

Plastics piping systems for hot and cold water installations — Polypropylene (PP) —

Part 3: Fittings

The European Standard EN ISO 15874-3:2003 has the status of a British Standard

ICS 23.040.45; 91.140.60

National foreword

This British Standard is the official English language version of EN ISO 15874-1:2003. It is identical with ISO 15874-1:2003.

The UK participation in its preparation was entrusted by Technical Committee PRI/88, Plastics piping systems, to Subcommittee PRI/88/2, Plastics piping systems for pressure applications, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

Additional information

The UK voted against the acceptance of this standard at the CEN Formal Vote, and PRI 88/2 will maintain BS 7291-1:2001¹⁾, BS 7291-2:2001²⁾ and BS 7291-3:2001³⁾ and strongly recommends the continued use of polybutylene (PB) and crosslinked polyethylene (PE-X) piping systems certified to BS 7291-2 or BS 7291-3, Class S, for the following reasons.

a) Attention is drawn to the statement in the Scope of BS EN ISO 15874-1 relating to the exclusion from it of piping systems having service conditions in excess of those quoted in BS EN ISO 15874-1, Table 1. Central heating systems in the UK fall into this category. BS 7291-1 states the service conditions for UK systems where the maximum system service temperature for sealed central heating systems, designated as Class S, is 105 °C and the system malfunction temperature is 114 °C. Both these temperatures are significantly in excess of those specified in BS EN ISO 15874-1, Table 1 and these UK systems are therefore not covered by this standard.

¹⁾ BS 7291-1:2001, *Thermoplastics pipes and associated fittings for hot and cold water for domestic purposes and heating installations in buildings — Part 1: General requirements.*
²⁾ BS 7291-2:2001, *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.*
³⁾ BS 7291-3:2001, *Thermoplastics pipes and associated fittings 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.*

Amendments issued since publication

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b) In addition to the above:

- 1) The normal maximum operating cold water supply pressure in the UK is 12.5 bar⁴⁾ which some categories of piping systems in the BS EN ISO 15874 series of standards do not meet.
- 2) The BS EN ISO 15874 series of standards does not specifically describe push fit joints, which are the predominant jointing method in the UK.
- 3) There is a disparity between the malfunction temperature quoted in BS EN ISO 15874-1, Table 1 (100 °C) and the malfunction temperatures applicable to boilers (110 °C) conforming to BS EN 297:1994⁵⁾, BS EN 483:2000⁶⁾ and BS EN 625:1996⁷⁾. Consequently piping systems could be subjected to temperatures in service for which they have not been tested.
- 4) The unique and traditional practice in the UK is to use products certified to BS 7291-2 or BS 7291-3, Class S, for all applications, as defined in BS 7291-1. This is recognized in the national annex to BS EN 12828⁸⁾, which recommends the use of systems suitable for the maximum temperatures and pressures for their intended application specified in BS 7291-1.

Updated versions of BS 7291-1, BS 7291-2 and BS 7291-3 are being prepared, which maintain these traditional UK operating conditions, and measures are being taken to address this issue in appropriate harmonized European Standards.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the *BSI Catalogue* under the section entitled “International Standards Correspondence Index”, or by using the “Search” facility of the *BSI Electronic Catalogue* or of British Standards Online.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its 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, page i, a blank page, the EN title page, pages 2 to 18, an inside back cover and a back cover.

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⁴⁾ 1 bar = 100 kPa.

⁵⁾ BS EN 297:1994, *Gas-fired central heating boilers — Type B₁₁ and B_{11BS} boilers fitted with atmospheric burners of nominal heat input not exceeding 70 kW*.

⁶⁾ BS EN 483:2000, *Gas-fired central heating boilers — Type C boilers of nominal heat input not exceeding 70 kW*.

⁷⁾ BS EN 625:1996, *Gas-fired central heating boilers — Specific requirements for the domestic hot water operation of combination boilers of nominal heat input not exceeding 70 kW*.

⁸⁾ BS EN 12828, *Heating systems in buildings — Design for water-based heating systems*.

English version

Plastics piping systems for hot and cold water installations -
Polypropylene (PP) - Part 3: Fittings (ISO 15874-3:2003)

Systèmes de canalisations en plastique pour les
installations d'eau chaude et froide - Polypropylène (PP) -
Partie 3: Raccords (ISO 15874-3:2003)

Kunststoff-Rohrleitungssysteme für die Warm- und
Kaltwasserinstallation - Polypropylen (PP) - Teil 3:
Formstücke (ISO 15874-3:2003)

This European Standard was approved by CEN on 14 March 2003.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

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Foreword

This document (EN ISO 15874-3:2003) has been prepared by Technical Committee CEN/TC 155 "Plastics piping systems and ducting systems", the secretariat of which is held by NEN, in collaboration with Technical Committee ISO/TC 138 "Plastics pipes, fittings and valves for the transport of fluids".

NOTE This draft was submitted for CEN enquiry as prEN 12202-3:1995.

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 June 2004, and conflicting national standards shall be withdrawn at the latest by December 2005.

This standard is part of a System Standard for plastics piping systems of a particular material for a specified application. There are a number of such System Standards.

System Standards are based on the results of the work being undertaken in ISO/TC 138 "Plastics pipes, fittings and valves for the transport of fluids", which is a Technical Committee of the International Organisation for Standardization (ISO).

They are supported by separate Standards on test methods to which references are made throughout the System Standard.

The System Standards are consistent with general standards on functional requirements and recommended practices for installation.

EN ISO 15874:2003 consists of the following Parts ¹⁾, under the general title: *Plastics piping systems for hot and cold water installations — Polypropylene (PP)*

- Part 1: General
- Part 2: Pipes
- Part 3: Fittings (the present standard)
- Part 5: Fitness for purpose of the system
- Part 7: Guidance for the assessment of conformity (published as CEN ISO/TS 15874-7).

This Part of EN ISO 15874 includes a Bibliography.

At the date of publication of this standard, System Standards for piping systems of other plastics materials used for the same application include the following:

EN ISO 15875, *Plastics piping systems for hot and cold water installations ¾ Crosslinked polyethylene (PE-X) (ISO 15875:2003)*

EN ISO 15876, *Plastics piping systems for hot and cold water installations ¾ Polybutylene (PB) (ISO 15876:2003)*

EN ISO 15877, *Plastics piping systems for hot and cold water installations ¾ Chlorinated poly(vinyl chloride) (PVC-C) (ISO 15877:2003)*

For pipes and fittings which have conformed to the relevant national standard before 1st November, 2003, as shown by the manufacturer or by a certification body, the national standard may continue to apply until 30th November, 2005.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

¹⁾ This System Standard does not incorporate a Part 4 *Ancillary equipment* or a Part 6 *Guidance for installation*. For ancillary equipment separate standards can apply. Guidance on installation of plastics piping systems made from different materials intended to be used for hot and cold water installations is given by ENV 12108 ^[1].

Introduction

The System Standard of which this is Part 3, specifies the requirements for a piping system when made from polypropylene (PP). The piping system is intended to be used for hot and cold water installations.

In respect of potential adverse effects on the quality of water intended for human consumption, caused by the product covered by this standard:

- This standard provides no information as to whether the product 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 this product remain in force.

Requirements and test methods for materials and components, other than fittings, are specified in Part 1 and Part 2 of EN ISO 15874:2003. Characteristics for fitness for purpose (mainly for joints) are covered in Part 5. Part 7 (CEN ISO/TS 15874-7:2003) gives guidance for the assessment of conformity.

This Part of EN ISO 15874 specifies the characteristics of the fittings.