Second edition 2013-02-15

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

### Part 5:

## Fitness for purpose of the system

Systèmes de canalisations en plastique pour les installations d'eau chaude et froide — Polypropylene (PP) —

Partie 5: Aptitude à l'emploi du système





#### **COPYRIGHT PROTECTED DOCUMENT**

© ISO 2013

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

COI	ntents	Page
Fore	eword	iv
Introduction		
1	Scope	
2	Normative references	1
3	Terms and definitions, symbols and abbreviated terms	2
4 4.1	Fitness for purpose of the joints and the piping system	2
4.2	General Internal pressure test Bending test Pull-out test	2
4.3	Bending test	5
4.4	Pull-out test	7
4.5	Thermal cycling test	7
4.6	Pressure cycling test	8
4.7	Thermal cycling test Pressure cycling test Leak tightness under vacuum	8
Bibli	iography	9

#### 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 15874-5 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 15874-5:2003), which has been technically revised. In 4.2, Tables 2, 3 and 4, values have been adjusted; in Table 5, the material PP-RCT has been included; and in 4.3, Tables 6, 7 and 8, values have been adjusted.

ISO 15874 consists of the following parts<sup>1)</sup> 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].

iv

<sup>1)</sup> 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].

#### 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 components of the piping system are specified in ISO 15874-1, ISO 15874-2 and ISO 15874-3. ISO/TS 15874-7 gives guidance for the assessment of conformity.

This part of ISO 15874 specifies the characteristics of fitness for purpose of the piping systems.

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

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights other than those identified above. ISO shall not be held responsible for identifying any or all such patent rights.

ISO (<u>www.iso.org/patents</u>) and IEC (<u>http://patents.iec.ch</u>) maintain on-line databases of patents relevant to their standards. Users are encouraged to consult the databases for the most up to date information concerning patents.