SLOVENSKI STANDARD
SIST EN 13232-1:2004

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Železniške naprave - Zgornji ustroj - Kretnice in križišča - 1.del: Definicije

Railway applications - Track - Switches and crossings - Part 1: Definitions

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

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

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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 Management Centre has the same status as the official versions.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

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Contents

Foreword

This document (EN 13232-1:2003) 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of an identical text or by endorsement, at the latest by February 2004, and conflicting national standards shall be withdrawn at the latest by February 2004.

This series of standards “Railway Applications – Track – Switches and Crossings” 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 : Requirements for 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.

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.

This document includes a Bibliography.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard 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, and include the movement of switches. 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.

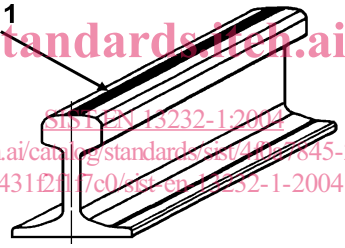
2 General definitions

2.1
contact area

those parts of the rail ensuring the support and/or guidance, inside or outside, of a wheel. See Figure 5.

2.2
running table

upper surface of the head of a rail. See Figure 1.



Key

1 Running table

Figure 1

2.3
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.

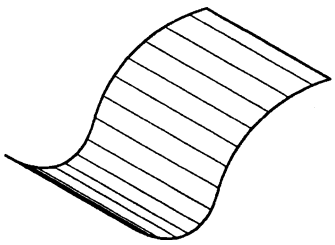
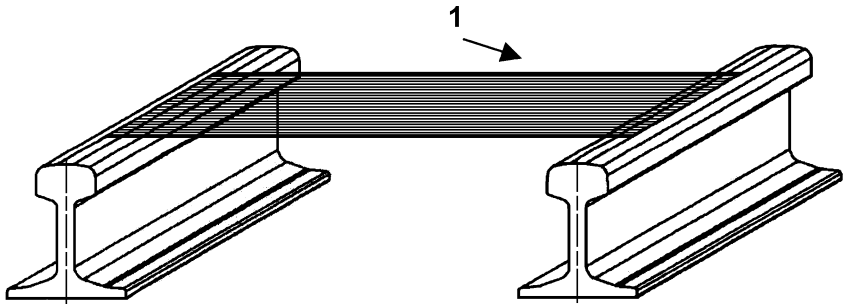


Figure 2

2.4
running plane
flat plane tangential to the running surface at the considered point. See Figure 3.

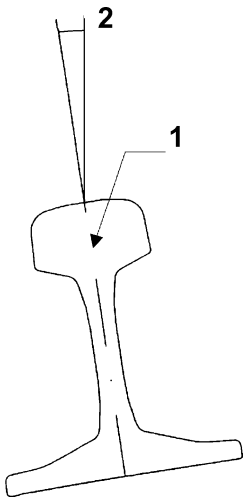


Key

1 Running plane

Figure 3

2.5
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 4.

