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Plastics piping systems for hot and cold water installations - Polypropylene (PP) - Part 3: Fittings (ISO 15874-3:2013 + ISO 15874-3:2013/Amd 1:2018 + ISO 15874-3:2013/Amd 2:2021)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 15874-3:2013 +A1+A2:2021 sisaldab Euroopa standardi EN ISO 15874-3:2013 ja selle muudatuste A1:2018 ja A2:2021, ingliskeelset teksti.	This Estonian standard EVS-EN ISO 15874-3:2013 +A1+A2:2021 consists of the English text of the European standard EN ISO 15874-3:2013 and its amendments A1:2018 and A2:2021.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas. Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 20.02.2013, muudatused A1 01.08.2018 ja A2 27.10.2021.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation. Date of Availability of the European standard is 20.02.2013, for A1 01.08.2018 and A2 27.10.2021.
Muudatusega A1 lisatud või muudetud teksti algus ja lõpp on tekstis tähistatud sümbolitega [A1⟩ ⟨A1].	The start and finish of text introduced or altered by amendment A1 is indicated in the text by tags [A1⟩ ⟨A1].
Muudatusega A2 lisatud või muudetud teksti algus ja lõpp on tekstis tähistatud sümbolitega [A2⟩ ⟨A2].	The start and finish of text introduced or altered by amendment A2 is indicated in the text by tags [A2⟩ ⟨A2].
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

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ICS 23.040.45; 91.140.60

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 15874-3 + A1 + A2

February 2013, August 2018, October 2021

ICS 23.040.45; 91.140.60

Supersedes EN ISO 15874-3:2003

English Version

Plastics piping systems for hot and cold water installations - Polypropylene (PP) - Part 3: Fittings (ISO 15874-3:2013 + ISO 15874-3:2013/Amd 1:2018 + ISO 15874-3:2013/Amd 2:2021)

Systèmes de canalisations en plastique pour les installations d'eau chaude et froide - Polypropylène (PP) - Partie 3: Raccords (ISO 15874-3:2013 + ISO 15874-3:2013/Amd 1:2018 + ISO 15874-3:2013/Amd 2:2021)

Kunststoff-Rohrleitungssysteme für die Warm- und Kaltwasserinstallation - Polypropylen (PP) - Teil 3: Formstücke (ISO 15874-3:2013 + ISO 15874-3:2013/Amd 1:2018 + ISO 15874-3:2013/Amd 2:2021)

This European Standard was approved by CEN on 5 January 2013. Amendment A1 was approved by CEN on 28 June 2018. Amendment A2 was approved by CEN on 1 October 2021.

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This European Standard and its Amendments A1 and A2 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 CEN-CENELEC Management Centre has the same status as the official versions.

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Ref. No. EN ISO 15874-3:2013: E +
EN ISO 15874-3:2013/A1:2018 E +
EN ISO 15874-3:2013/A2:2021 E

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Foreword

This document (EN ISO 15874-1:2013) 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”.

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 August 2013, and conflicting national standards shall be withdrawn at the latest by August 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 15874-3:2003.

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A1 Amendment A1 European foreword

This document (EN ISO 15874-3:2013/A1:2018) 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 Amendment to the European Standard EN ISO 15874-3:2013 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 2019, and conflicting national standards shall be withdrawn at the latest by February 2019.

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Endorsement notice

The text of ISO 15874-3:2013/Amd 1:2018 has been approved by CEN as EN ISO 15874-3:2013/A1:2018 without any modification. A1

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A2 Amendment A2 European foreword

This document (EN ISO 15874-3:2013/A2:2021) 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 Amendment to the European Standard EN ISO 15874-3:2013 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2022, and conflicting national standards shall be withdrawn at the latest by April 2022.

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Endorsement notice

The text of ISO 15874-3:2013/Amd 2:2021 has been approved by CEN as EN ISO 15874-3:2013/A2:2021 without any modification. 〈A2

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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.

ISO 15874-3 was prepared by Technical Committee CEN/TC 155, *Plastics piping systems and ducting systems*, in collaboration with Technical Committee ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*, and Subcommittee SC 2, *Plastics pipes and fittings for water supplies*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 15874-3:2003 and ISO 15874-3:2003/Amd 1:2007), which has been technically revised.

