



BSI Standards Publication

**Specification for mechanical fittings  
for use in the repair, connection and  
renovation of pressurized water  
supply pipelines — Requirements and  
test methods**

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# Foreword

## Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 30 November 2021. It was prepared by Technical Committee B/504, *Water supply*. A list of organizations represented on this committee can be obtained on request to the committee manager.

## Supersession

This British Standard supersedes [BS 8561:2013](#), which is withdrawn.

## Information about this document

This British Standard consists of the following sections under the main title "Mechanical fittings for polyethylene barrier pipe and mechanical fittings for use in the repair, connection and renovation of pressurized water supply pipelines – Requirements and test methods".

[Section 1](#): General requirements

[Section 2](#): Mechanical fittings for polyethylene barrier pipe

[Section 3](#): Mechanical fittings for use in the repair, connection and renovation of pressurized water supply pipelines

Fittings for repair and renovation of an existing water supply pipe include (but are not necessarily limited to) repair clamps and joint encapsulation units. Fittings for joining of new pipe to existing pipe include (but are not necessarily limited to) street bonded couplings, wide tolerance couplings, flange adaptors and under pressure tees. This standard does not cover fittings for connection of new polyethylene pipes or new ductile iron pipes for which European or International Standards exist.

Where appropriate, ISO test methods have been used. The test loads for resistance to pull-out test have been aligned with IGN 4-01-07 [2017] [N3].

The hydrostatic tests included in [Section 2](#) of this standard are consistent with tests on polyethylene barrier pipe to [BS 8588](#), polyethylene pipe to BS EN 12201-2 and polyethylene fittings to BS EN 12201-3.

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

- The recognition of European Standards for connection of new polyethylene pipes and new ductile iron pipes.
- The standard has been restructured to provide clear requirements and test methods for connection of new polyethylene barrier pipe ([Section 2](#)) and repair, connection and renovation of existing water supply pipes ([Section 3](#)).
- Alignment of test methods and requirements with European and International standards where possible.

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Where websites and webpages have been cited, they are provided for ease of reference and are correct at the time of publication. The location of a webpage or website, or its contents, cannot be guaranteed.

### **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.*

Where words have alternative spellings, the preferred spelling of the Shorter Oxford English Dictionary is used (e.g. “organization” rather than “organisation”).

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### **Compliance with a British Standard cannot confer immunity from legal obligations.**

In particular, attention is drawn to the following specific regulations in respect of water quality:

- Water Supply (Water Quality) (England) Regulations 2016 [1];
- Water Supply (Water Quality) (Northern Ireland) Regulations 2017 [2];
- Water Quality (Scotland) Regulations 2010 [3]; and
- Water Supply (Water Quality) (Wales) Regulations 2018 [4].

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# Section 1: General

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## 1 Scope

This British Standard specifies the requirements and associated test methods for mechanical fittings intended to:

- a) join polyethylene pressure pipes with an aluminium barrier layer for the supply of cold potable water for installation in contaminated land;
- b) join new water supply pipes to existing water supply pipes for the purposes of repair, branch connections or pipeline renovation; and
- c) repair existing water supply pipes.

It also specifies requirements for materials and dimensions and mechanical properties for mechanical fittings.

It applies to fittings:

- 1) in the diameter range of DN 50 to DN 1 200 made for use on grey iron, ductile iron; steel; or polyvinyl chloride (PVC-U, PVC-O);
- 2) in the diameter range of DN 63 to DN 1 000 made for use on polyethylene pipe; and
- 3) in the diameter range DN 63 to DN 630 made for use on polyethylene barrier pipe.

*NOTE* Fittings are not made or tested for use on fibre cement and glass-reinforced polyester (GRP) pipes. Where there is a requirement for connection to existing pipework from these materials, advice may be sought from a fitting manufacturer.

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## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes provisions of this document<sup>1)</sup>. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

### Standards publications

[BS 4190](#), *Isometric black hexagon bolts, screws and nuts – Specification*

[BS 8588](#), *Polyethylene pressure pipe with an aluminium barrier layer and associated fittings for potable water supply in contaminated land – Size 20 mm to 630 mm*

BS EN 611-1, *Elastomeric seals – Material requirements for pipe joint seals used in water and drainage applications – Vulcanized rubber*

BS EN 1092-1, *Flanges and their joints – Circular flanges for pipes, valves, fittings and accessories, PN designated – Part 1: Steel flanges*

BS EN 1092-2, *Flanges and their joints – Circular flanges for pipes, valves, fittings and accessories, PN designated – Cast iron flanges*

BS EN 1563, *Founding – Spheroidal graphite cast irons*

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

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<sup>1)</sup> Documents that are referred to solely in an informative manner are listed in the Bibliography.