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BRITISH STANDARD
SPECIFICATION

FOR

ROLLED STEEL BARS

AND

HARD DRAWN STEEL WIRE

FOR

CONCRETE REINFORCEMENT.

(SUPERSEDING B.S. No. 165—1929 AND, SO FAR AS STEEL
BARS FOR CONCRETE REINFORCEMENT ARE CONCERNED,
PARTS OF B.S. NOS. 15—1936 AND 548—1934.)

*This Specification, having been approved by the Iron and Steel Industry
Committee and endorsed by the Chairman of the Engineering Divisional
Council, was published under the authority of the General Council as a British
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The Iron and Steel Industry Committee under whose supervision this British Standard was prepared consists of representatives of the following Government Departments and Scientific and Industrial Organisations:—

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Institution of Production Engineers.
Institution of Structural Engineers.
Iron and Steel Wire Manufacturers' Association.
London County Council.
North-East Coast Institution of Engineers and Shipbuilders.
Reinforced Concrete Association.

FOREWORD.

Hitherto the Standard requirements for mild steel bars for concrete reinforcement have been included in B.S. Specification No. 15-1936, Structural Steel for Bridges, etc. and General Building Construction, and those for high tensile steel bars for concrete reinforcement in B.S. Specification No. 548-1934, High Tensile Structural Steel for Bridges, etc. and General Building Construction. For hard drawn steel wire for concrete reinforcement reference had to be made to a third specification, viz., B.S. Specification No. 165-1929.

Both Users and Manufacturers felt that it would be a convenience if a single Standard Specification were prepared to cover the various qualities of steel used for concrete reinforcement both in the form of bars and wire. Under the authority of the Iron and Steel Industry Committee the present Specification has therefore been prepared and the opportunity has been taken of including steel bars of medium tensile strength ranging between 33 and 38 tons per sq. inch.

See
Ac/10
4 In order to keep abreast of progress in the Industries concerned, the British Standards are subject to periodical review.

Suggestions for improvements, addressed to the British Standards Institution, 28 Victoria Street, London, S.W.1, will be welcomed at all times. They will be recorded, and in due course brought to the notice of the Committees charged with the revision of the Publications to which they refer.

As added
15, 1938.

Where a copy of B.S. 165-1929 is required for the purposes of Building By-Laws it may be obtained on application to the Publications Department of the British Standards Institution, price 2/- post free.

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NOTE.—The Institution desires to call attention to the fact that this Specification is intended to include the technical provisions necessary for the supply of the material herein referred to, but does not purport to include all the necessary provisions of a contract.

BRITISH STANDARD

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10

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NOTE.—(1) This Specification is not intended to apply to rolled steel bars or hard drawn steel wire which have been subjected to any form of manipulation or treatment after being rolled or drawn which has the effect of altering the characteristics of the steel.

(2) The class of steel bar required, viz., Mild, Medium or High 20 Tensile, must be stated in the enquiry or order.

PART 1. DEFINITIONS.

1. (a) *Bar*.—The term "bar" shall denote a bar of steel of any form of cross section as rolled and shall be held to include a rod of steel.

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(b) *Wire*.—The term "wire" or "hard drawn wire" shall denote cold drawn steel wire of any form of cross section.

(c) *Coil*.—The term "coil" shall denote one continuous bar as rolled or piece of wire as drawn, without joint or weld, in the form of a coil.

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(5)

(d) *Length*.—The term "length" shall denote a piece of straight bar or wire, without joint or weld, cut to a specified length.

(e) *Bundle*.—The term "bundle" shall denote two or more coils or a number of lengths properly bound together.

(f) *Parcel*.—The term "parcel" shall denote any quantity of 5 bars or finished wire whether in coils or bundles presented for examination and test at any one time.

PART 2. BARS.

Process of Manufacture.

See Audit 3

2. All bars under this Specification shall be of mild, medium or 10 high tensile steel as specified by the Engineer or the Purchaser, and shall be made by the Open-Hearth (Acid or Basic) process or by the Acid Bessemer process at the option of the Maker, unless one of these processes is required or specified. Mild and medium tensile steels must show on analysis not more than 0.06 per cent of sulphur 15 or of phosphorus and high tensile steel not more than the following:—

Carbon	...	...	...	...	0.30 per cent
Sulphur	...	...	...	...	0.05 "
Phosphorus	...	...	...	...	0.05 "

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Quality of Steel.

3. All bars shall be well and cleanly rolled and shall, subject to the provisions of Clause 13, conform to the dimensions specified or required. They shall be sound and free from cracks, surface flaws, laminations, rough, jagged and imperfect edges and all other 25 defects, and shall in all respects comply with the tests and requirements herein mentioned or specified.

Tensile Test Pieces.

4. The tensile breaking strength, yield point (where specified) and elongation of the steel shall be determined from test pieces cut 30 from the bars as rolled and straightened where necessary.

No test piece shall be annealed or otherwise subjected to heat treatment unless the material from which it is cut is similarly treated, in which case the test piece shall be similarly and simultaneously treated with the material before testing. Any straighten- 35 ing which any test piece may require shall be done cold.