Irish Standard
I.S. EN 13232-7:2006+A1:2011

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

I.S. EN 13232-7:2006+A1:2011

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

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This European Standard was approved by CEN on 9 January 2006 and includes Amendment 1 approved by CEN on 13 September 2011.

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Foreword

This document (EN 13232-7:2006+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of an identical text or by endorsement, at the latest by April 2012, and conflicting national standards shall be withdrawn at the latest by April 2012.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 13232-7:2006.

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 standards “Railway applications – Track – Switches and crossings” covers the design and quality of switches and crossings in flat bottom rails. 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 the standard.

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 geometrical 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.

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.

Introduction

The requirements of crossings with moveable parts are that they are capable of performing their intended purpose, which is to allow a vehicle to pass the area where the two rails cross with a continuous running edge.

That means 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 13232-3:2003, 4.2.5) increases.

Therefore, to assure 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 part 9 of this standard.

The crossings with moveable parts shall be designed to withstand all external forces from rolling stock, thermal influences etc.

The customer shall specify the maximum strains or stresses due to external thermal forces that the crossing with moveable parts has to withstand.

Operating, signalling systems, heater systems, load bearing supports, maintainability and safety are all major factors which should be taken into account during the design.

The performance criteria shall be based on information given by the customer.

The design and selection of types of crossings with moveable parts will be influenced by axle loads, frequency of traffic and speed.

1 Scope

The scope of this part is:

— to establish 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;

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

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

— to establish the limits and extent of supply;

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

— to list 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 referenced documents are indispensable for the application of this European Standard. 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*

EN 13232-1, *Railway applications — Track — Switches and crossings — Part 1: Definitions*

EN 13232-2, *Railway applications — Track — Switches and crossings — Part 2: Requirements for geometric design*

EN 13232-4, *Railway applications — Track — Switches and crossings — Part 4: Actuation, locking and detection*

prEN 13232-9, *Railway applications — Track — Switches and crossings — Part 9: Layouts*

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

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