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Železniške naprave - Zgornji ustroj proge - Kretnice in križišča za Vignolove tirnice - 1. del: Definicije

Railway applications - Track - Switches and crossings for Vignole rails - Part 1: Definitions

Bahnanwendungen - Oberbau - Weichen und Kreuzungen für Vignolschienen - Teil 1: Definitionen

Applications ferroviaires - Voie - Appareils de voie - Partie 1: Définitions

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Railway applications - Track - Switches and crossings for Vignole rails - Part 1: Definitions

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

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

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European foreword

This document (prEN 13232-1:2020) 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 13232-1:2003.

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 functional and geometric dimensions and tolerances for layout assembly.

1 Scope

This document provides an accepted “terminology” for switch and crossing work. With the assistance of diagrams, the various components are given definitions, and these specific names are regarded as obligatory.

The definitions cover the constituent parts and design geometry of switch and crossing work. Additional terminology of a more specific nature will be defined in the relevant part of the series.

The present definitions set out the terms most generally used for the geometrical form and the construction of switches and crossings, omitting those of too special a nature.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions 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/

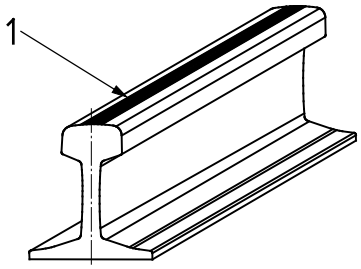
3.1 General definitions

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

3.1.3
contact area
those parts of the rail ensuring the support and/or guidance, inside or outside, of a wheel (see Figure 4)

3.1.4
running table
upper surface of the head of a rail. See Figures 1 and 4



Key

1 running table

Figure 1

3.1.5
running surface
curved surface defined by the longitudinal displacement of a straight line perpendicular to the centre-line of the track and tangential to both running tables (see Figure 2)

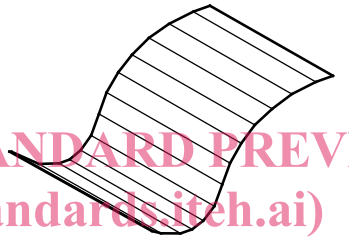
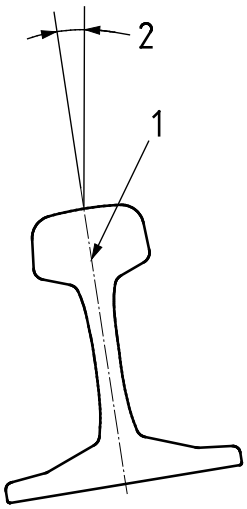


Figure 2

3.1.6
running plane
flat plane tangential to the running surface at the considered point (see Figure 4)

3.1.7
rail inclination
angle measured as a tangent (e.g. 1 in 20) between the normal to the running surface and the y-y axis of the rail. See Figure 3. Rail head inclination may be achieved by inclining the rail as shown in figure3 or by inclining the head profile only, for example by machining



