



**SLOVENSKI STANDARD**  
**oSIST prEN 1555-4:2024**  
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**Cevni sistemi iz polimernih materialov za oskrbo s plinastimi gorivi - Polietilen (PE) - 4. del: Ventili**

Plastics piping systems for the supply of gaseous fuels - Polyethylene (PE) - Part 4: Valves

Kunststoff-Rohrleitungssysteme für die Gasversorgung - Polyethylen (PE) - Teil 4: Armaturen

Systèmes de canalisations en plastique pour la distribution de combustibles gazeux - Polyéthylène (PE) - Partie 4 : Robinets

**Ta slovenski standard je istoveten z: prEN 1555-4**

[oSIST prEN 1555-4:2024](https://standards.slovenski.si/standard/osist-prEN-1555-4-2024)

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83.140.30	Polimerne cevi in fittingi za snovi, ki niso tekočine	Plastics pipes and fittings for non fluid use
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## Plastics piping systems for the supply of gaseous fuels - Polyethylene (PE) - Part 4: Valves

Systèmes de canalisations en plastique pour la  
distribution de combustibles gazeux - Polyéthylène  
(PE) - Partie 4 : Robinets

Kunststoff-Rohrleitungssysteme für die Gasversorgung  
- Polyethylen (PE) - Teil 4: Armaturen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 155.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
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EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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**prEN 1555-4:2024 (E)****European foreword**

This document (prEN 1555-4:2024) has been prepared by Technical Committee CEN/TC 155 “Plastics piping systems and ducting systems”, the secretariat of which is held by NEN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 1555-4:2021.

prEN 1555-4:2024 includes the following significant technical changes with respect to EN 1555-4:2021: it has been considered hydrogen as possible service fluid.

EN 1555 consists of the following parts:

- EN 1555-1, *Plastics piping systems for the supply of gaseous fuels - Polyethylene (PE) — Part 1: General* (this document);
- EN 1555-2, *Plastics piping systems for the supply of gaseous fuels - Polyethylene (PE) — Part 2: Pipes*;
- EN 1555-3, *Plastics piping systems for the supply of gaseous fuels - Polyethylene (PE) — Part 3: Fittings*;
- EN 1555-4, *Plastics piping systems for the supply of gaseous fuels - Polyethylene (PE) — Part 4: Valves*;
- EN 1555-5, *Plastics piping systems for the supply of gaseous fuels - Polyethylene (PE) — Part 5: Fitness for purpose of the system*;

In addition, the following document provides guidance on the assessment of conformity:

- CEN/TS 1555-7, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 7: Guidance for assessment of conformity*.

Document Preview

[oSIST prEN 1555-4:2024](https://standards.iteh.ai/catalog/standards/sist/4102f948-cfb9-461e-b582-6a7ealf81a01/osist-pren-1555-4-2024)

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## Introduction

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

Requirements and test methods for material and components, other than valves, are specified in prEN 1555-1:2024, prEN 1555-2:2024 and prEN 1555-3:2024.

Characteristics for fitness for purpose are covered in prEN 1555-5:2024. CEN/TS 1555-7 [1] gives guidance for assessment of conformity. Recommended practice for installation is given in EN 12007-2 [2] prepared by CEN/TC 234.

This part of prEN 1555 covers the characteristics of valves.

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## prEN 1555-4:2024 (E)

### 1 Scope

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

It is applicable to isolating unidirectional and bi-directional valves with spigot ends or electrofusion sockets intended to be fused with PE pipes or fittings conforming to prEN 1555-2:2024 and prEN 1555-3:2024 respectively.

Valves made from materials other than PE, designed for the supply of gaseous fuels conforming to the relevant standards can be used in PE piping systems according to prEN 1555 (all parts), provided that they have PE connections for butt fusion or electrofusion ends, including integrated material transition joints, conforming to prEN 1555-3:2024.

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

In conjunction with Parts 1, 2, 3 and 5 of EN 1555, it is applicable to PE valves, their joints and to 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<sup>1</sup> at a reference temperature of 20 °C for design purposes;

NOTE 1 For the purpose of this document and the references to ISO 8233, MOP is considered to be nominal pressure.

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

NOTE 2 For operating temperatures between 20 °C and 40 °C, derating coefficients are defined in EN 1555-5.

EN 1555 (all parts) covers a range of maximum operating pressures and gives requirements concerning colours.

