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Railway applications - Track - Concrete sleepers and  
bearers - Part 4: Prestressed bearers for switches and  
crossings

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 13230-4:2016+A1:2020 sisaldab Euroopa standardi EN 13230-4:2016+A1:2020 ingliskeelset teksti.	This Estonian standard EVS-EN 13230-4:2016+A1:2020 consists of the English text of the European standard EN 13230-4:2016+A1:2020.
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English Version

**Railway applications - Track - Concrete sleepers and  
bearers - Part 4: Prestressed bearers for switches and  
crossings**

Applications ferroviaires - Voie - Traverses et supports  
en béton - Partie 4 : Supports précontraints pour  
appareil de voie

Bahnanwendungen - Oberbau - Gleis- und  
Weichenschwellen aus Beton - Teil 4:  
Spannbetonschwellen für Weichen und Kreuzungen

This European Standard was approved by CEN on 4 March 2016 and includes Amendment 1 approved by CEN on 10 June 2019.

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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 13230-4:2016+A1:2020) has been prepared by Technical Committee CEN/TC 256 “Railway applications”, the secretariat of which is held by DIN.

This document includes Amendment 1 approved by CEN on 6 October 2019.

This document supersedes A1 EN 13230-4:2016 A1.

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

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of an identical text or by endorsement, at the latest by August 2020, and conflicting national standards shall be withdrawn at the latest by February 2022.

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 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 2016/797/EU.

For relationship with EU Directive 2016/797/EU, 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.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## Introduction

This part of the EN 13230 series defines the specific requirements dedicated to prestressed bearers for switches and crossings.

These are additional requirements to EN 13230-1:2016 that are necessary to have a complete standard dealing with prestressed bearers for switches and crossings.

The document specifies the test arrangements, the test procedures and the corresponding acceptance criteria.

## 1 Scope

This part of the EN 13230 series defines additional technical criteria and control procedures as well as specific tolerance limits related to manufacturing and testing prestressed bearers for switches and crossings with a maximum length of 8,5 m.

Bearers longer than 8,5 m are considered as special elements and are covered by EN 13230-5:2016.

## 2 Normative references

**[A1]** 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. **[A1]**

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

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

FprEN 10138 (all parts), *Prestressing steels*

## 3 Terms, definitions and symbols

### 3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13230-1:2016 and the following apply:

**[A1]** ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at <https://www.iso.org/obp>

— IEC Electropedia: available at <http://www.electropedia.org/> **[A1]**

#### 3.1.1

##### **prestressed monoblock bearer**

bearer manufactured using pre-tensioned or post-tensioned tendons

#### 3.1.2

##### **characteristic positive bending moment**

$M_{k,pos}$

positive bending moment at any position of the bearer

#### 3.1.3

##### **characteristic negative bending moment**

$M_{k,neg}$

negative bending moment at any position of the bearer