

This is a preview of "ISO 4427-2:2019". [Click here to purchase the full version from the ANSI store.](#)

Second edition  
2019-08

---

---

# Plastics piping systems for water supply, and for drainage and sewerage under pressure — Polyethylene (PE) —

## Part 2: Pipes

*Systèmes de canalisations en plastique destinés à l'alimentation en eau et aux branchements et collecteurs d'assainissement sous pression — Polyéthylène (PE) —*

*Partie 2: Tubes*



Reference number  
ISO 4427-2:2019(E)

© ISO 2019



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2019

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  
Fax: +41 22 749 09 47  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

This is a preview of "ISO 4427-2:2019". Click here to purchase the full version from the ANSI store.

## Contents

	Page
<b>Foreword</b> .....	<b>iv</b>
<b>Introduction</b> .....	<b>v</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>2</b>
<b>3 Terms and definitions</b> .....	<b>2</b>
<b>4 Symbols and abbreviated terms</b> .....	<b>3</b>
<b>5 Material</b> .....	<b>3</b>
5.1 Compound.....	3
5.2 Identification compound.....	3
5.3 Reprocessed and recycled material.....	3
<b>6 General characteristics</b> .....	<b>3</b>
6.1 Appearance.....	3
6.2 Colour.....	3
6.3 Effect on water quality.....	4
<b>7 Geometrical characteristics</b> .....	<b>4</b>
7.1 Measurements.....	4
7.2 Mean outside diameter and out-of-roundness (ovality).....	4
7.3 Wall thicknesses and their tolerances.....	6
7.4 Coiled pipe.....	10
7.5 Lengths.....	10
<b>8 Mechanical characteristics</b> .....	<b>10</b>
8.1 Conditioning.....	10
8.2 Requirements.....	10
8.3 Retest in case of failure at 80 °C.....	12
<b>9 Physical characteristics</b> .....	<b>12</b>
9.1 Conditioning.....	12
9.2 Requirements.....	12
<b>10 Chemical characteristics of pipes in contact with chemicals</b> .....	<b>13</b>
<b>11 Performance requirements</b> .....	<b>13</b>
<b>12 Marking</b> .....	<b>14</b>
12.1 General.....	14
12.2 Minimum required marking of pipes.....	14
<b>Annex A (normative) Pipes with co-extruded layers</b> .....	<b>15</b>
<b>Annex B (normative) Pipes with peelable layer</b> .....	<b>17</b>
<b>Annex C (informative) Relationship between PN, MRS, S and SDR</b> .....	<b>19</b>
<b>Bibliography</b> .....	<b>20</b>

## 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](http://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](http://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](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 138, *Plastics pipes, fitting and valves for the transport of fluids*, Subcommittee SC 2, *Plastics pipes and fittings for water supplies*.

This second edition cancels and replaces the first edition (ISO 4427-2:2007), which has been technically revised. It also incorporates Amendment ISO 4427-2:2007/Amd. 1:2014.

The main changes compared to the previous edition are:

- Update of the normative references;
- Technical consistency with ISO 4437-2 (see Bibliography [1]).

A list of all parts in the ISO 4427 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](http://www.iso.org/members.html).

This is a preview of "ISO 4427-2:2019". [Click here to purchase the full version from the ANSI store.](#)

## Introduction

The ISO 4427 series of standards are a set of system standards that specify the requirements for a piping system and its components when made from polyethylene (PE). The piping system is intended to be used in buried or above ground applications, for the conveyance of water for human consumption, raw water prior to treatment, drainage and sewerage under pressure, vacuum sewer systems, and water for other purposes.

In respect of potential adverse effects on the quality of water intended for human consumption caused by the products covered by the ISO 4427 series, it does not provide information on the restriction on the use of products.

NOTE Guidance for assessment of conformity can be found in Reference [2] in the Bibliography.