

BS EN 13230-5:2016



BSI Standards Publication

# Railway applications — Track — Concrete sleepers and bearers

Part 5: Special elements

**National foreword**

This British Standard is the UK implementation of EN 13230-5:2016. It supersedes BS EN 13230-5:2009 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee RAE/2, Railway Applications - Track.

A list of organizations represented on this committee can be obtained on request to its secretary.

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## Railway applications - Track - Concrete sleepers and bearers - Part 5: Special elements

Applications ferroviaires - Voie - Traverses et supports  
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Bahnanwendungen - Oberbau - Gleis- und  
Weichenschwellen aus Beton - Teil 5: Sonderformen

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## European foreword

This document (EN 13230-5:2016) has been prepared by Technical Committee CEN/TC 256 “Railway applications”, the secretariat of which is held by DIN.

This document supersedes EN 13230-5:2009.

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of an identical text or by endorsement, at the latest by November 2016, and conflicting national standards shall be withdrawn at the latest by November 2016.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 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”.

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## Introduction

This part of the EN 13230 series defines the specific requirements relating to special elements.

These are additional requirements to EN 13230-1:2016 that are necessary to have a complete standard dealing with special elements.

These special elements are prestressed concrete special elements as special sleepers or special bearers and reinforced concrete special elements. They are generally used within specific domains of the track for ballastless tracks, for bridges, or with check rails for instance.

This part of EN 13230 defines additional technical criteria and control procedures related to manufacturing and testing special elements. It completes the requirements of EN 13230-2:2016, EN 13230-3:2016 and EN 13230-4:2016.

## 1 Scope

This part of the EN 13230 series defines additional technical criteria and control procedures for manufacturing and testing special elements.

## 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 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, *Railway applications – Track – Concrete sleepers and bearers – Part 4: Prestressed bearers for switches and crossings*

## 3 Terms and definitions

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

### 3.1

#### **special element**

any individual concrete element supporting rails in the field of railway track construction, to which this standard is relevant, but which is not included in EN 13230-2:2016, EN 13230-3:2016 or EN 13230-4:2016 (slabs and longitudinal beams are excluded)

## 4 Requirements

A special element shall be defined by detailed drawings including tolerances.

All the tolerances specified in EN 13230-1:2016 which relate to the concrete elements, the rails, the fastening system and gauge shall be specified by the purchaser.

The purchaser shall specify the positive and negative characteristic bending moments to be applied:

- a) at the rail seat section;
- b) at the centre section or any relevant section.

## 5 Product testing

EN 13230-1:2016, Clause 7, shall apply to any special element supporting rails for railway track applications.

Depending on the type of element and whether the concrete is prestressed or reinforced, the appropriate following clauses shall be for application:

- a) either EN 13230-2:2016, Clause 4;
- b) or EN 13230-3:2016, Clause 4;
- c) or EN 13230-4:2016, Clause 5.

If possible, the special parts of the element shall be checked according to the requirements of the purchaser and the quality plan of the manufacturing unit.

If not, the manufacturer shall have a special agreement with the purchaser in order to define the testing method.

## 6 Manufacturing

Depending on the type of element and whether the concrete is prestressed or reinforced, the appropriate following clauses shall be used:

- a) either EN 13230-2:2016, Clause 5;
- b) or EN 13230-3:2016, Clause 7;
- c) or EN 13230-4:2016, Clause 6.

Any special requirement to be incorporated during the manufacturing process shall be defined by the purchaser.

## 7 Data to be supplied

The purchaser shall supply all the data detailed in EN 13230-1:2016 and either EN 13230-2:2016, EN 13230-3:2016 or EN 13230-4:2016, in addition to any further special requirement.



## **Annex A** (informative)

### **Definition of special elements – Basic examples**

#### **A.1 Prestressed concrete special elements**

##### **A.1.1 Special sleepers**

See EN 13230-2:2016:

- a) with conductor rail;
- b) with check rail;
- c) for dual gauge;
- d) for level crossing;
- e) for expansion joints;
- f) for guard rail;
- g) for ballastless track;
- h) for accommodating cables.

##### **A.1.2 Special bearers**

See EN 13230-4:2016:

- a) for dual gauge;
- b) for expansion joints;
- c) for ballastless track;
- d) for hot-box detectors;
- e) for bridges;
- f) bearers for switches and crossings more than 8,5 m long;
- g) for accommodating cables.

## **A.2 Reinforced concrete special elements**

### **A.2.1 Special sleepers**

See EN 13230-3:2016:

- a) with conductor rail;
- b) with check rail;
- c) for dual gauge;
- d) for level crossing;
- e) for guard rail;
- f) for ballastless track (twin-block or monoblock);
- g) for accommodating cables.

### **A.2.2 Blocks for ballastless tracks**

See EN 13230-3:2016 which applies except for Clauses 5 and 6 (steel connecting bar) and Annex B (steel connecting bar).



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