

**Raudteealased rakendused. Rööbastee. Pöörmed ja ristmed. Osa 3: Nõuded ratta ja rööpa vahelisele koostoimele KONSOLIDEERITUD TEKST**

Railway applications - Track - Switches and crossings - Part 3: Requirements for wheel/rail interaction CONSOLIDATED TEXT

## EESTI STANDARDI EESSÕNA

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Käesolev Eesti standard EVS-EN 13232-3:2003+A1:2011 sisaldab Euroopa standardi EN 13232-3:2003+A1:2011 ingliskeelset teksti.

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English Version

## Railway applications - Track - Switches and crossings - Part 3: Requirements for wheel/rail interaction

Applications ferroviaires - Voie - Appareils de voie - Partie  
3: Exigences pour l'interaction Roue/Rail

Bahnanwendungen - Oberbau - Weichen und Kreuzungen -  
Anforderungen an das Zusammenspiel Rad/Schiene

This European Standard was approved by CEN on 13 February 2003 and includes Amendment 1 approved by CEN on 13 September 2011.

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## Foreword

This document (EN 13232-3:2003+A1:2011) 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of an identical text or by endorsement, at the latest by April 2012, and conflicting national standards shall be withdrawn at the latest by April 2012.

**A1** 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 2008/57/EC.

For relationship with EU Directive 2008/57/EC, see informative Annex ZA, which is an integral part of this document. **A1**

This document includes Amendment 1, approved by CEN on 2011-09-13.

This document supersedes EN 13232-3:2003.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** **A1**.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This series of European 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 : Actuation, locking and detection*
- *Part 5 : Switches*
- *Part 6 : Fixed common and obtuse crossings*
- *Part 7 : Crossings with movable 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. Part 9 defines the functional and geometric dimensions and tolerances for layout assemblies. These use Parts 1 to 4 as a basis.

The following terms are used within to define the parties involved in using the European Standard 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 European Standard in response to the Customer's requirements.

According to the CEN/CENELEC Internal Regulations, the national standards organizations 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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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## 1 Scope

This part of this European Standard specifies:

- characterisation of wheel and track dimensions;
- geometric design principles for wheel guidance;
- design principles for wheel load transfer;
- deciding whether movable crossings are needed.

These are illustrated by their application to turnout components:

- switches;
- crossings;
- check rails.

but the principles apply equally to more complex layouts.

## 2 Normative references

Not applicable.

## 3 Presentation

### 3.1 General

The motion of wheels and transfer of wheel loads is a complex subject, involving the accumulation of extensive data and an understanding of dynamic effects.

By making certain assumptions it is feasible to define rules which are simple yet rigorous enough for design of all types of switches and crossings. Some of these rules assume a 2-axle bogie or vehicle. The need for other special requirements such as those posed by 3-axle or other vehicles must be stated by the Customer.

### 3.2 Wheel and track dimensions

This clause deals with the key dimensions needed for the analysis of the interaction between wheels and the track, either for guidance calculations or load transfer calculations.

Wheel and track dimensions are defined below.

### 3.3 Wheel profiles

Sufficient dimensions of the cross-section or profile of a wheel are required for switch and crossing design. As a minimum, a dimensioned profile drawing shall be provided by the customer, with the following key dimensions as defined in Figure 1:

- flange width, height and flange angle;
- tyre width and tread angle;
- wheel diameter or radius.