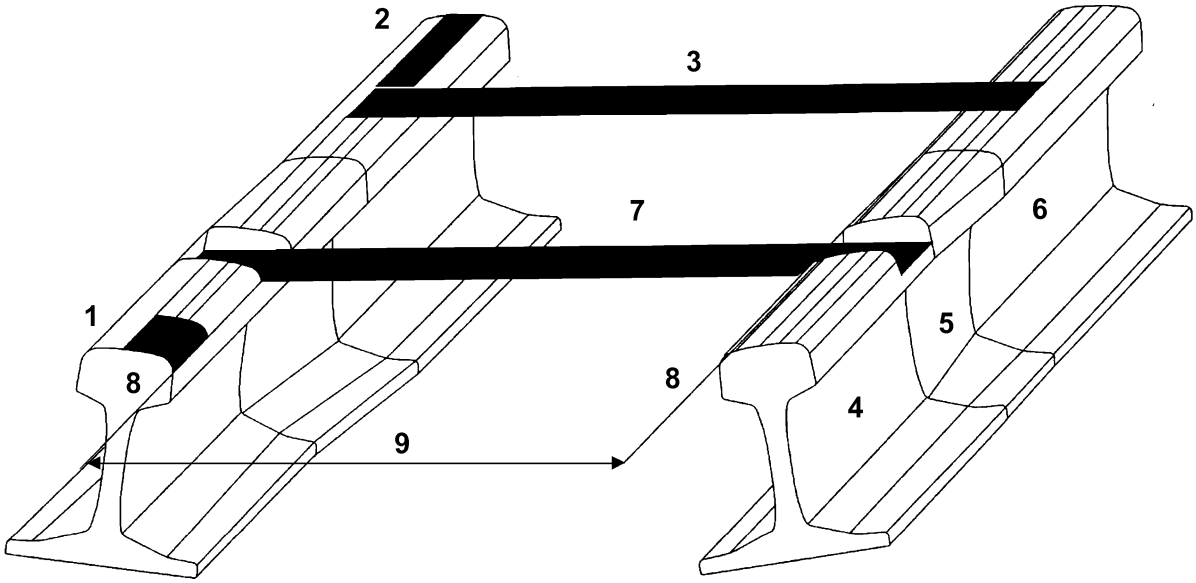


Key

1 y-y axis
2 Rail inclination

Figure 4

2.6
inclined track
where the axes of the two running rails are inclined inwards towards each other. See Figure 5.



Key

1 Contact area
2 Running table
3 Running plane
4 Inclined track
5 Rail twist
6 Vertical track
7 Gauge reference plane
8 Running edge
9 Gauge

Figure 5

2.7
vertical track
where the axes of the two running rails are parallel, that is, have a rail inclination of zero

2.8
rail twist
change in inclination of the rail (e.g. from 1 in 20 to vertical). See Figure 5.

2.9
gauge reference plane
plane parallel to and below the running surface at a dimension *"z"*. This dimension *"z"* is generally 14 mm. This plane is used for all design work, machining, and measurements. See Figures 5 and 6.

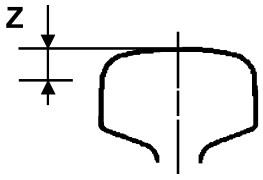


Figure 6

2.10
running edge
intersection of the gauge reference plane with the inside of the rail head. See Figure 5.

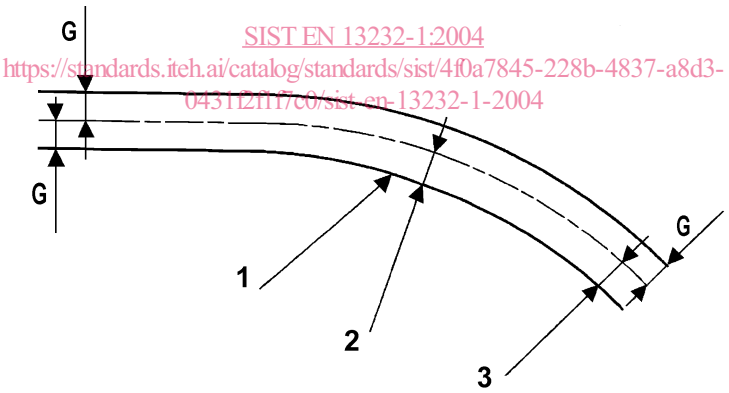
2.11
track gauge
distance between the corresponding running edges of the two rails. See Figure 5.

2.12
centre-line of track
line midway between the running edges on straight track, and half normal gauge inside the running edge of the larger radius rail in curved track. See Figures 5 and 7.

2.13
high-side rail
on curved track, the rail with the larger radius, i.e. centre-line radius plus half of track gauge

2.14
low-side rail
on curved track, the rail with the smaller radius

2.15
gauge widening
intended increase in 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 7.



