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Standards

Irish Standard  
I.S. CEN/TS 13103-2:2020

# Railway applications - Wheelsets and bogies - Part 2: Design method for axles with internal journals

**I.S. CEN/TS 13103-2:2020**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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NSAI  
1 Swift Square,  
Northwood, Santry  
Dublin 9

T +353 1 807 3800  
F +353 1 807 3838  
E standards@nsai.ie  
W NSAI.ie

Sales:  
T +353 1 857 6730  
F +353 1 857 6729  
W standards.ie

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## National Foreword

I.S. CEN/TS 13103-2:2020 is the adopted Irish version of the European Document CEN/TS 13103-2:2020, Railway applications - Wheelsets and bogies - Part 2: Design method for axles with internal journals

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**TECHNICAL SPECIFICATION**  
**SPÉCIFICATION TECHNIQUE**  
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**CEN/TS 13103-2**

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English Version

**Railway applications - Wheelsets and bogies - Part 2:**  
**Design method for axles with internal journals**

Applications ferroviaires - Essieux montés et bogies -  
Partie 2: Méthode de conception pour les essieux-axes  
à fusées intérieures

Bahnanwendungen - Radsätze und Drehgestelle - Teil  
2: Konstruktionsleitfaden für innengelagerte  
Radsatzwellen

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**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

## CEN/TS 13103-2:2020 (E)

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## **European foreword**

This document (CEN/TS 13103-2:2020) has been prepared by Technical Committee CEN/TC 256 “Railway applications”, the secretariat of which is held by DIN.

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## CEN/TS 13103-2:2020 (E)

### 1 Scope

This document:

- defines the forces and moments to be taken into account with reference to masses, traction and braking conditions;
- gives the stress calculation method for axles with inboard axle journals;
- specifies the maximum permissible stresses to be assumed in calculations for steel grade EA1N, EA1T and EA4T defined in EN 13261;
- describes the method for determination of the maximum permissible stresses for other steel grades;
- determines the diameters for the various sections of the axle and recommends the preferred shapes and transitions to ensure adequate service performance.

This document is applicable for axles defined in EN 13261.

This document applies only for heavy rail vehicles.

The calculation of wheelsets for special applications (e.g. railbound construction and maintenance machines) can be made according to this document only for the load cases of free-rolling and rolling in train formation.

### 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 13260, *Railway applications — Wheelsets and bogies — Wheelsets — Product requirements*

EN 13261, *Railway applications — Wheelsets and bogies — Axles — Product requirements*

EN 15313, *Railway applications - In-service wheelset operation requirements - In-service and off-vehicle wheelset maintenance*

EN 15663, *Railway applications - Definition of vehicle reference masses*



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