij-2014

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 - Voie - Appareils de voie - Partie 6: Coeurs de croisement et de traversée à pointes fixes

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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 rev

June 2014

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 - Voie - Appareils de voie - Partie
6: Cœurs de croisement et de traversée à pointes fixes

Bahnwendungen - 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

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Foreword

This document (prEN 13232-6:2014) 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 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*

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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 functional and geometric dimensions and tolerances for layout assembly.

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.

prEN 13232-6:2014 (E)

1 Scope

The scope of this European Standard 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, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 13145, *Railway applications – Track – Wood sleepers and bearers*

EN 13146 (all parts), *Railway applications – Track – Test methods for fastening systems*

EN 13230 (all parts), *Railway applications – Track – Concrete sleepers and bearers*

prEN 13232-1:2013, *Railway applications – Track – Switches and crossings for Vignole rails – Part 1: Definitions*

prEN 13232-2:2014, *Railway applications – Track – Switches and crossings for Vignole rails – Part 2: Requirements for geometric design*

prEN 13232-3:2014, *Railway applications – Track – Switches and crossings for Vignole rails – Part 3: Requirements for wheel/rail interaction*

EN 13481 (all parts), *Railway applications – Track – Performance requirements for fastening systems*

EN 13674 (all parts), *Railway applications – Track – Rail*

EN 13803-2, *Railway applications – Track alignment design parameters – Track gauges 1 435 mm and wider – Part 2: Switches and crossings and comparable alignment design situations with abrupt changes of curvature*

UIC 866-0:1985, *Technical specification for the supply of cast manganese steel crossings for switch and crossing work*

3 Terms and definitions

3.1 Types of crossings

3.1.1

common crossing

3.1.2

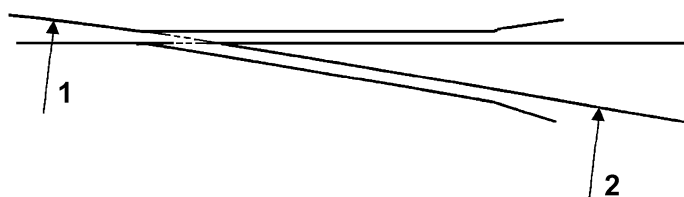
straight common crossing

3.1.3

curved common crossing

3.1.3.1

ordinary



Key

- 1 1 Radius R
- 2 R or STR

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Figure 1
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3.1.3.2

double junction type

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Figure 2

3.1.3.3

non-standard

3.1.4

obtuse crossing

3.1.4.1

set of obtuse crossings

3.2 Rail joints

3.2.1

vee leg

3.2.2

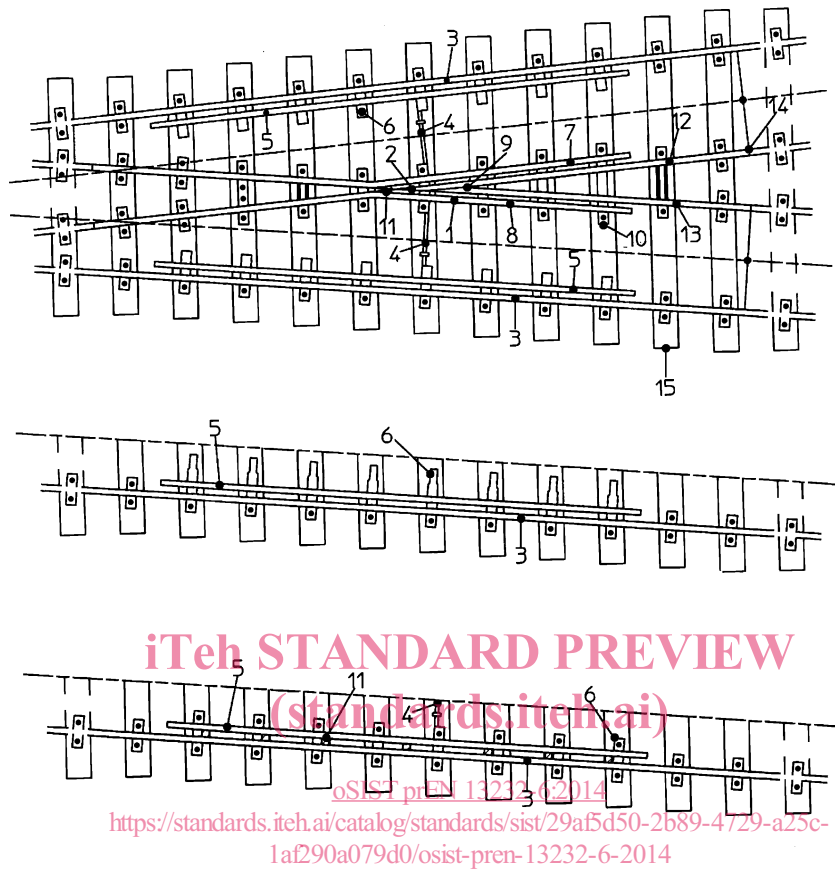
wing front

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3.3 Parts of crossings

3.3.1

common crossing panel



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

3.3.2 Common crossing panel parts

3.3.2.1

vee

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

3.3.2.2

nose

point at which the vee commences, at the level of the gauge reference plane. See also 3.4.1.6

