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PD 1167

Amendment No. 3 : April, 1951

to B.S. 24, Part 4 : 1941

Steel forgings, blooms and castings

Page 14. *Delete* Specification No. 10 : 1941, 'Steel Castings'. This specification has been superseded by B.S. 592 : 1950, 'Carbon steel castings for general engineering purposes'.

C.F. (ME) 9451

Amendment No. 1
February, 1942

BRITISH STANDARDS INSTITUTION

BRITISH STANDARD SPECIFICATIONS FOR

RAILWAY ROLLING STOCK MATERIAL

**STEEL FORGINGS BLOOMS
AND CASTINGS**

B.S. 24 : Part 4 : 1941

WAR EMERGENCY REVISION

Owing to the present comparative scarcity of raw materials sufficiently low in sulphur and phosphorus for the production of steel to comply with the limits laid down in B.S. Specification 10, of Report No. 24 : Part 4 : 1941, the following amendment is hereby made :

SPECIFICATION No. 10 : 1941, STEEL CASTINGS

Clause 1. Quality of Material. The maximum percentage of sulphur and of phosphorus to be 0.07 in place of 0.06.

[B.S. 24 : Part 4 : 1941, facing p. 14]

OFFICE COPY + 3 amendments

Committee Room B

BRITISH STANDARD 24 : PART 4 : 1941

Superseded by 1956 issue

**STEEL FORGINGS
BLOOMS
AND CASTINGS**

RAILWAY
ROLLING STOCK
MATERIAL

BRITISH STANDARDS INSTITUTION

OFFICE COPY.

P.D. 31

Amendment No. 2. October, 1942

to

B.S. 24 : Part 4 : 1941

Steel Forgings, Blooms and Castings

War Emergency Revision

SPECIFICATION No. 8

STEEL FORGINGS AND CLASS 'C' AND CLASS 'D'
ROLLED BARS FOR LOCOMOTIVES

SPECIFICATION No. 9

STEEL BLOOMS FOR LOCOMOTIVE FORGINGS

Owing to the scarcity of raw materials a departure from the above specifications is permitted as a war time measure allowing the use of basic open hearth steel where acid open hearth steel was previously specified.

The Tables on pages 7 and 11 shall accordingly be modified to state that material to Classes 'C' and 'D' except when required for coupling and connecting rods, may also be made by the basic open hearth process.

[B.S. 24 : Part 4 : 1941, facing p. 5]

BRITISH STANDARD SPECIFICATIONS

Railway Rolling Stock Material

STEEL FORGINGS BLOOMS AND CASTINGS

B.S. 24 : PART 4 : 1941

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CO-OPERATING ORGANISATIONS

The Mechanical Industry Committee under whose supervision this British Standard was prepared consists of representatives from the following Government Departments, Professional Institutions and Scientific and Industrial Organisations :

- Admiralty.
- *Crown Agents for the Colonies.
- Department of Scientific and Industrial Research.
- *High Commissioner for India.
- Home Office.
- *Ministry of Transport.
- Ministry of Works and Buildings.
- *War Office.
- Agricultural and Road Machinery Manufacturers' Association.
- Association of Consulting Engineers (Incorporated).
- British Chemical Plant Manufacturers' Association.
- British Electrical and Allied Manufacturers' Association.
- British Engineers' Association.
- *British Iron and Steel Federation.
- British Marine Oil-Engine Manufacturers' Association.
- Engineering Insurance Companies.
- Institute of Marine Engineers.
- Institute of Petroleum.
- Institution of Automobile Engineers.
- Institution of Civil Engineers.
- Institution of Gas Engineers.
- Institution of Heating and Ventilating Engineers.
- Institution of Mechanical Engineers.
- Institution of Production Engineers.
- *Locomotive Manufacturers' Association.
- Machine Tool Trades Association.
- *Railway Companies of Great Britain.

The Government Departments and Scientific and Industrial Organisations marked with an asterisk in the above list, together with the following, were directly represented on the Committee entrusted with the preparation of this British Standard :

- Dominion of New Zealand.
- High Commissioner for the Union of South Africa.
- National Physical Laboratory.
- Institution of Locomotive Engineers.
- Iron and Steel Trades Employers' Association.
- Steel Castings Manufacturers' Association.
- Association of Drop Forgers and Stampers.
- British Non-Ferrous Metals Research Association.
- Railway Carriage and Wagon and Financiers' Parliamentary Association.

THESE SPECIFICATIONS having been approved by the Mechanical Industry Committee, and endorsed by the Engineering Divisional Council, were published under the authority of the General Council as British Standards on 22nd December, 1941.

First published, August, 1906.
First revision, June, 1907.
Second revision, December, 1911.
Third revision, March, 1921.
Fourth revision, September, 1930.
Fifth revision, December, 1941.

The Institution desires to call attention to the fact that these specifications are intended to include the technical provisions necessary for the supply of the material herein referred to, but do not purport to include all the necessary provisions of a contract.

The figures in British measures are to be regarded as the Standard. Approximate metric equivalents are given for the convenience of users in countries in which the metric system has been generally adopted.

In order to keep abreast of progress in the industries concerned, the British Standards are subject to periodical review. Suggestions for improvements will be recorded and in due course brought to the notice of the Committees charged with the revision of the standards to which they refer.

A complete list of British Standards, indexed and cross-indexed for reference, will be found in the Institution's Handbook.

Other parts of Report No. 24 are as follows :

- Part 1. Locomotive, Carriage and Wagon Axles.
- Part 2. Locomotive, Carriage and Wagon Tyres.
- Part 3. Laminated, Volute and Helical Springs, and Steel for Laminated Springs.
- Part 5. Copper Plates, Rods and Tubes, and Brass Tubes.
- Part 6. Steel Plates, Angles, etc., and Rivets for Locomotives, Carriages and Wagons.

BRITISH STANDARD SPECIFICATION FOR STEEL FORGINGS AND CLASS 'C' & CLASS 'D' ROLLED BARS FOR LOCOMOTIVES

QUALITY OF MATERIAL

1. The forgings and Class C and Class D rolled bars shall be manufactured from steel made by the processes and within the analysis limits as specified in the Table on page 7.

The manufacturer shall supply an analysis of each cast when required to do so.

FREEDOM FROM DEFECTS

2. The forgings and bars shall be free from injurious defects of any kind and shall be accurately finished to the prescribed dimensions within limits agreed upon between the manufacturer and the purchaser.

HEAT TREATMENT

3. Forgings in Classes A and B may be and those in Classes C and D shall be either normalised or otherwise heat treated. Bars may be heat treated at the option of the manufacturer. If so required, the manufacturer shall give to the representative of the engineer (or of the purchaser) full details of any heat treatment which has been carried out.

MECHANICAL TESTS

4. For the purpose of the mechanical tests described in Clauses 5 and 6, test samples shall be obtained as follows:

Extra forgings and bars shall be provided by the manufacturer, at his own expense, at the rate of 2 per cent of the forgings and bars ordered under the contract, but at least one tensile and one bend test shall be taken from each cast. The representative of the engineer (or the purchaser) shall select and test such of the forgings and bars as he may think proper to the extent of such percentage or number. The forgings and bars tested shall be held to represent correctly the quality of the casts from which they are made. When the number of forgings or bars ordered is less than 50, the manufacturer shall either (1) provide an extra forging or bar for testing, or (2) leave on each forging or bar a piece of not less sectional dimensions than the body of the forging or bar from which test pieces shall be taken.