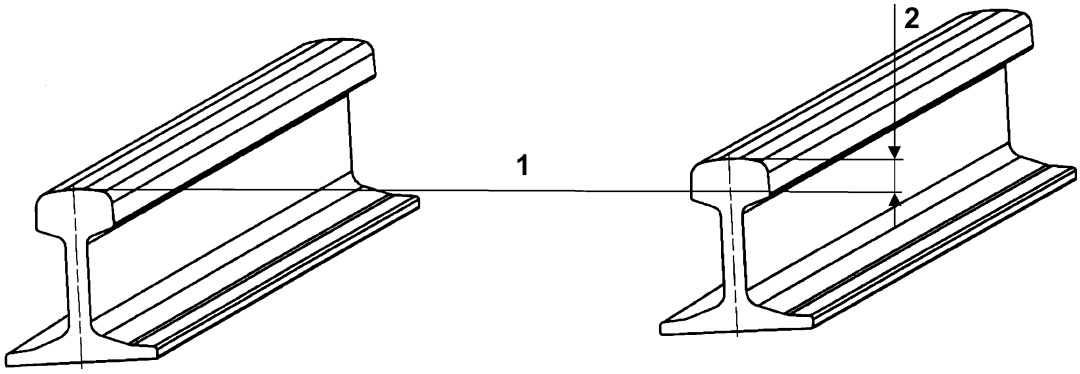
Key

1 Gauge widening on sharp curves
2 717.5 + Gauge widening
3 717.5 + Gauge widening
G =gauge / 2

Figure 7

2.16
sleeper or bearer spacing
distance along the rails between the centre-lines of adjacent sleepers or bearers

2.17
cant (superelevation)
difference in height, relative to the horizontal, of the two rails of one track at a particular location, measured at the centrelines of the heads of the rails. See Figure 8.



Key

1 Horizontal
2 Cant (superelevation)

Figure 8

2.18
equilibrium cant

cant for which at a particular stated speed the resultant of the load of vehicle and the centrifugal force is perpendicular to the running plane

2.19
cant deficiency
difference between the applied cant on the track and the equilibrium cant for the vehicle at the particular stated speed

3 Definitions of classification terms

3.1
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: Switches are in some circumstances described as points - either word is considered acceptable. (English version only).

All sketches represent the running edges. All turnouts are viewed from the switch toe (see 6.2.7).

3.2
turnout
layout permitting the passage of rolling stock between two tracks and one common track. See Figure 9.

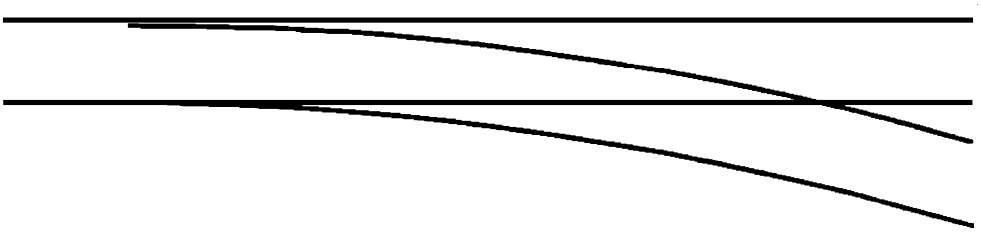


Figure 9

3.3
diamond crossing
layout permitting the passage of rolling stock on intersecting tracks. See Figure 10.

Figure 10

3.4
interlaced track
layout permitting the passage of rolling stock between two tracks either of different gauge or not, to a common section with 4 rails. See Figure 11.

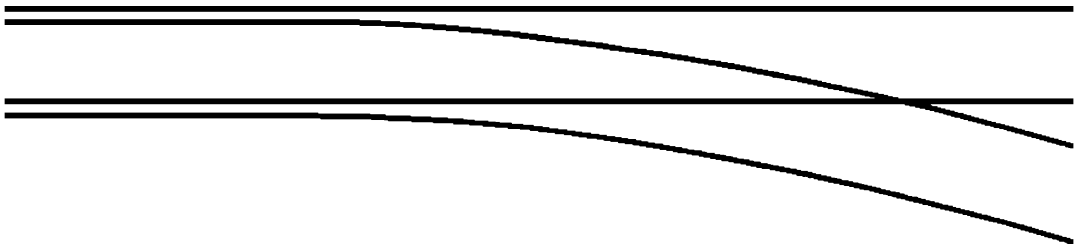


Figure 11

3.5
mixed gauge turnout
layout permitting the passage of rolling stock between two tracks of different gauge to a common section with 3 rails. See Figure 12.