3.3.2.3**transfer area**

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

3.3.2.4**heel of crossing**

physical end of the common crossing vee at its open end

3.3.2.5**apron**

plate between two rail sections at wing front or vee end

3.3.2.6**wing wheel risers (if required)**

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

3.3.2.7**back of wheel ramp**

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

3.3.2.8**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

3.3.2.9**point rail**

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

3.3.2.10**splice rail**

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

3.3.2.11**wings or wing rails**

outer parts of the common crossing which support and guide the wheels across the flangeway gap

3.3.2.11.1**left hand wing**

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

3.3.2.11.2**right hand wing**

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

3.3.2.12**outside rails**

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

3.3.2.13**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

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3.3.2.13.1**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

3.3.2.13.2**check rail support**

part supporting the check rail

3.3.2.14**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

3.3.2.15**throat block****neck block**

block between the wing rails at the throat position

3.3.2.16**wing front block**

block between the two wing rails in front of the throat

3.3.2.17**flangeway block**

block between the wing rails and vee forming the flangeway

3.3.2.18**block bolts or fasteners**

mechanical device used to clamp blocks in position

3.3.2.19**web washer**

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

3.3.2.20**fishling recess**

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

3.3.2.21**fishbolt hole**

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

3.3.2.22**bonding (if required)**

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

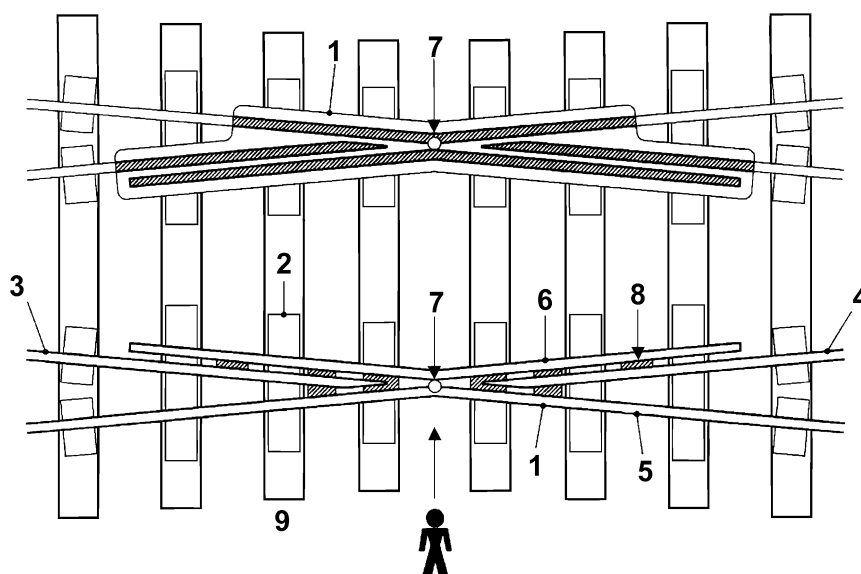
3.3.3**obtuse crossing panel**

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

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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) | | |

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Figure 4

NOTE: 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.

3.3.4 Obtuse crossing panel parts

3.3.4.1

knuckle

theoretical intersection of the running edges

3.3.4.2

nose of point rails

two parts of the crossing forming the running rail vees and supporting the wheels

3.3.4.3

wing (rail)

part of the crossing with horizontal set forming the running rail support between the point rail ends

3.3.4.4

check or check rail

part of the obtuse crossing ensuring (by guidance of the wheel) the safe passage of the axle between the obtuse point rails. This may or may not have an edge raised above the running table

prEN 13232-6:2014 (E)**3.3.4.4.1****raised check (if required)**

when the check is raised above the level of the running table to give increased guidance to the wheel when passing through the knuckle area of an obtuse crossing

3.3.4.4.2**spliced check**

check rail to provide extra guidance particularly on a sharp curvature (not shown in Figure 4)

3.3.4.4.3**spliced check rail (checked obtuse)**

extra check rail spliced into the back of the point rail to form a vee to provide additional guidance particularly on sharp curve

3.3.4.5**neck block**

block at the knuckle of the crossing

3.4 Definitions of geometry terms for crossings**3.4.1 Common crossing features**

The following terms relate to common crossings and their check (rails). See Figure 5.

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