

First edition
2003-12-01

AMENDMENT 1
2020-12

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

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

AMENDMENT 1

*Systèmes de canalisations en plastique pour les installations d'eau
chaude et froide — Polyéthylène réticulé (PE-X) —*

Partie 5: Aptitude à l'emploi du système

AMENDEMENT 1



Reference number
ISO 15875-5:2003/Amd.1:2020(E)

© ISO 2020



COPYRIGHT PROTECTED DOCUMENT

© ISO 2020

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

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 15875 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.

STANDARDSISO.COM : Click to view the full PDF of ISO 15875-5:2003/Amd 1:2020

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

Part 5: Fitness for purpose of the system

AMENDMENT 1

Normative references

Replace the reference to "EN 712" with the following:

ISO 3501, *Plastics piping systems — Mechanical joints between fittings and pressure pipes — Test method for resistance to pull-out under constant longitudinal force*

Replace the reference to "EN 713" with the following:

ISO 3503, *Plastics piping systems — Mechanical joints between fittings and pressure pipes — Test method for leaktightness under internal pressure of assemblies subjected to bending*

Replace the reference to "EN 921" with the following:

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 1167-2, *Thermoplastics pipes, fittings and assemblies for the conveyance of fluids — Determination of the resistance to internal pressure — Part 2: Preparation of pipe test pieces*

Replace the reference to "EN 12293" with the following:

ISO 19893, *Plastics piping systems — Thermoplastics pipes and fittings for hot and cold water — Test method for the resistance of mounted assemblies to temperature cycling*

Replace the reference to "EN 12294" with the following:

ISO 13056, *Plastics piping systems — Pressure systems for hot and cold water — Test method for leaktightness under vacuum*

Replace the reference to "EN 12295" with the following:

ISO 19892, *Plastics piping systems — Thermoplastics pipes and fittings for hot and cold water — Test method for the resistance of joints to pressure cycling*

4.1, Table 1

Replace the reference to "EN 921" with "ISO 1167-1 and ISO 1167-2".

Replace the reference to "EN 713" with "ISO 3503".

Replace the reference to "EN 712" with "ISO 3501".

Replace the reference to "EN 12293" with "ISO 19893".

Replace the reference to "EN 12295" with "ISO 19892".

Replace the reference to "EN 12294" with "ISO 13056".

4.2, first sentence

Replace the reference to "EN 921" with "ISO 1167-1 and ISO 1167-2".

4.3, first sentence

Replace the reference to "EN 713" with "ISO 3503".

4.3, second paragraph

Replace "of nominal diameter greater than or equal to 32 mm" with "that are declared as being bendable by the system supplier."

4.4, first sentence

Replace the reference to "EN 712" with "ISO 3501".

4.5, first sentence

Replace the reference to "EN 12293" with "ISO 19893".

4.5, Table 5

Replace Table 5 with the following table:

Table 5 — Test parameters for thermal cycling test

	Application class			
	Class 1	Class 2	Class 4	Class 5
Maximum design temperature, $T_{\max}$, in °C	80	80	70	90
Highest test temperature, in °C	90	90	80	95
Lowest test temperature, in °C	20	20	20	20
Test pressure, in bars	p_D	p_D	p_D	p_D
Number of cycles for $d_n \leq 160$ mm ^a	5 000	5 000	5 000	5 000
Number of cycles for $d_n > 160$ mm ^b	500	500	500	500
Number of test pieces	One set of fittings in accordance with the configuration shown in ISO 19893 ^c			
^a Each cycle shall comprise 15 ⁺¹ ₀ min at the highest test temperature and 15 ⁺¹ ₀ min at the lowest (i.e. the duration of one cycle is 30 ⁺² ₀ min).				
^b Each cycle shall comprise 150 ⁺⁵ ₀ min at the highest test temperature and 150 ⁺⁵ ₀ min at the lowest (i.e. the duration of one cycle is 300 ⁺¹⁰ ₀ min).				
^c The test arrangement consists of min. 4 pipe connectors or min. 6 pipe connections for $d_n > 160$ mm. The free pipe length between the joints shall not be less than 150 mm. A representative set of fittings shall be used in the assembly.				

4.5

Replace all references to "EN 12293" with "ISO 19893".

4.6, first sentence

Replace the reference to "EN 12295" with "ISO 19892".

4.6, Table 6

Replace Table 6 with the following table:

Table 6 — Test parameters for pressure cycling

Characteristics	Requirement	Test parameters			Test method	
Pressure cycling	No leakage	Test temperature	23 °C		ISO 19892	
		Number of test pieces	3			
			$d_n \leq 160$ mm	$d_n > 160$ mm		
		Frequency (cycles/min)	(30 ± 5)	(15 ± 3)		
		Number of cycles	10 000	5 000		
		Test pressure limits for a design pressure of:	Upper limit	Lower limit		
			4 bar	6,0 bar		0,5 bar
			6 bar	9,0 bar		0,5 bar
			8 bar	12,0 bar		0,5 bar
			10 bar	15,0 bar		0,5 bar

4.7

Replace the reference to "EN 12294" with "ISO 13056".

4.7, Table 7

Replace the reference to "EN 12294" with "ISO 13056".