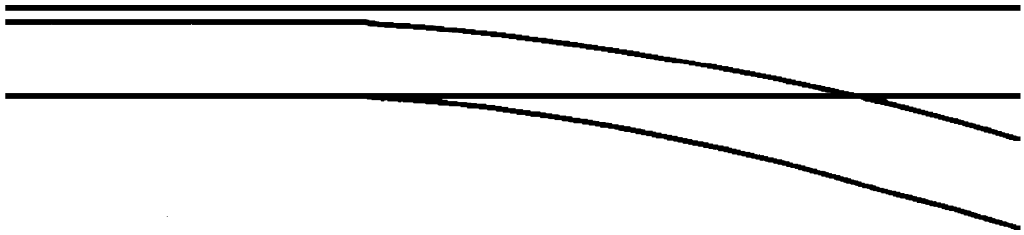


Figure 12

3.6
trap point
layout permitting the derailment of rolling stock to ensure for example protection of an adjacent track or structure. See Figure 13.

Figure 13

3.7
adjustment switch (expansion joint)
device which permits longitudinal relative rail movement of two adjacent rails, while maintaining correct guidance and support. See Figure 14.

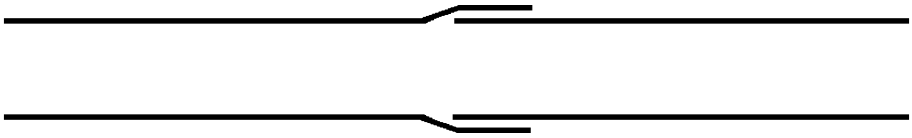


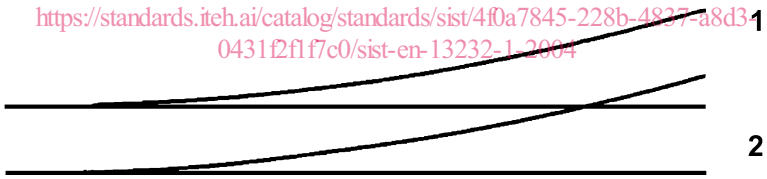
Figure 14

4 Definitions of terms in turnouts and diamonds

4.1 Track designations

The following definitions apply even when the appearance of the layout is curved.

4.1.1
main line
in the basic design the straight track is called the "main" line. See Figure 15.



Key

1 Branch line
2 Main line

Figure 15

4.1.2
branch line (turnout line)
in the basic design, the curved track is called the "branch" or "turnout" line. See Figure 15.

4.2
turnout designations
turnouts are designated by the symbols :

RH diverging to the right

LH diverging to the left

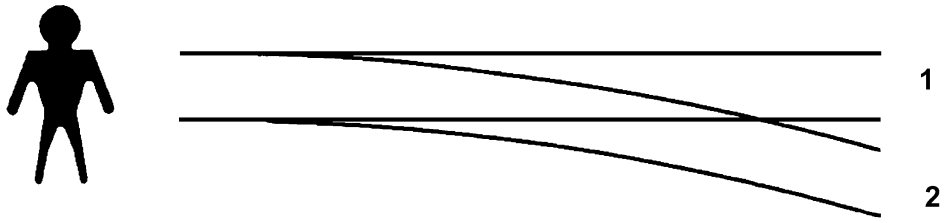
S symmetrical (or equal split)

The type of turnout depends upon the "set" of the switches, and not upon the geometry of the track layout. The

"set" is defined as the bend in the stock rail at the switch toe applying to the branch or turnout line.

The diverging track (to left or right) is always the track with the set in the stock rail, or where no set is used, the track with the sharper radius.

4.2.1
diverging turnout
when the branch line diverged to the right of the main line, it is a right hand turnout. See Figure 16.

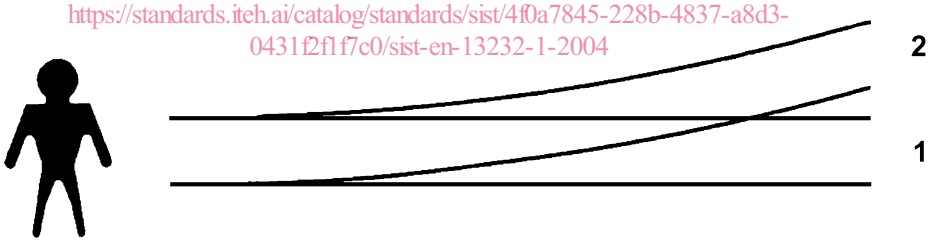


Key

1 Main line
2 Branch line

Figure 16

When the branch line diverged to the left of the main line, it is a left-hand turnout. See Figure 17.



Key

1 Main line
2 Branch line

Figure 17

For curved turnouts see 7.6.3.