



BSI Standards Publication

Multilayer piping systems for hot and cold water installations inside buildings

Part 2: Pipes

National foreword

This British Standard is the UK implementation of EN ISO 21003-2:2008+A1:2011. It is identical to ISO 21003-2:2008, incorporating amendment 1:2011. It supersedes BS EN ISO 21003-2:2008, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PRI/88/2, Plastics piping for pressure applications.

A list of organizations represented on this committee can be obtained on request to its committee manager.

As the scope of this standard does not cover multilayer piping systems for installations having service conditions in excess of those in Table 1 of BS EN ISO 21003-1:2008, the UK committee advises users to consult BS 7291-1:2010+A1:2023 when applying this standard.

BS 7291-1:2010+A1:2023 gives the Class “S” service conditions for sealed central heating systems and indirect hot water primary circuits in which the maximum system service temperature is 105 °C and the system malfunction temperature is 114 °C. As both of these temperatures are significantly in excess of those specified in Table 1 of BS EN ISO 21003-1:2008, and sealed central heating systems and indirect hot water primary circuits are therefore not covered by it, the UK committee advises that multilayer piping systems conforming to the requirements of this standard should also be subjected to the temperatures given in Table 1 of BS 7291-1:2010+A1:2023.

The UK committee also advises users that:

- a) The normal maximum operating cold water supply pressure in the UK is 12.5 bar (1 bar = 100 kPa), which some categories of piping systems in the BS EN ISO 21003 series of standards do not meet.
- b) There is a disparity between the malfunction temperature quoted in Table 1 of BS EN ISO 21003-1:2008 (100 °C) and the malfunction temperatures applicable to boilers conforming to the requirements of BS EN 15502-1:2021+A1:2023, BS EN 15502-2-1:2022+A1:2023 and BS EN 15502-2-2:2014 (110 °C). Consequently, piping systems used with these gas-fired central heating boilers could be subjected to temperatures in service for which they have not been tested.
- c) Piping systems conforming to the requirements of the BS EN ISO 21003 series of standards are designed for hot and cold water installations and are not suitable for waste discharge from unvented hot water systems (i.e. downstream pipe D2).
- d) Continuously operated recirculating domestic hot water systems (known as recirculating, secondary hot circulation, return or ring main systems) carry pumped hot potable water to outlets where the temperature is between 60 °C and 70 °C, and is replenished by an incoming water supply to replace the water drawn to outlets. Piping systems conforming to the requirements of the BS EN ISO 21003 series of standards are not suitable for this use.

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Date	Text affected
31 July 2011	Implementation of ISO amendment 1:2011 with CEN endorsement A1:2011: addition of text to Clauses 5.1 and 10.2.2
31 May 2024	Correction to national foreword

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 21003-2:2008+A1

April 2011

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English Version

**Multilayer piping systems for hot and cold water installations
inside buildings - Part 2: Pipes (ISO 21003-2:2008)**

Systèmes de canalisations multicouches pour installations
d'eau chaude et froide à l'intérieur des bâtiments - Partie 2:
Tubes (ISO 21003-2:2008)

Mehrschichtverbund-Rohrleitungssysteme für die Warm-
und Kaltwasserinstallation innerhalb von Gebäuden - Teil 2:
Rohre (ISO 21003-2:2008)

This European Standard was approved by CEN on 15 June 2008.

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Foreword

This document (EN ISO 21003-2:2008) has been prepared by Technical Committee ISO/TC 138 "Plastics pipes, fittings and valves for the transport of fluids" in collaboration with Technical Committee CEN/TC 155 "Plastics piping systems and ducting systems", the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2009, and conflicting national standards shall be withdrawn at the latest by January 2009.

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Endorsement notice

The text of ISO 21003-2:2008 has been approved by CEN as a EN ISO 21003-2:2008 without any modification.

Foreword to amendment A1

This document (EN ISO 21003-2:2008/A1:2011) has been prepared by Technical Committee ISO/TC 138 "Plastics pipes, fittings and valves for the transport of fluids" in collaboration with Technical Committee CEN/TC 155 "Plastics piping systems and ducting systems" the secretariat of which is held by NEN.

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Endorsement notice

The text of ISO 21003-2:2008/Amd 1:2011 has been approved by CEN as a EN ISO 21003-2:2008/A1:2011 without any modification.

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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ISO 21003-2 was prepared by Technical Committee ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*, Subcommittee SC 2, *Plastics pipes and fittings for water supplies*.

ISO 21003 consists of the following parts, under the general title *Multilayer piping systems for hot and cold water installations inside buildings*:

- *Part 1: General*
- *Part 2: Pipes*
- *Part 3: Fittings*
- *Part 5: Fitness for purpose of the system*
- *Part 7: Guidance for the assessment of conformity* [Technical Specification]

NOTE ISO 21003 does not include a Part 4: *Ancillary equipment*, or a Part 6: *Guidance for installation*.

Introduction

The system standard of which this is Part 2 specifies the requirements for a multilayer piping system.

The multilayer piping system is intended to be used for hot and cold water installations inside buildings.

In respect of potentially adverse effects on the quality of water intended for human consumption caused by the products covered by ISO 21003:

- no information is provided as to whether the products may be used without restriction in any of the member states of the EU or EFTA;
- it should be noted that, while awaiting the adoption of verifiable European criteria, existing national regulations concerning the use and/or the characteristics of these products remain in force.

Requirements and test methods for material and components other than pipes are specified in ISO 21003-1 and ISO 21003-3. Characteristics relating to fitness for purpose (mainly for joints) are covered in ISO 21003-5. ISO/TS 21003-7 gives guidance on the assessment of conformity.

This part of ISO 21003 specifies the characteristics of pipes.

Other system standards which, at the date of publication of this part of ISO 21003, had been published for plastics piping systems used for the same application are listed in Annex A.