BS EN 1555-4:2025

BSI Standards Publication

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

Part 4: Valves

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National foreword

This British Standard is the UK implementation of EN 1555-4:2025. It supersedes BS EN 1555-4:2021, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PRI/88, Plastics piping systems.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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

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European foreword

This document (EN 1555-4:2025) has been prepared by Technical Committee CEN/TC 155 “Plastics piping systems and ducting systems”, the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2026, and conflicting national standards shall be withdrawn at the latest by April 2026.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 1555-4:2021.

EN 1555-4:2025 includes the following significant technical changes with respect to EN 1555-4:2021:

— reference to information related to the suitability of PE pipe systems for 100 % hydrogen and its admixtures with natural gas has been made.

EN 1555 consists of the following parts:

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

— 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* (this document);

— 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*.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

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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 EN 1555-1, EN 1555-2 and EN 1555-3.

Characteristics for fitness for purpose are covered in EN 1555-5. 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 EN 1555 covers the characteristics of valves.

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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 EN 1555-2 and EN 1555-3 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 EN 1555 (all parts), provided that they have PE connections for butt fusion or electrofusion ends, including integrated material transition joints, conforming to EN 1555-3.

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

In conjunction with EN 1555-1, EN 1555-2, EN 1555-3 and EN 1555-5, 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[1] at a design reference temperature of 20 °C;

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.

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

The EN 1555 series covers a range of MOPs and gives requirements concerning colours.

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.

NOTE 2 Additional information related to the installation of PE 100-RC systems is given in EN 1555-1:2025, Annex A.

NOTE 3 Additional information about the suitability of PE pipe systems for hydrogen and its admixtures is given in EN 1555-1:2025, Annex B.

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*

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

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

EN 1555-1:2025, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 1: General*

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

EN 1555-3:2025, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 3: Fittings*

EN 1555-5, *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*

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