



## ISO 4437-1

# Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) —

## Part 1: General

*Systèmes de canalisations en plastique pour la distribution de  
combustibles gazeux — Polyéthylène (PE) —*

*Partie 1: Généralités*

Second edition  
2024-02



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2024

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](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

This is a preview of ISO 4437-1:2024. [Click here to purchase the full version from the ANSI store.](#)

<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>1</b>
<b>3 Terms and definitions</b> .....	<b>3</b>
3.1 Terms related to geometry.....	3
3.2 Terms related to material.....	4
3.3 Terms related to material characteristics.....	4
3.4 Terms related to service conditions.....	5
3.5 Terms related to joints.....	6
<b>4 Symbols and abbreviated terms</b> .....	<b>6</b>
4.1 Symbols.....	6
4.2 Abbreviated terms.....	7
<b>5 Material</b> .....	<b>8</b>
5.1 Material of the components.....	8
5.2 Compound.....	8
5.2.1 Additives and pigments.....	8
5.2.2 Colour.....	8
5.2.3 Characteristics.....	8
5.3 Fusion compatibility.....	12
5.4 Classification and designation.....	13
5.5 Design coefficient and design stress.....	13
5.6 Change of compound formulation.....	13
<b>Annex A (informative) Additional information related to the installation of PE 100-RC systems</b> .....	<b>14</b>
<b>Annex B (informative) LPG and manufactured gas</b> .....	<b>16</b>
<b>Annex C (informative) Resistance to rapid crack propagation (RCP)</b> .....	<b>17</b>
<b>Bibliography</b> .....	<b>19</b>

This is a preview of ISO 4437-1:2024. [Click here to purchase the full version from the ANSI store.](#)

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 document 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)).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at [www.iso.org/patents](http://www.iso.org/patents). ISO shall not be held responsible for identifying any or all such patent rights.

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, fittings and valves for the transport of fluids*, Subcommittee SC 4, *Plastics pipes and fittings for the supply of gaseous fuels*.

This second edition cancels and replaces the first edition (ISO 4437-1:2014), which has been technically revised.

The main changes are as follows:

- PE 100-RC type materials with enhanced resistance to slow crack growth (SCG) have been added;
- [Annex A](#) has been added, discussing the performance of PE 100-RC type materials with enhanced resistance to slow crack growth (SCG) and giving additional information for installation techniques;
- test methods have been updated and new test methods have been added for PE 100-RC materials.

A list of all parts in the ISO 4437 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 4437-1:2024. [Click here to purchase the full version from the ANSI store.](#)

The ISO 4437 series specifies the requirements for a piping system and its components made from polyethylene (PE) compounds, which is intended to be used for the supply of gaseous fuels.

This document covers materials and the general aspects of the plastics piping system.

Requirements and test methods for components of the piping system are specified in ISO 4437-2, ISO 4437-3 and ISO 4437-4.

Characteristics for fitness for purpose of the system are covered in ISO 4437-5.

Recommended practice for design, handling and installation is given in ISO/TS 10839.