BS 7291-3:2010+A1:2023



BSI Standards Publication

Thermoplastics pipe and fitting systems for hot and cold water for domestic purposes and heating installations in buildings

Part 3: Specification for cross-linked polyethylene (PE-X) pipes and associated fittings

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Foreword

Publishing Information

This part of BS 7291 is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 30 April 2010. It was prepared by Subcommittee ⟦A1⟩ PRI/88/2, *Plastic piping for pressure applications* ⟨A1⟧, under the authority of Technical Committee PRI/88, *Plastics piping systems*. A list of organizations represented on these committees can be obtained on request to the committee manager.

Supersession

BS 7291-3:2010+A1:2023 supersedes BS 7291-3:2010, which is withdrawn.

Information about this document

Text introduced or altered by Amendment No. 1 is indicated in the text by tags ⟦A1⟩ ⟨A1⟧. Minor editorial changes are not tagged.

Attention is drawn to BS 7291-2, which gives corresponding requirements for polybutylene (PB) pipes and associated fittings.

Attention is also drawn to BS 5955-8, which gives requirements and guidance on the correct application and installation of thermoplastics pipes and fittings for the conveyance of domestic hot and cold water.

Product certification/inspection/testing. Users of this part of BS 7291 are advised to consider the desirability of third-party certification/inspection/testing of product conformity to this part of BS 7291. Appropriate conformity attestation arrangements are described in BS EN ISO/IEC 17025. Users seeking assistance in identifying appropriate conformity assessment bodies or schemes may ask BSI to forward their enquiries to the relevant association.

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The provisions of this document 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”).

Requirements in this document are drafted in accordance with the *Rules for the structure and drafting of UK standards:2022*, subclause **G.1.1**, which states, “Requirements should be expressed using wording such as: ‘When tested as described in Annex A, the product shall ...’”. This means that

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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:

- The Health and Safety at Work, etc Act 1974 [1]
- The Water Supply (Water Fittings) Regulations 1999 [2]

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1 Scope

This part of BS 7291 specifies general requirements and methods of test for cross-linked polyethylene (PE-X) pipes and fitting systems intended for use within buildings for the conveyance of cold water, including drinking water, and heated water for use in domestic hot and cold water distribution and heating installations. These requirements supplement the general requirements in BS 7291-1 which are also applicable.

NOTE 1 Before reading this part, it is essential to read BS 7291-1.

NOTE 2 Methods of test are given in Annex A and Annex B. Annex C gives guidance on factory control procedures.

This British Standard specifies general requirements for materials to be used for or in the form of PE-X pipes, with or without a barrier layer or associated fittings and components. Particular requirements are also specified for PE-X pipe alone or jointed with push-fit and compression fittings conforming to BS 7291 or other British Standards intended for use with pipes conforming to this part.

This part of BS 7291 provides for pipes dimensioned to suit two established metric series: BS ISO 4065 for thermoplastics pipes generally and BS EN 1057 for compatibility with copper pipework systems widely used for these applications.

This British Standard is applicable only to Class "S" pipes and fittings.

It does not specify dimensional requirements for fittings because the performance requirements specified for fittings, when tested individually or in assemblies with pipe, are intended to ensure that the dimensions of the fittings are satisfactory for jointing purposes and pressure containment.

NOTE 3 Pipes and fittings of non-barrier PE-X are to some extent permeable to oxygen; hence, if they are used for the primary circuit(s) of a heating system, it might be beneficial to add a corrosion inhibitor to the fluids circulating therein. In such a case the manufacturer(s) of the pipe and/or fitting should, upon request, provide advice in accordance with BS 5955-8. This advice should include selection of a compatible corrosion inhibitor and/or methods for reducing the permeability.

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 3412, *Methods of specifying general purpose polyethylene materials for moulding and extrusion*

BS 5214-2, *Specification for testing machines for rubbers and plastics – Part 2: Constant rate of force application machines*

〖A1〗 BS 7291-1:2010+A1:2023 〈A1〉, *Thermoplastics pipes and associated fittings for hot and cold water for domestic purposes and heating installations in buildings – Part 1: General requirements*

BS 7291-2, *Thermoplastics pipes and associated fittings for hot and cold water for domestic purposes and heating installations in buildings – Part 2: Specification for polybutylene (PB) pipes and associated fittings*

BS EN 681-1:1996, *Elastomeric seals – Material requirements for pipe joint seals used in water and drainage applications – Part 1: Vulcanized rubber*

BS EN 1057, *Copper and copper alloys – Seamless, round copper tubes for water and gas in sanitary and heating applications*

〖A1〗 Text deleted 〈A1〉

BS EN ISO 1043-1, *Plastics – Symbols – Part 1: Basic polymers and their special characteristics*

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