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STN	**Železnice Koľaj Výhybky a križovatky pre vignolové koľajnice Časť 7: Pohyblivé srdcovky**	**STN EN 13232-7 73 6363**

Railway applications - Track - Switches and crossings for Vignole rails - Part 7: Crossings with moveable parts

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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English Version

Railway applications - Track - Switches and crossings for Vignole rails - Part 7: Crossings with moveable parts

Applications ferroviaires - Voie - Appareils de voie pour rails Vignole - Partie 7 : Cœurs à parties mobiles

Bahnanwendungen - Oberbau - Weichen und Kreuzungen für Vignolschienen - Teil 7: Herzstücke mit beweglichen Bauteilen

This European Standard was approved by CEN on 23 October 2022.

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European foreword

This document (EN 13232-7:2023) 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of an identical text or by endorsement, at the latest by April 2024, and conflicting national standards shall be withdrawn at the latest by April 2024.

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

This document supersedes EN 13232-7:2006+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*

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.

The changes introduced in this document bring further detail and clarity to the requirements and a number of the figures, the structure of the document is largely unchanged from the previous revision.

This document has been prepared under a standardisation request addressed to [the relevant ESO] by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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Introduction

Crossings with moveable parts allow a vehicle to pass the area where the two rails cross with a continuous running edge, so that the wheels of the vehicle are fully supported and guided in the whole crossing area, either in the facing or trailing direction.

The main criteria for the selection of crossings with moveable parts are:

— improvement of ride comfort;

— reduction of noise and vibration;

— reduction of maintenance;

— mixed traffic conditions (e.g. train/tram);

— security against derailment.

This last point is particularly important (critical) in diamond crossings. Effectively, as the wheel diameter and the obtuse crossing angle decrease, the distance without guidance (EN 13232-3:2023, 4.2.5) increases. Therefore, to ensure the safety of running of the wheel set over the diamond crossing, it is sometimes necessary to design the obtuse crossing as moveable. Rules and recommendations for security against derailment in diamond crossings are set down in EN 13232-3:2023.

Crossings with moveable parts experience a combination of external forces from rolling stock, thermal influences etc. Operating, signalling systems, heater systems, load bearing supports, maintainability and safety are all major factors that affect the design.

The performance will be influenced by axle loads, frequency of traffic and speed.

1 Scope

This document:

— establishes a working terminology for crossings with moveable parts, which means crossings with moveable parts to close the gap of the running edge, and their constituent parts, and identify the main types;

— lists the minimum requirements for the manufacture of crossings with moveable parts and/or their constituent parts;

— formulates codes of practice for factory inspection and tolerances for crossings with moveable parts and/or their constituent parts;

— establishes the limits and extent of supply;

— lists the method by which crossings with moveable parts and their constructional parts should be identified;

— lists the different and varying ways by which crossings with moveable parts can be described, using the following parameters:

  — geometry of crossings;

  — types of construction;

  — performance requirements;

  — design criteria;

  — 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.

EN 13232-1:2023, *Railway applications – Track – Switches and crossings for Vignole rails – Part 1: Definitions*

EN 13232-2:2023, *Railway applications – Track – Switches and crossings for Vignole rails – Part 2: Requirements for geometric design*

EN 13232-3:2023, *Railway applications – Track – Switches and crossings for Vignole rails – Part 3: Requirements for wheel/rail interaction*

EN 13232-4:2023, *Railway applications – Track – Switches and crossings for Vignole rails – Part 4: Actuation, locking and detection*

EN 13232-9:2023, *Railway applications – Track – Switches and crossings for Vignole rails – Part 9: Layouts*

EN 13674-1:2011+A1:2017, *Railway applications - Track - Rail - Part 1: Vignole railway rails 46 kg/m and above*

EN 13674-2:2019, *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*

EN 16843:2023, *Railway applications - Infrastructure - Mechanical requirements for joints in running rails*

EN 13481-1:2012, *Railway applications - Track - Performance requirements for fastening systems - Part 1: Definitions*

EN 13481-2:2022, *Railway applications – Track – Performance requirements for fastening systems - Part 2: Fastening systems for concrete sleepers*

EN 13481-3:2022, *Railway applications – Track – Performance requirements for fastening systems - Part 3: Fastening systems for wood sleepers*

EN 13481-4:2022, *Railway applications – Track – Performance requirements for fastening systems - Part 4: Fastening systems for steel sleepers*

EN 13481-5:2022, *Railway applications – Track – Performance requirements for fastening systems - Part 5: Fastening systems for slab track with rail on the surface or rail embedded in a channel*

EN 13481-7:2022, *Railway applications – Track – Performance requirements for fastening systems - Part 7: Special fastening systems for switches and crossings and check rails*

EN 13230-1:2016, *Railway applications - Track - Concrete sleepers and bearers - Part 1: General requirements*

EN 13230-2:2016, *Railway applications - Track - Concrete sleepers and bearers - Part 2: Prestressed monoblock sleepers*

EN 13230-3:2016, *Railway applications - Track - Concrete sleepers and bearers - Part 3: Twin-block reinforced sleepers*

EN 13230-4:2016+A1:2020, *Railway applications - Track - Concrete sleepers and bearers - Part 4: Prestressed bearers for switches and crossings*

EN 13230-5:2016, *Railway applications - Track - Concrete sleepers and bearers - Part 5: Special elements*

EN 13230-6:2020, *Railway applications - Track - Concrete sleepers and bearers - Part 6: Design*