NOTE 3 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.

This document covers valve bodies designed for connection with pipes with a nominal outside diameter  $d_n \leq 400$  mm. [ds.iteh.ai/catalog/standards/sist/4102f948-cfb9-461e-b582-6a7eaf81a01/osist-pren-1555-4-2024](https://standards.iteh.ai/catalog/standards/sist/4102f948-cfb9-461e-b582-6a7eaf81a01/osist-pren-1555-4-2024)

### 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.

EN 682, *Elastomeric Seals — Materials requirements for seals used in pipes and fittings carrying gas and hydrocarbon fluids*

EN 736-1, *Valves — Terminology — Part 1: Definition of types of valves*

EN 736-2, *Valves — Terminology — Part 2: Definition of components of valves*

prEN 1555-1:2024, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 1: General*

<sup>1</sup> 1 bar = 0,1 MPa = 105 Pa; 1 MPa = 1 N/mm<sup>2</sup>.



prEN 1555-2:2024, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 2: Pipes*

prEN 1555-3:2024, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 3: Fittings*

prEN 1555-5:2024, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 5: Fitness for purpose of the system*

EN 1680, *Plastics piping systems — Valves for polyethylene (PE) piping systems — Test method for leaktightness under and after bending applied to the operating mechanisms*

EN 1704, *Plastics piping systems — Thermoplastics valves — Test method for the integrity of a valve after temperature cycling under bending*

EN 1705, *Plastics piping systems — Thermoplastics valves — Test method for the integrity of a valve after an external blow*

EN 12100, *Plastics piping systems — Polyethylene (PE) valves — Test method for resistance to bending between supports*

EN 12119, *Plastics piping systems — Polyethylene (PE) valves — Test method for resistance to thermal cycling*

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

EN 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 1167-1)*

EN ISO 1167-4, *Thermoplastics pipes, fittings and assemblies for the conveyance of fluids — Determination of the resistance to internal pressure — Part 4: Preparation of assemblies (ISO 1167-4)*

EN ISO 3126, *Plastics piping systems — Plastics components — Determination of dimensions (ISO 3126)*

EN ISO 3127, *Thermoplastics pipes — Determination of resistance to external blows — Round-the-clock method (ISO 3127)*

EN ISO 11357-6, *Plastics — Differential scanning calorimetry (DSC) — Part 6: Determination of oxidation induction time (isothermal OIT) and oxidation induction temperature (dynamic OIT) (ISO 11357-6)*

EN ISO 17778, *Plastics piping systems — Fittings, valves and ancillaries — Determination of gaseous flow rate/pressure drop relationships (ISO 17778)*

ISO 8233, *Thermoplastics valves — Torque — Test method*

ISO 18488, *Polyethylene (PE) materials for piping systems — Determination of Strain Hardening Modulus in relation to slow crack growth — Test method*

**prEN 1555-4:2024 (E)****3 Terms and definitions**

For the purposes of this document, the terms and definitions, symbols and abbreviations given in EN 1555-1:2021, EN 736-1, EN 736-2 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp/>
- IEC Electropedia: available at <https://www.electropedia.org/>

**3.1 General****3.1.1****external leaktightness**

leaktightness of the valve body enveloping the space containing the gas, with respect to the atmosphere

**3.1.2****internal leaktightness**

leaktightness between the inlet and the outlet of the valve, with the valve in the closed position

**3.1.3****leakage**

emission of gas from a valve body, or any component of a valve

**3.1.4****valve body**

main part of a valve which consists of an operating stop system and contains the obturator, seat(s), stem(s) or shaft(s) and packing seals, and provides the terminal ends for connection to the PE pipe/fittings as applicable

**3.1.5****operating device**

part of a valve for connection with the operating key which allows the opening and the closing of the valve

**3.2 Terms relating to design****3.2.1****isolating valve**

valve intended for use only in the closed or fully open position

[SOURCE: EN 736-1]

**3.2.2****full bore valve**

valve with a flow section equal to or greater than 80 % of the section corresponding to the nominal inside diameter of the body end port

[SOURCE: EN 736-3] [3]

**3.2.3****clearway valve**

valve designed to have an unobstructed flow way, which allows for the passage of a theoretical sphere with a diameter that is not less than the nominal inside diameter of the body end port

[SOURCE: EN 736-3] [3]