

Railway rolling stock materials —

Part 4: Specification for forged and rolled tyres

Confirmed
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Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Iron and Steel Standards Policy Committee (ISM/-) to Technical Committee ISM/69, upon which the following bodies were represented:

- British Railways Board
- British Steel Industry
- London Underground Ltd.
- Ministry of Defence
- Railway Industry Association of Great Britain

This British Standard, having been prepared under the direction of the Iron and Steel Standards Policy Committee, was published under the authority of the Standards Board and comes into effect on 15 November 1992

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Amendments issued since publication

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Foreword

This Part of BS 5892 was prepared under the direction of the Iron and Steel Standards Policy Committee and supersedes BS 5892-4:1986, which is withdrawn. BS 5892, which covers railway rolling stock material, is published in the following six 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.*

The format of this Part of BS 5892 has been revised to incorporate the requirements for dimensional tolerancing for tyres which were previously included in BS 5892-6. This Part of BS 5892 is related to ISO 1005-1 and ISO 1005-2; however, it has not been possible to obtain equivalence. It is related to UIC 810-1 and UIC 810-2.

BS 5892-1 to BS 5892-3 and BS 5892-6 have also been revised to ensure consistency with the requirements of this Part.

Product certification. Users of this British Standard are advised to consider the desirability of third party certification of product conformity with this British Standard based on testing and continuing surveillance, which may be coupled with assessment of a supplier's quality systems against the appropriate Part of BS 5750.

Enquiries as to the availability of third party certification schemes will be forwarded by BSI to the Association of Certification Bodies. If a third party certification scheme does not already exist, users should consider approaching an appropriate body from the list of Association members.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 10, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This Part of BS 5892 specifies requirements for the manufacture, inspection and testing of forged and rolled steel tyres for traction and trailing stock. This Part of BS 5892 includes requirements for the dimensions and tolerances that are to be adopted unless otherwise specified in the design drawing.

NOTE The titles of the publications referred to in this Part of BS 5892 are listed on the inside back cover.

2 Information to be supplied by the purchaser

The following information to be supplied by the purchaser in the enquiry and order shall be fully documented:

- a) the number of this British Standard, i.e. BS 5892-4;
- b) a fully dimensioned drawing of the tyre;
- c) the grade of steel required (see 3.1);
- d) the type of heat treatment required (see 3.2);
- e) the type of inspection and quality assurance system required (see clause 6);
- f) whether ultrasonic testing is required (see 7.3.5);
- g) whether a Brinell hardness test is required (see 7.3.4);

h) whether a statement giving the cast analysis and/or results of mechanical or other tests is required (see clause 11);

i) whether a product check analysis is required (see 9.1);

j) whether any special marking is required (see clause 5);

k) the method of protection against mechanical damage (see clause 12).

3 Classification and heat treatment

3.1 Grade of steel

The grade(s) of steel shall be selected from those listed in Table 1 and Table 3 (see item d) of clause 2). Grades B1, B2, B3, B4, BS, B6 and B7 shall have the composition and properties given in Table 1, Table 2 and Table 3.

3.2 Heat treatment condition

The tyres shall be supplied in one of the following conditions (see item d) of clause 2 and Table 3):

- a) normalized or normalized and tempered, which shall be designated by the letter N;
- b) immersion quenched and tempered, which shall be designated by the letter E.

Examples. B2N is steel grade B2, delivered in the normalized or normalized and tempered condition. B5E is steel grade B5 delivered in the immersion quenched and tempered condition.

Table 1 — Chemical composition

Grade of steel	Chemical composition										
	C max.	Si max.	Mn max.	P max.	S max.	Cr max.	Cu max.	Mo max.	Ni max.	V max.	(Cr + Mo + Ni) max.
	%	%	%	%	%	%	%	%	%	%	%
B1	0.48	0.50	1.20	0.040	0.040	0.30	0.30	0.08	0.30	0.05	0.60
B2	0.58	0.50	0.90	0.040	0.040	0.30	0.30	0.08	0.30	0.05	0.60
B3	0.60	0.50	1.10	0.040	0.040	0.30	0.30	0.08	0.30	0.05	0.60
B4	0.70	0.50	0.90	0.040	0.040	0.30	0.30	0.08	0.30	0.05	0.60
B5	0.60	0.50	0.80	0.040	0.040	0.30	0.30	0.08	0.30	0.05	0.60
B6	0.65	0.50	0.90	0.040	0.040	0.30	0.30	0.08	0.30	0.05	0.60
B7	0.80	0.50	1.00	0.040	0.040	0.30	0.30	0.20	0.30	0.05	0.70