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Incorporating Corrigendum No. 1



BSI Standards Publication

Specification for flanges and bolting for pipes, valves and fittings

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pages i to iv, pages 1 to 42, an inside back cover and a back cover.

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Publishing information

This British Standard is published by  BSI Standards Limited, under licence from The British Standards Institution  and came into effect on 30 April 2009. It was prepared by Technical Committee PSE/15, *Flanges*. A list of organizations represented on this committee can be obtained on request to its secretary.

Supersession

This British Standard supersedes BS 10:1962, which is withdrawn.

Information about this document

The start and finish of text introduced or altered by Corrigendum No. 1 is indicated in the text by tags  and .

It should be noted that, apart from cast iron flanges, the hydraulic test pressure applied to a flange joint is limited to one-and-a-half times the highest rated pressure of the flange (see Clause 8).

This is a full revision of the standard, and introduces the following principal changes:

- Materials have been updated;
- The standard has been re-arranged to reflect the most common used materials and types in service;
- Review of tables:

BS 10 flanges have been in use since 1904 and have been developed continuously to meet increasing pressure and temperature requirements. At the time of this revision, flange joints with carbon steel pipe flanges for high temperatures and pressures to the British Standard tables have been in service throughout the world for periods equal to the economic life of primary plant. The tables have therefore remained in the standard for guidance.

NOTE When it is required to convert the figures in this standard from imperial units into metric units it is recommended that the conversion factors and the table of conversion contained in BS 350, "Conversion factors and tables", be used. Attention is also drawn to BS 2856, "Precise conversion of inch and metric sizes on engineering drawings".

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is "shall".

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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This British Standard specifies requirements for a series of carbon steel, alloy steel, cast iron and copper alloy flanges, and also appropriate bolts and nuts, for use with pipes, valves and fittings containing steam, oil, compressed air or water.

NOTE 1 The use of flanges complying with this standard for temperatures below -17.8°C (0°F) should be agreed between purchaser and manufacturer. These flanges may also be used on pipes, valves and fittings carrying other fluids for which the same requirements for safety and joint tightness are appropriate.

The applicability relationship between temperature and pressure for the above materials is specified for each table of flanges in Table 2 and Annex B.

NOTE 2 The types of gasket, and gasket materials, and the surface finish of the jointing face are matters for agreement between the purchaser and the manufacturer. When a raised jointing face is specified the outside diameter of the gasket should extend at least to the outside diameter of the raised face. For steel flanges when a raised jointing face is not specified, the gasket should be within the bolt holes.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS 21, *Specification for pipe threads for tubes and fittings where pressure-tight joints are made on the threads (metric dimensions)*

BS 84, *Parallel screw threads of Whitworth form – Requirements*

BS 916, *Specification for black bolts screws and nuts – Hexagon & square, with B.S.W. threads, and partly machined bolts, screws & nuts, hexagon & square with B.S.W. or B.S.F. threads*

BS 1580-1, *Unified screw threads – Part 1: Screw threads with diameters $\frac{1}{4}$ in and larger – Requirements*

BS 1769, *Specification for unified black hexagon bolts, screws and nuts – (UNC and UNF threads) – heavy series*

BS 3410, *Specification for metal washers for general engineering purposes*

BS EN 10090, *Wrought steels in the form of bars, billets, and forgings, up to 6 in ruling section, for automobile and general engineering purposes – En series*

BS EN 10025-2, *Hot rolled products of structural steels – Part 2: Technical delivery conditions for non-alloy structural steels*

BS EN 10222-2, *Steel forgings for pressure purposes – Part 2: Ferritic and martensitic steels with specified elevated temperature properties*

BS EN 13480 Parts 1-5, *Metallic industrial piping*

BS EN 14324, *Brazing – Guidance on the application of brazed joints*

BS ISO 10204, *Iron ores – Determination of magnesium – Flame atomic absorption spectrometric method*