The following material has been revised:

— in 4.1.1, Table 1, the material PP-RCT has been included;

— in 6.2.1, Figure 1 has been simplified, and in Tables 3 and 4, the socket length and socket dimensions of socket fusion fittings have been adjusted;

— in 6.2.2, Table 5, the socket dimensions for electrofusion fittings have been extended to 160 mm; and

— in 7.4, Tables 6, 7 and 8, values have been adjusted.

ISO 15874 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*

— *Part 5: Fitness for purpose of the system*

— *Part 7: Guidance for the assessment of conformity* [Technical specification]

[1] 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 CEN/TR 12108 [1].

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A1 Amendment A1 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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 155, *Plastics piping systems and ducting systems*, in collaboration with ISO 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*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement). A1

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〖A2〗 Amendment A2 foreword

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This document 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,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 155, *Plastics piping systems and ducting systems,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

A list of all parts in the ISO 15874 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html. 〖/A2〗

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Introduction

This part of ISO 15874 specifies the requirements for a piping system and its components when made from polypropylene (PP). The piping system is intended to be used for hot and cold water installations.

Regarding potential undesirable effects on the quality of water intended for human consumption, caused by the product covered by ISO 15874

— no information is provided as to whether the product can be used without restriction, and

— 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 ISO 15874-1 and ISO 15874-2. Characteristics for fitness for purpose (mainly for joints) are covered in ISO 15874-5. ISO/TS 15874-7 gives guidance for the assessment of conformity.

This part of ISO 15874 specifies the characteristics of the fittings.

At the date of publication of this part of ISO 15874, the following system International Standards for piping systems of other plastics materials used for the same application are

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

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

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

— ISO 22391, *Plastics piping systems for hot and cold water installations — Polyethylene of raised temperature resistance (PE-RT)*

The International Organization for Standardization (ISO) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent.

ISO takes no position concerning the evidence, validity and scope of this patent right.

The holder of this patent right has assured ISO that they are willing to negotiate licences under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the holder of this patent right is registered with ISO. Information may be obtained from:

Borealis AG

Wagramerstrasse 17-19, A-1220,

Vienna, Austria

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

Part 3: Fittings

1 Scope

This part of 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 ISO 15874-1:2013, Table 1).

It covers a range of service conditions (application classes) and design pressure classes. For values of T_D, T_{max} and T_{mal} in excess of those in Table 1 of ISO 15874-1:2013 do 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 part of ISO 15874.

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

This part of ISO 15874 is applicable to fittings of the following types:

— socket fusion fittings;

— electro fusion fittings;

— mechanical fittings;

— fittings with incorporated inserts.

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

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

ISO 3126, *Plastics piping systems — Plastics components — Determination of dimensions*

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ISO 1133-1, *Plastics — Determination of the melt mass-flow rate (MFR) and the melt volume-flow rate (MVR) of thermoplastics.*

ISO 1167-1 *Thermoplastics pipes, fittings and assemblies for the conveyance of fluids — Determination of the resistance to internal pressure — Part 1: General method*

ISO 1167-3 *Thermoplastics pipes, fittings and assemblies for the conveyance of fluids — Determination of the resistance to internal pressure — Part 3: Preparation of components*

ISO 1167-4 *Thermoplastics pipes, fittings and assemblies for the conveyance of fluids — Determination of the resistance to internal pressure — Part 4: Preparation of assemblies*

〔A2〉 ISO 2768-1, *General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications*

ISO 6506-1, *Metallic materials — Brinell hardness test — Part 1: Test method*

ISO 6509-1, *Corrosion of metals and alloys — Determination of dezincification resistance of copper alloys with zinc — Part 1: Test method*

ISO 6957, *Copper alloys — Ammonia test for stress corrosion resistance* 〈A2〉

ISO 7686, *Plastics pipes and fittings — Determination of opacity*

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

ISO 15874-1:2013, *Plastics piping systems for hot and cold water installations — Polypropylene (PP) — Part 1: General*

ISO 15874-2:2013, *Plastics piping system for hot and cold water installations — Polypropylene (PP) — Part 2: Pipes*

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

〔A2〉 ISO 22081, *Geometrical product specifications (GPS) — Geometrical tolerancing — General geometrical specifications and general size specifications* 〈A2〉

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.*

〔A2〉 *deleted text* 〈A2〉

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

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

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