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SPECIFICATION FOR
STEEL CASTINGS FOR
GENERAL ENGINEERING
PURPOSES

BS 3100 : 1967

COMPRISING

BS 592	BS 1463	BS 1760
BS 1398	BS 1617	BS 4239
BS 1456	BS 1630	BS 4240
BS 1457	BS 1631	BS 4241
BS 1458	BS 1632	BS 4242
BS 1461	BS 1648	BS 1956
BS 1462	BS 4238	

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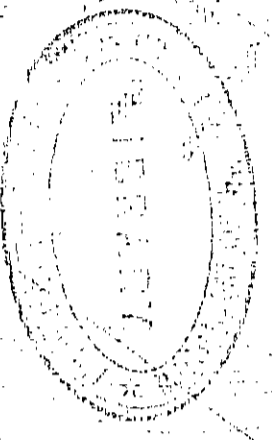
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THIS BRITISH STANDARD, having been approved by the Iron and Steel Industry Standards Committee and endorsed by the Chairman of the Engineering Divisional Council, was published under the authority of the General Council on 29 December, 1967.

First published in combined form in August, 1957.

This revision of the combined standard includes the following British Standards:

BS No.	First published	First revision	Second revision	Third revision	Fourth revision
592	March, 1935	July, 1940	October, 1950	August, 1957	December, 1967
1398	August, 1947				
1456	July, 1948				
1457	July, 1948	August, 1957	Dec., 1967		
1458	July, 1948				
1459	July, 1948				
1461	December, 1948				
1462	December, 1948				
1463	December, 1948				
1617	February, 1950				
1630	March, 1950				
1631	March, 1950				
1632	March, 1950				
1648	March, 1950				
4238	December, 1967				
1760	July, 1961	August, 1957	Dec., 1967		
4239	December, 1967				
4240	December, 1967				
4241	December, 1967				
4242	December, 1967				
1956	March, 1955	August, 1957	Dec., 1967		

The Institution desires to call attention to the fact that this British Standard does not purport to include all the necessary provisions of a contract.

In order to keep abreast of progress in the industries concerned, 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, numbering over 4000, fully indexed and with a note of the contents of each, will be found in the British

Standards Yearbook, price 15s. The BS Yearbook may be consulted in many public libraries and similar institutions.

This standard makes reference to the following British Standards:

- BS 18. Methods for tensile testing of metals.
- BS 131. Methods for notched bar tests.
 - Part 1. Izod impact test.
 - Part 2. Charpy V-notch.
- BS 240. Method for Brinell hardness test.
- BS 1719. Classification, coding and marking of covered electrodes for metal-arc welding.
 - Part 1. Classification and coding.
- BS 2454. Methods for the determination of magnetic permeability of iron and steel bars, forgings and castings.
- BS 4080. Methods for non-destructive testing of steel castings.

British Standards are revised, when necessary, by the issue either of amendment slips or of revised editions. It is important that users of British Standards should ascertain that they are in possession of the latest amendments or editions.

The following BSI references relate to the work on this standard:
Committee reference ISE/6 Draft for comment D65/13744

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CO-OPERATING ORGANIZATIONS

The Iron and Steel Industry Standards Committee, under whose supervision this British Standard was prepared, consists of representatives from the following Government departments and scientific and industrial organizations:

- Alloy Steels Association
 - *Board of Trade
 - British Bolt, Nut, Screw and Rivet Federation
 - British Cast Iron Research Association
 - British Constructional Steelwork Association
 - *British Electrical and Allied Manufacturers' Association
 - *British Iron and Steel Federation
 - British Ironfounders' Association
 - *British Mechanical Engineering Federation
 - British Railways Board
 - *British Steel Castings Research Association
 - Council of Ironfoundry Associations
 - Council of Iron Producers
 - Crown Agents for Oversea Governments and Administrations
 - Engineering Equipment Users' Association
 - Federation of Civil Engineering Contractors
 - Institute of British Foundrymen
 - Institute of Iron and Steel Wire Manufacturers
 - *Institute of Marine Engineers
 - Institution of Civil Engineers
 - Institution of Mechanical Engineers (Automobile Division)
 - Institution of Production Engineers
 - Institution of Structural Engineers
 - Iron and Steel Board
 - Iron and Steel Institute
 - Joint Iron Council
 - *Lloyd's Register of Shipping
 - *Ministry of Defence, Army Department
 - *Ministry of Defence, Navy Department
 - *Ministry of Labour (H.M. Factory Inspectorate)
 - National Association of Drop Forgers and Stampers
 - National Physical Laboratory (Ministry of Technology)
 - Oil Companies Materials Association
 - Royal Institute of British Architects
 - Shipbuilding Employers' Federation
 - Society of British Aerospace Companies Ltd.
 - Society of Motor Manufacturers and Traders Ltd.
 - Stainless Steel Development Association
- The scientific and industrial organizations 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:
- British Chemical Plant Manufacturers' Association
 - British Gear Manufacturers' Association
 - Council of British Manufacturers of Petroleum Equipment
 - Institution of Engineering Inspectors
 - Institution of Mechanical Engineers
 - Individual companies

BRITISH STANDARD SPECIFICATION FOR

STEEL CASTINGS FOR

GENERAL ENGINEERING PURPOSES

FOREWORD

This British Standard, the present revision of which has been prepared under the authority of the Iron and Steel Industry Standards Committee, was first published in its combined form in 1957.

In preparing this revision, account has been taken of the demand for castings to the various specifications included in the previous edition, and as a result some grades are no longer included and others have been added.

The increasing demand for castings for low temperature applications has been recognized by the incorporation of additional steels suitable for such application and the specification of impact properties for such castings. The opportunity has also been taken to review and improve the chemical composition requirements, generally by a reduction of the maximum copper, sulphur and phosphorus contents and, where desirable, by limiting other residual elements.

The steels have been designated by the British Standard number used in the previous edition of BS 3100 or, in the case of new steels, a new number has been allocated. It is intended, however, that these designations should be abandoned in favour of a new system, probably one which will align with that being formulated to replace the En numbering system in BS 970. 'Wrought steels' which is also being revised. The new designations will be introduced when finalized, either by amendment action or in a new edition of the standard.

SPECIFICATION

1. GENERAL REQUIREMENTS

1.1 SCOPE

This British Standard specifies requirements for steel castings for general engineering purposes.

The individual material specifications in Section 2 cover a range of steels suitable for a variety of applications. In Appendix B, details are given of the range of steels included.

NOTE 1. In place of the customary, but incorrect, use of the ton as a unit of force, the unit called a ton force (abbreviation tonf) has been used in this standard. It is that force which, when acting on a body of mass one ton gives it an acceleration equal to that of standard gravity.

NOTE 2. Where metric equivalents are stated, the figures in British units are to be regarded as the standard. The metric conversions are approximate. More accurate conversions should be based on the tables in BS 350, 'Conversion factors and tables'.