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BRITISH STANDARD SPECIFICATION

FOR

LOCO-TYPE MULTITUBULAR BOILERS.

This Specification, having been approved by the Mechanical Industry Committee and endorsed by the Chairman of the Engineering Divisional Council, was published under the authority of the General Council as a British Standard on 18th November, 1940.

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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 and Scientific and Industrial Organisations :—

*Admiralty.
Crown Agents for the Colonies.
Department of Scientific and Industrial Research.
*High Commissioner for India.
*H.M. Office of Works.
*Home Office.
Ministry of Transport.
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 :—

Board of Trade.
British Coal Utilisation Research Association.
Combustion Appliance Makers' Association.
Incorporated Municipal Electrical Association.
Institution of Electrical Engineers.

FOREWORD.

The formulæ in Section 4 of this Specification give in all cases the minimum scantlings, and apply to boilers constructed throughout under independent supervision and working under average normal conditions of draught, good feed water and adequate maintenance supervision.

Where working conditions are adverse, *e.g.*, abnormal evaporation, corrosive or bad feed water, exposure to the elements, or where of necessity maintenance supervision will be inadequate, it is recommended that the minimum scantlings found by calculation from the formulæ given should be increased.

The simplest method of compensation for adverse conditions of the kind is to design for an increased working pressure, having regard to the probable reduction of life in service due to the adverse causes.

This Specification forms one of a series of Specifications for Boilers, the preparation of which was authorised by the Mechanical Industry Committee.

Other Specifications in this series are :—

Lancashire and Cornish Boilers, B.S. 537.
Multitubular Horizontal Boilers (Dryback and Waste Heat), B.S. 609.
Vertical Cross Tube Boilers, B.S. 665.
Vertical Multitubular Boilers, B.S. 761.
*Water Tube Boilers.
*Miniature Boilers.
Cast Iron Boilers for Central Heating and Hot Water Supply, B.S. 779.
Riveted Steel Boilers for Central Heating and Hot Water Supply, B.S. 780.
Welded Steel Boilers for Central Heating and Hot Water Supply, B.S. 855.
Welded Steel Boilers for Steam Central Heating, B.S. 854.
Calorifiers, B.S. 853.

The terms "maximum permissible working pressure" and "safety valve blow-off pressure" are used in the series of British Standard Specifications for boilers and boiler fittings. These terms, for the purposes of this Specification, shall be defined as follows :—

The maximum permissible working pressure is the maximum pressure at which a boiler may be operated.

* In course of preparation.

The safety valve blow-off pressure is that at which the safety valves shall be set to prevent the boiler being worked at a pressure greater than the maximum permissible working pressure.

The Factories Act, 1937, requires that the steam pressure gauge fitted to a boiler shall have marked upon it in a distinctive colour, the maximum permissible working pressure. (See Clause 46, B.S. 759, Valves, Gauges and Similar Fittings for Land Boiler Installations.)

NOTE.—*It is desirable that there should be a margin between the actual pressure at which the boiler is to be operated and the set blow-off pressure to prevent the unnecessary blowing off of the safety valves.*

This Specification requires reference to the following British Standards :—

No. 21. Pipe Threads, Part I, Basic Sizes and Tolerances.

No. 51. Wrought Iron for General Engineering Purposes (Grade A).

No. 84. Screw Threads, British Standard Fine, and their Tolerances.

No. 425. Boiler Rivets, Forms and Dimensions of.

No. 494. Cold Drawn Weldless Steel Boiler and Superheater Tubes for Designed Steam Temperatures not exceeding 850°F.

No. 512. Hot Finished Weldless Steel Boiler and Superheater Tubes for Designed Steam Temperatures not exceeding 850°F.

No. 527. Lap Welded Wrought Iron Boiler Tubes for External Pressure.

No. 528. Lap Welded Steel Boiler Tubes for External Pressure.

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.

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 SPECIFICATION FOR LOCO-TYPE MULTITUBULAR BOILERS.

1. GENERAL.

Scope.

1. This Specification applies to loco-type multitubular boilers for stationary, semi-portable or portable purposes and to loco-type boilers for road rollers and traction engines.

This Specification does not apply to railway locomotive boilers.

Brickwork setting, insulation, mountings, chimney, damper and furnace fittings do not come within the scope of this Specification, although the boiler(s) shall be complete with mountings, chimney, damper and furnace fittings unless the same are specifically excluded in the enquiry or order. The type of mountings, furnace fittings and length of chimney and damper to be supplied shall be agreed between the Purchaser and the Manufacturer. In default of specific instructions to the contrary (in the enquiry or order), the furnace fittings shall be for hand firing and natural draught, and the mountings shall be suitable for the boiler working as an independent unit.

NOTE.—Gas or Oil Burning Equipment, Forced or Induced Draught Equipment, or other accessories which may be required by the Purchaser, are extraneous to this Specification and are matters for mutual arrangement between the Purchaser and the Manufacturer. Where such accessories are required or contemplated it is recommended that all particulars which would affect the boiler(s) should be disclosed by the Purchaser to the Manufacturer at the time of the enquiry.

This Specification does not apply to boilers having barrels less than 24 inches in diameter.

Information to be supplied with the Enquiry or Order.

2. The information required by Appendix A (p. 37) should be supplied with the enquiry.

Information to be supplied by the Manufacturer.

3. (*a*) The Manufacturer shall, if required by the Purchaser, supply with the tender the information required by Appendix B (p. 39).