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

## Part- 2: Pipes

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

*Partie- 2: Tubes*



PROOF

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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.

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).

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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 4, *Plastics pipes and fittings for the supply of gaseous fuels*.

This second edition cancels and replaces the first edition (ISO 4437-2:2014), 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;

— ~~—~~requirements for the compound for identification stripes have been updated;

— ~~—~~the nominal outside diameter range of the pipe has been increased to 800 mm;

— ~~—~~the PE 80 20 °C/100 h control point has been changed to 10 MPa with a note to advise that 9 MPa is applicable if the ISO 9080 data set for a material indicates that a lower value is applicable;

— ~~—~~test methods have been updated and new 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.

## Introduction

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 the characteristics of pipes.

Requirements and test methods for materials and components, other than pipes, are specified in ISO 4437-1[1], ISO 4437-3[2] and ISO 4437-4.

Characteristics for fitness for purpose of the system are covered in ISO 4437-5[3].

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



[1] Under preparation. Stage at the time of publication: ISO/PRF 4437-1:2023.
[2] Under preparation. Stage at the time of publication: ISO/PRF 4437-3:2023.
[3] Under preparation. Stage at the time of publication: ISO/PRF 4437-5:2023.

# Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 2: Pipes

## 1 Scope

This document specifies the characteristics of pipes made from polyethylene (PE) for piping systems in the field of the supply of gaseous fuels.

It also specifies the test parameters for the test methods referred to in this document.

In conjunction with ISO 4437-1, ISO 4437-3, ISO 4437-4 and ISO 4437-5, this document is applicable to PE pipes, fittings and valves, their joints, and joints with components of PE and other materials intended to be used under the following conditions:

a) a maximum operating pressure (MOP), up to and including 10 bar[4], at a reference temperature of 20 °C for design purposes;

b) an operating temperature between –20 °C and 40 °C.

For operating temperatures between 20 °C and 40 °C, derating coefficients are defined in ISO 4437-5.

The ISO 4437 series covers a range of MOPs and gives requirements concerning colours.

This document is applicable to three types of pipes:

— PE pipes (outside diameter, $d_n$) including any identification stripes;

— PE pipes with co-extruded layers on either or both the outside and/or inside of the pipe (total outside diameter, $d_n$) as specified in Annex A, where all PE layers have the same MRS rating;

— PE pipes (outside diameter, $d_n$) with a peelable and contiguous thermoplastics additional layer on the outside of the pipe ("coated pipe") as specified in Annex B.

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.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

[4] 1 bar = 0,1 MPa = $10^5$ Pa; 1 MPa = 1 N/mm$^2$.