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

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 15874-3:2004 sisaldab Euroopa standardi EN ISO 15874-3:2003 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 27.04.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 15874-3:2004 consists of the English text of the European standard EN ISO 15874-3:2003.</p> <p>This document is endorsed on 27.04.2004 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala: This Part of EN ISO 15874 specifies the characteristics of fittings for polypropylene (PP) piping systems intended to be used for hot and cold water installations within buildings for the conveyance of water, whether or not intended for human consumption (domestic systems) and for heating systems under design pressures and temperatures according to the class of application (see Table 1 of EN ISO 15874-1:2003).</p>	<p>Scope: This Part of EN ISO 15874 specifies the characteristics of fittings for polypropylene (PP) piping systems intended to be used for hot and cold water installations within buildings for the conveyance of water, whether or not intended for human consumption (domestic systems) and for heating systems under design pressures and temperatures according to the class of application (see Table 1 of EN ISO 15874-1:2003).</p>
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ICS 23.040.45, 91.140.60

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 2003-03-14.

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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.

The European Standards exist 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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CEN

European Committee for Standardization
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Europäisches Komitee für Normung

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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 — Crosslinked polyethylene (PE-X)* (ISO 15875:2003)

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

EN ISO 15877, *Plastics piping systems for hot and cold water installations — 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.

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.

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].

1 Scope

This Part of EN ISO 15874 specifies the characteristics of fittings for polypropylene (PP) piping systems intended to be used for hot and cold water installations within buildings for the conveyance of water, whether or not intended for human consumption (domestic systems) and for heating systems under design pressures and temperatures according to the class of application (see Table 1 of EN ISO 15874-1:2003).

This standard covers a range of service conditions (application classes) and design pressure classes. For values of T_D , T_{max} and T_{min} in excess of those in Table 1 of Part 1, this standard does not apply.

NOTE It is the responsibility of the purchaser or specifier to make the appropriate selections from these aspects, taking into account their particular requirements and any relevant national regulations and installation practices or codes.

It also specifies the parameters for the test methods referred to in this standard.

In conjunction with the other parts of EN ISO 15874 (see Foreword) it is applicable to fittings made from PP and to fittings made from other materials which are intended to be fitted to pipes conforming to EN ISO 15874-2 for hot and cold water installations and whereby the joints conform to the requirements of EN ISO 15874-5.

It is also applicable to fittings made from alternative materials which when fitted to pipes conforming to Part 2, conform to the requirements of Part 5 of EN ISO 15874.

This standard is applicable to fittings of the following types:

- socket fusion fittings
- electrofusion fittings
- mechanical fittings
- fittings with incorporated inserts

2 Normative references

This standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to, or revisions of, any of these publications apply to this standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 578, *Plastics piping systems — Plastics pipes and fittings — Determination of the opacity.*

EN 681-1, *Elastomeric seals — Materials requirements for pipe joint seals used in water and drainage applications — Part 1: Vulcanized rubber.*

EN 681-2, *Elastomeric seals — Materials requirements for pipe joint seals used in water and drainage applications — Part 2: Thermoplastic elastomers.*

EN 921:1994, *Plastics piping systems — Thermoplastics pipes — Determination of resistance to internal pressure at constant temperature.*

EN 1254-3:1998, *Copper and copper alloys — Plumbing fittings — Part 3: Fittings with compression ends for use with plastics pipes.*

EN 10088-1, *Stainless steels — Part 1: List of stainless steels.*

prEN 10226-1, *Pipe threads where pressure tight joints are made on the threads — Part 1: Taper external threads and parallel internal threads — Dimensions, tolerances and designation.*

EN 12107, *Plastics piping systems — Injection-moulded thermoplastics fittings, valves and ancillary equipment — Determination of long-term hydrostatic strength of thermoplastics materials for injection moulding of piping components.*

EN ISO 228-1, *Pipe threads where pressure-tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation (ISO 228-1:2000).*

EN ISO 3126, *Plastics piping systems — Plastics piping components — Measurement of dimensions (ISO 3126:2003).*

EN ISO 9080, *Plastics piping and ducting systems — Determination of the long-term hydrostatic strength of thermoplastics materials in pipe form by extrapolation (ISO 9080:2003).*

EN ISO 15874-1:2003, *Plastics piping systems for hot and cold water installations — Polypropylene (PP) — Part 1: General (ISO 15874-1:2003).*

EN ISO 15874-2:2003, *Plastics piping systems for hot and cold water installations — Polypropylene (PP) — Part 2: Pipes (ISO 15874-2:2003).*

EN ISO 15874-5, *Plastics piping systems for hot and cold water installations — Polypropylene (PP) — Part 5: Fitness for purpose of the system (ISO 15874-5:2003).*

ISO 1133:1997, *Plastics — Determination of the melt mass-flow rate (MFR) and the melt volume-flow rate (MVR) of thermoplastics.*

ISO 12092, *Fittings, valves and other piping system components made of unplasticized poly(vinyl chloride) (PVC-U), chlorinated poly(vinyl chloride) (PVC-C), acrylonitrile-butadiene-styrene (ABS) and acrylonitrile-styrene-acrylester (ASA) for pipes under pressure — Resistance to internal pressure — Test method.*

3 Terms and definitions, symbols and abbreviated terms

For the purposes of this standard, terms and definitions, symbols and abbreviations given in EN ISO 15874-1:2003 apply together with the following terms and definitions:

3.1

fitting

component of a piping system, which connects two or more pipes and/or fittings together, without any further function

3.2 Mechanical fittings

3.2.1

compression fitting

fitting in which the joint is made by the compression of a ring or sleeve on the outside wall of the pipe with or without additional sealing elements and with internal support

3.2.2

crimped fitting

fitting in which the joint is made by crimping of the fitting and/or a ring on the outside wall of the pipe by means of a special tool

3.2.3

flanged fitting

fitting in which the pipe connection consists of two mating flanges which are mechanically pressed together and sealed by the compression of an elastomeric sealing element between them

3.2.4

flat seat union fitting

fitting in which the pipe connection consists primarily of two components, at least one of which normally incorporates a flat sealing surface, which are mechanically pressed together by means of screwed nut or similar and sealed by the compression of an elastomeric sealing element between them