BS 5892-1:2023



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Railway rolling stock materials

Part 1: Specification for axles for traction and trailing stock

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Foreword

Publishing information

This part of BS 5892 is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 31 January 2023. It was prepared by Technical Committee RAE/3, *Railway Rolling Stock Products*. A list of organizations represented on this committee can be obtained on request to the committee manager.

Supersession

BS 5892-1:2023 supersedes BS 5892-1:1992+A3:2009, which is withdrawn.

Relationship with other publications

BS 5892, which covers railway rolling stock materials, is published in the following eight parts:

- Part 1: Specification for axles for traction and trailing stock;
- Part 2: Specification for forged and rolled wheel centres;
- Part 3: Specification for monobloc wheels for traction and trailing stock;
- Part 4: Specification for forged and rolled tyres;
- Part 5: Specification for steel bars for retaining rings for tyred wheels;
- Part 6: Specification for wheelsets for traction and trailing stock;
- Part 7: Specification for product and technical approval requirements for cast wheels; and
- Part 8: Railway applications – Wheelsets and bogies – Powered and non-powered wheelsets with inboard bearings – Product requirements.

Information about this document

This new edition of BS 5892-1 incorporates changes made necessary by the publication of BS EN 13261:2020, particularly for axle manufacture and testing which is now included in the revised BS EN 13261. The additions include a grain size change and micro cleanliness assessment on the axle. It does not represent a full review or revision of the standard, which will be undertaken in due course.

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Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is "shall".

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Where words have alternative spellings, the preferred spelling of the *Shorter Oxford English Dictionary* is used (e.g. "organization" rather than "organisation").

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1 Scope

This part of BS 5892 specifies requirements for the manufacture, inspection and testing of forged and/or rolled axles (solid or hollow) in the unmachined, part machined or ready for assembly condition for traction and trailing stock. This part of BS 5892 includes requirements for the dimensions, tolerances and surface finish that are to be adopted unless otherwise specified in the design drawing.

This part of BS 5892 is not applicable to axles designed to BS EN 13103 and BS EN 13104, the manufacture, inspection and testing of which are specified in BS EN 13261.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes provisions 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.

BS 1104, *Specification for general purpose Acme screw threads*

BS 1134-1, *Assessment of surface texture – Methods and instrumentation*

BS 6072, *Method for magnetic particle flow detection*

BS 6200, *Sampling and analysis of iron, steel and other ferrous metals*

BS EN 10002-1, *Tensile testing of metallic materials – Part 1: Method of test at ambient temperature*

BS EN 10045-1, *Charpy impact test on metallic materials – Part 1: Test method (V- and U-Notches)*

BS EN ISO 643:2019, *Steels – Micrographic determination of the apparent grain size*

BS EN ISO 4967:2013, *Steel – Determination of content of nonmetallic inclusions – Micrographic method using standard diagrams*

BS EN ISO 9934-2, *Non-destructive testing – Magnetic particle testing – Detection media*

BS EN ISO 10012, *Measurement management systems – Requirements for measurement processes and measuring equipment*

3 Terms and Definitions

For the purposes of this part of BS 5892, the following definitions apply.

3.1 solid axle

axle of homogeneous steel, produced by forging and/or rolling, that has not been bored

3.2 hollow axle

axle of homogeneous steel, produced by forging and/or rolling, that has been through bored along its centre line

3.3 unmachined

condition of an axle that has been forged and/or rolled having undergone no machining operation other than finishing to length and providing machining centres but is in the heat treatment condition specified

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