

Specification for

Butt-welding pipe fittings —

For pressure purposes —

Part 1: Carbon steel

UDC 621.643.4 – 186:621.791.762.1:669.14

Co-operating organizations

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

Admiralty	Gas Council*
Air Ministry	High Commission of India
Associated Offices' Technical Committee*	Institute of Marine Engineers
Association of Consulting Engineers (Incorporated)	Institute of Petroleum
Association of Mining Electrical and Mechanical Engineers	Institution of Civil Engineers
British Chemical Plant Manufacturers' Association*	Institution of Gas Engineers*
British Compressed Air Society	Institution of Heating and Ventilating Engineers*
British Electrical and Allied Manufacturers' Association	Institution of Mechanical Engineers
British Engineers' Association	Institution of Mechanical Engineers (Automobile Division)
British Gear Manufacturers' Association	Institution of Production Engineers
British Internal Combustion Engine Manufacturers' Association	Locomotive and Allied Manufacturers' Association of Great Britain
British Iron and Steel Federation*	Machine Tool Trades Association
British Railways Board	Ministry of Labour (H.M. Factory Inspectorate)
Crown Agents for Oversea Governments and Administrations	Ministry of Power
D.S.I.R.-National Engineering Laboratory	Ministry of Public Building and Works
Electricity Council, the Generating Board and the Area Board in England and Wales*	Ministry of Transport*
Engineering Equipment Users' Association	National Coal Board
	National Physical Laboratory (D.S.I.R.)
	Radio Industry Council
	War Office

The Government departments and 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 standard:

Association of Heating, Ventilating & Domestic Engineering Employers	Metropolitan Water Board
Institute of Welding	Water-tube Boilermakers Association
Institution of Municipal Engineers	Wrought Fittings Makers Association
Lloyd's Register of Shipping	Individual firm

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Foreword

A complete list of British Standards, numbering over 9,000, fully indexed and with a note of the contents of each, will be found in the BSI Catalogue which may be purchased from BSI Sales Department. The Catalogue may be consulted in many public libraries and similar institutions.

This standard makes reference to the following British Standards:

BS 10, *Flanges and bolting for pipes, valves and fittings*.

BS 350, *Conversion factors and tables*.

BS 806, *Ferrous pipes and piping installations for and in connection with land boilers*.

BS 970, *Wrought steels. En series*.

BS 1501, *Steels for fired and unfired pressure vessels. Plates*.

BS 1640, *Steel butt-welding pipe fittings for the petroleum industry*.

BS 1821, *Class I oxy-acetylene welding of steel pipelines and pipe assemblies for carrying fluids*.

BS 2633, *Class I metal-arc welding of steel pipelines and pipe assemblies for carrying fluids*.

BS 2640, *Class II oxy-acetylene welding of steel pipelines and pipe assemblies for carrying fluids*.

BS 2971, *Class II metal-arc welding of steel pipelines and pipe assemblies for carrying fluids*.

BS 3601, *Steel pipes and tubes for pressure purposes — Carbon steel — ordinary duties*.

BS 3602, *Steel pipes and tubes for pressure purposes — Carbon steel — high duties*.

This British Standard was first published in 1953 and the present revision has been carried out with the main object of including the following developments:

- a) the use of electric resistance welded (E.R.W.) pipe;
- b) the raising of the minimum tensile requirements for the steel from 23 to 27 tonf/in² (36 to 42 kgf/mm²);
- c) the inclusion of 14 inch and 16 inch nominal size fittings;
- d) *Text deleted*.
- e) the inclusion of equal tees.

It relates to butt-welding fittings for pressure purposes for use with pipe to BS 3601¹⁾ and BS 3602²⁾.

The range of fittings and the range of sizes covered have been chosen to meet existing demands. In view of the wide diversity of use of these fittings, the user should satisfy himself that they are suitable for the conditions intended.

The complementary standard for steel butt-welding fittings for the petroleum industry is BS 1640.

Part 2 of this standard which dealt with austenitic stainless steel butt-welding fittings has been withdrawn.

NOTE 1 The figures in British units are regarded as standard. Metric conversions of the outside diameters and thicknesses of pipes and of the dimensions and tolerances of elbows and return bends given in Appendix B. Table 11 and Table 12 are ISO agreed corresponding values; other metric conversions are given in Appendix B. Table 13 are approximate and more accurate conversions of these should be based on Tables in BS 350, "Conversion factors and tables".

¹⁾ BS 3601. "Steel pipes and tubes for pressure purposes: carbon steel with specified room temperature properties".

²⁾ BS 3602. "Specification for steel pipes and tubes for pressure purposes: carbon and carbon manganese steels with specified elevated temperature properties".

NOTE 2 In place of the customary, but incorrect, use of the pound and kilogramme as units of force, the units called pound-force (abbreviation lbf) and kilogramme-force (abbreviation kgf) have been used in this standard. These are the forces which, when acting on a body of mass one pound or one kilogramme respectively, give it an acceleration equal to that of standard gravity. The unit called ton-force (abbreviation tonf) has also been used where appropriate.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 10 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

