Irish Standard
I.S. EN 13230-1:2016

Railway applications - Track - Concrete sleepers and bearers - Part 1: General requirements

I.S. EN 13230-1:2016

Incorporating amendments/corrigenda/National Annexes issued since publication:

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I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

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This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

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National Foreword

I.S. EN 13230-1:2016 is the adopted Irish version of the European Document EN 13230-1:2016, Railway applications - Track - Concrete sleepers and bearers - Part 1: General requirements

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with this document does not of itself confer immunity from legal obligations.

In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13230-1

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ICS 91.100.30; 93.100

Supersedes EN 13230-1:2009

English Version

Railway applications - Track - Concrete sleepers and bearers - Part 1: General requirements

Applications ferroviaires - Voie - Traverses et supports en béton - Partie 1 : Prescriptions générales

Bahnanwendungen - Oberbau - Gleis- und Weichenschwellen aus Beton - Teil 1: Allgemeine Anforderungen

This European Standard was approved by CEN on 4 March 2016.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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 CEN-CENELEC Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 13230-1:2016) has been prepared by Technical Committee CEN/TC 256 "Railway applications", the secretariat of which is held by DIN.

This document supersedes EN 13230-1:2009.

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 November 2016, and conflicting national standards shall be withdrawn at the latest by November 2016.

This document has been prepared under a mandate given to CEN 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.

This European Standard is one of the EN 13230 series "*Railway applications – Track – Concrete sleepers and bearers*", which consist of the following parts:

— Part 1: General requirements;

— Part 2: Prestressed monoblock sleepers;

— Part 3: Twin-block reinforced sleepers;

— Part 4: Prestressed bearers for switches and crossings;

— Part 5: Special elements;

— Part 6: Design.

This European Standard is used as the technical basis for transaction between corresponding parties (purchaser – supplier).

Annexes A to F are informative; they can be used as normative requirements by completion of a contract, if agreed by the contracting parties.

The Annex E of EN 13230-1:2009 is deleted and is shifted into EN 13230-6.

There is a change in the wording of the documents of EN 13230 (series) "design bending moment" is replaced by "characteristic bending moment" and "test bending moment".

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

This part of the EN 13230 series covers the general requirements for concrete sleepers and bearers and is used in conjunction with the following parts:

— Part 2: Prestressed monoblock sleepers;

— Part 3: Twin-block reinforced sleepers;

— Part 4: Prestressed bearers for switches and crossings;

— Part 5: Special elements;

— Part 6: Design.

Concrete sleepers and bearers are safety critical components for railway applications. They are not covered by any other standards.

As safety critical components, an agreement is needed between purchaser and supplier to operate a factory Quality System.

This position about safety critical relevance has always been highlighted by decisions from CEN/TC 256/SC 1 "*Railway applications / Infrastructure*" and Annex ZA provides detailed information.

1 Scope

This part of the EN 13230 series defines technical criteria and control procedures which need to be satisfied by the constituent materials and the finished concrete sleepers and bearers, i.e.: precast concrete sleepers, twin-block reinforced sleepers, bearers for switches and crossings, and special elements for railway tracks.

The main requirement of concrete sleepers and bearers is the transmission of vertical, lateral and longitudinal loads from the rails to the ballast or other support. In use, they are also exposed to frost damage and to moisture, which can result in detrimental chemical reactions within the sleeper.

In this standard mechanical tests are defined which provide assurance of the capability of sleepers or bearers to resist repetitive loading and provide sufficient durability. In addition, controls are placed on manufacturing processes and tests to ensure that the concrete will not suffer degradation in service through chemical reaction and frost damage.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 206, *Concrete - Specification, performance, production and conformity*

EN 934-2, *Admixtures for concrete, mortar and grout – Part 2: Concrete admixtures – Definitions, requirements, conformity, marking and labelling*

EN 1008, *Mixing water for concrete - Specification for sampling, testing and assessing the suitability of water, including water recovered from processes in the concrete industry, as mixing water for concrete*

EN 10080, *Steel for the reinforcement of concrete - Weldable reinforcing steel - General*

FprEN 10138 (all parts), *Prestressing steels*

EN 12620, *Aggregates for concrete*

EN 13146-5, *Railway applications - Track - Test methods for fastening systems - Part 5: Determination of electrical resistance*

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

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

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

prEN 13230-6:2015, *Railway applications – Track – Concrete sleepers and bearers – Part 6: Design*

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