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BSI Standards Publication

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

Part 1: General

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National foreword

This British Standard is the UK implementation of EN 1555-1:2021. It supersedes BS EN 1555-1:2010, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PRI/88/2, Plastics piping for pressure applications.

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

NOTE 1 There is no Part 6 in the EN 1555 series. Users of this standard should refer to BS EN 12007-2, *Gas infrastructure – Pipelines for maximum operating pressure up to and including 16 bar – Part 2: Specific functional requirements for polyethylene (MOP up to and including 10 bar)*. Users of this standard are also referred to the guidance issued by Cadent, for example T/PR/ML/4, *Work procedure for pipe system construction Module 4 – PE main laying up to and including 630 mm diameter at pressures up to and including 2 bar*.

NOTE 2 Part 7 of the EN 1555 series is under development as a CEN Technical Specification to allow further development. CEN/TS 1555-7 is not mandatory under the Public Procurement Directives (2004/18/EC and 2004/17/EC).

Users should be aware of any appropriate safety precautions related to pipework for combustible gas (see T/PR/ML/4). It is assumed in the drafting of a standard that the execution of its provisions is entrusted to appropriately qualified and competent people.

National Annex NA, which is appended at the back of this document, provides additional information on the selection and installation of piping systems and components in the UK.

Attention is drawn to the statutory legislation the Health and Safety at Work etc. Act 1974 and subsequent regulations.

The UK committee emphasizes that compliance with this British Standard does not necessarily mean that products are fit for the purpose of conveying gaseous fuels in the UK. The EN 1555 series of standards are not fully compatible with existing UK practice in terms of applicable pressure tiers, preferred colours for gas pipe recognition, jointing and installation methods.

The requirements contained in the EN 1555 series of standards are not necessarily indicative of all the performance requirements, or the suitability of pipework for the service conditions, likely to be encountered in the UK.

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Compliance with a British Standard cannot confer immunity from legal obligations.

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Amendments/corrigenda issued since publication

Date	Text affected
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English Version

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

Kunststoff-Rohrleitungssysteme für die Gasversorgung
- Polyethylen (PE) - Teil 1: Allgemeines

This European Standard was approved by CEN on 7 June 2021.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN 1555-1:2021) has been prepared by Technical Committee CEN/TC 155 "Plastics piping 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 January 2022, and conflicting national standards shall be withdrawn at the latest by January 2022.

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 1555-1:2010.

In comparison with the previous version, the following technical modifications have been introduced:

- PE 100-RC type materials with enhanced resistance to slow crack growth have been added.
- Annex A now discusses the performance of this type of material and gives additional information for non-conventional installation techniques.
- The size range has been increased to 800 mm diameter.
- Test methods have been updated.
- New test methods have been added for PE 100-RC materials.

This document has been prepared in liaison with Technical Committee CEN/TC 234 "Gas infrastructure".

System Standards are based on the results of the work being undertaken in ISO/TC 138 "Plastics pipes, fittings and valves for the transport of fluids", which is a Technical Committee of the International Organization for Standardization (ISO).

They are supported by separate standards on test methods to which references are made throughout the System Standard.

The System Standards are consistent with general standards on functional requirements and on recommended practice for installation.

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

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NOTE EN 12007-2 [1] prepared by CEN/TC 234 "Gas infrastructure" deals with the recommended practice for installation of plastics pipes system in accordance with EN 1555 (all parts).

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, Turkey 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 components of the piping system are specified in EN 1555-2:2021, EN 1555-3:2021 and EN 1555-4:2021.

Characteristics for fitness for purpose are covered in EN 1555-5:2021 [3]. CEN/TS 1555-7 [2] gives guidance for assessment of conformity. Recommended practices for installation are given in EN 12007-2 [1], prepared by CEN/TC 234.

This part of EN 1555 covers the general aspects of the plastics piping system.

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1 Scope

This document specifies the general aspects of polyethylene (PE) 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 Parts 2 to 5 of EN 1555, this document is applicable to PE pipes, fittings, and valves, their joints and to joints with components of other materials intended to be used under the following conditions:

- a) a maximum operating pressure, MOP, up to and including 10 bar¹ at a reference temperature of 20 °C for design purposes;
- b) an operating temperature between -20 °C and 40 °C.

NOTE 1 For operating temperatures between 20 °C and 40 °C, derating coefficients are defined, see EN 1555-5 [3].

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

NOTE 2 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 referenced documents are indispensable for the application 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 1555-2:2021, *Plastics piping systems for the supply of gaseous fuels - Polyethylene (PE) - Part 2: Pipes*

EN 1555-3:2021, *Plastics piping systems for the supply of gaseous fuels - Polyethylene (PE) - Part 3: Fittings*

EN 1555-4:2021, *Plastics piping systems for the supply of gaseous fuels - Polyethylene (PE) - Part 4: Valves*

EN 12099, *Plastics piping systems - Polyethylene piping materials and components - Determination of volatile content*

EN ISO 472, *Plastics - Vocabulary (ISO 472)*

EN ISO 1043-1, *Plastics - Symbols and abbreviated terms - Part 1: Basic polymers and their special characteristics (ISO 1043-1)*

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 1167-1:2006, *Thermoplastics pipes, fittings and assemblies for the conveyance of fluids - Determination of the resistance to internal pressure - Part 1: General method (ISO 1167-1:2006)*

EN ISO 1167-2, *Thermoplastics pipes, fittings and assemblies for the conveyance of fluids - Determination of the resistance to internal pressure - Part 2: Preparation of pipe test pieces (ISO 1167-2)*

EN ISO 1183-1, *Plastics - Methods for determining the density of non-cellular plastics - Part 1: Immersion method, liquid pycnometer method and titration method (ISO 1183-1)*

¹1 bar = 0,1 MPa = 10⁵ Pa; 1 MPa = 1 N/mm².