Key

1 y-y-axis

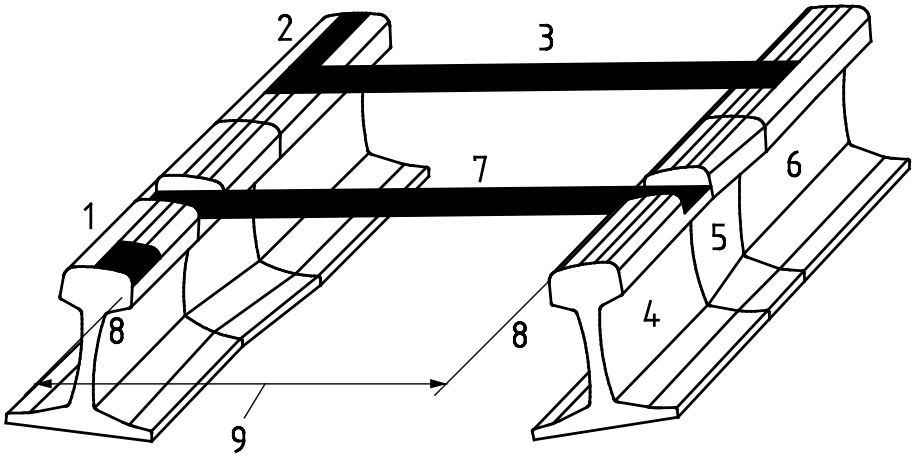
2 rail inclination

Figure 3

3.1.8
inclined track
where the axes of the two running rails are inclined inwards towards each other (see Figure 4)

3.1.9
vertical track
where the axes of the two running rails are parallel, that is, have a rail inclination of zero (see Figure 4)

3.1.10
rail twist
change in inclination of the rail (e.g. from 1 in 20 to vertical) (see Figure 4)



Key

1	contact area	6	vertical rail
2	running table	7	gauge reference plane
3	running plane	8	running edge
4	inclined rail	9	design track gauge
5	rail twist		

Figure 4

3.1.11
gauge reference plane
plane parallel to and below the running surface at a dimension "z". This dimension "z" is 14mm for interoperable railways with 1435, 1524, 1600 and 1668 mm track gauge or 13 mm for 1520 mm track gauge. This plane is used for all design work, machining, and measurements (see Figures 4 and 5)

a) **b)**

Key

z depth of gauge reference plane below running table

Figure 5

3.1.12
running edge
intersection of the gauge reference plane with the inside of the rail head (see Figure 4)

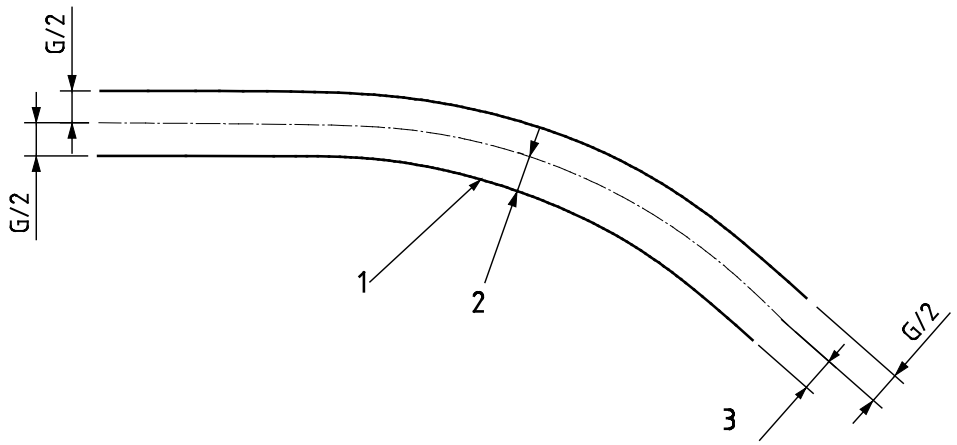
3.1.13
design track gauge
distance between the corresponding running edges of the two rails (see Figure 4)

3.1.14
centre-line of track
line midway between the running edges on straight track, and half design track gauge inside the running edge of the larger radius rail in curved track (see Figures 4 and 6)

3.1.15
high-side rail
on curved track, the rail with the larger radius, i.e. centre-line radius plus half of design track gauge

3.1.16
low-side rail
on curved track, the rail with the smaller radius

3.1.17
gauge widening
intended increase in design track gauge. The radius of the low-side rail is decreased, and the distance between the centre-line of track and the low-side rail is increased, by the amount of gauge widening (see Figure 6)



Key

1 gauge widening on sharp curves

2 A + gauge widening

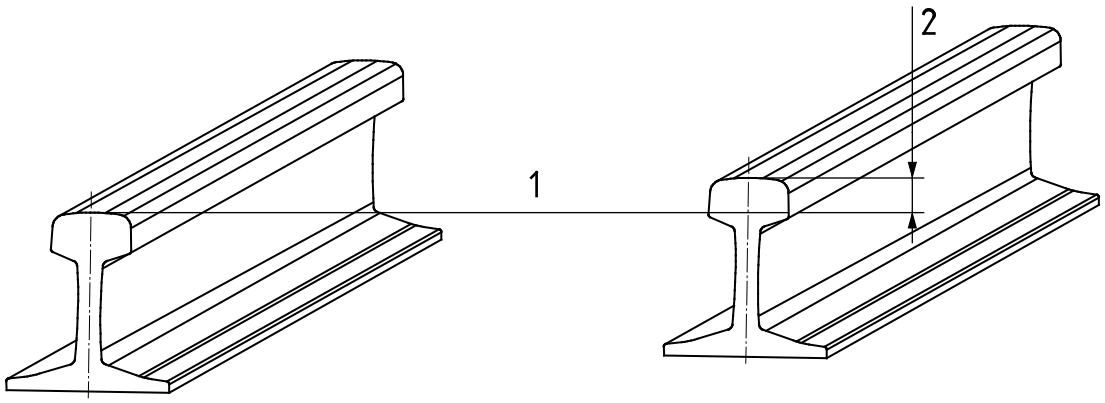
3 A + gauge widening

A design track gauge / 2

Figure 6

3.1.18
sleeper or bearer spacing
distance along the rails between the centre-lines of adjacent sleepers or bearers

3.1.19
cant (superelevation)
amount by which one running rail is raised above the other (see Figure 7)



Key

1 horizontal

2 cant (superelevation)

Figure 7

3.1.20
equilibrium cant
cant at a particular speed at which the vehicle will have a resultant force perpendicular to the running plane

3.1.21
cant deficiency
difference between the applied cant on the track and a higher equilibrium cant

3.2 Definitions of special trackwork

3.2.1
switch and crossing work
trackwork ensuring the support and guidance of a vehicle along any given route among various diverging or intersecting tracks. The term (switch and crossing work) is amplified to include certain items having other functions (for example, expansion devices)

Note 1 to entry: Switches are in some circumstances described as points - either word is considered acceptable. (English version only)

Note 2 to entry: All sketches represent the running edges. All turnouts are viewed from the switch toe.

3.2.2
switch toe
location of the end of the switch rail from which two tracks diverge

3.2.3
turnout
layout permitting the passage of rolling stock between two tracks and one common track (see Figure 8)

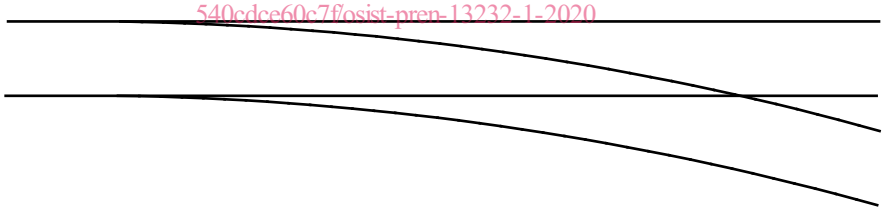


Figure 8

3.2.4
diamond crossing
layout permitting the passage of rolling stock on intersecting tracks (see Figure 9)

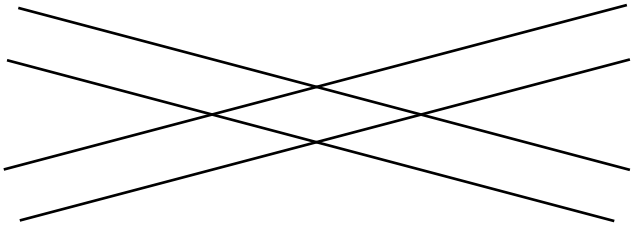


Figure 9