BSI Standards Publication

Plastics piping systems for industrial applications — Polybutene (PB), polyethylene (PE), polyethylene of raised temperature resistance (PE-RT), crosslinked polyethylene (PE-X), polypropylene (PP) — Metric series for specifications for components and the system

bsi.

National foreword

This British Standard is the UK implementation of EN ISO 15494:2018+A1:2020. It is identical to ISO 15494:2015, incorporating amendment 1:2020. It supersedes BS EN ISO 15494:2018, which is withdrawn.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to ISO text carry the number of the ISO amendment. For example, text altered by ISO amendment 1 is indicated by 〉A1〈.

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.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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

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30 November 2020	Implementation of ISO amendment 1:2020 with CEN endorsement A1:2020

EUROPEAN STANDARD EN ISO 15494:2018

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English Version

Plastics piping systems for industrial applications - Polybutene (PB), polyethylene (PE), polyethylene of raised temperature resistance (PE-RT), crosslinked polyethylene (PE-X), polypropylene (PP) - Metric series for specifications for components and the system (ISO 15494:2015)

Systèmes de canalisations en matières plastiques pour les applications industrielles - Polybutène (PB), polyéthylène (PE), polyéthylène de meilleure résistance à la température (PE-RT), polyéthylène réticulé (PE-X), polypropylène (PP) - Séries métriques pour les spécifications pour les composants et le système (ISO 15494:2015)

Kunststoff-Rohrleitungssysteme für industrielle Anwendungen - Polybuten (PB), Polyethylen (PE), Polyethylen erhöhter Temperaturbeständigkeit (PE-RT), vernetztes Polyethylen (PE-X), Polypropylen (PP) - Metrische Reihen für Anforderungen an Rohrleitungsteile und das Rohrleitungssystem (ISO 15494:2015)

This European Standard was approved by CEN on 19 February 2018.

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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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

European foreword

The text of ISO 15494:2015 has been prepared by Technical Committee ISO/TC 138 "Plastics pipes, fittings and valves for the transport of fluids" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 15494:2018 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 2019, and conflicting national standards shall be withdrawn at the latest by April 2019.

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 ISO 15494:2015.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZA, which is an integral part of this document.

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

Endorsement notice

The text of ISO 15494:2015 has been approved by CEN as EN ISO 15494:2018 without any modification.

Foreword to amendment A1

This document (EN ISO 15494:2018/A1:2020) has been prepared by Technical Committee ISO/TC 138 "Plastics pipes, fittings and valves for the transport of fluids" in collaboration with 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 May 2021, and conflicting national standards shall be withdrawn at the latest by May 2021.

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Endorsement notice

The text of ISO 15494:2015/Amd 1:2020 has been approved by CEN as EN ISO 15494:2018/A1:2020 without any modification.

Annex ZA
(informative)

Relationship between this European Standard and the essential requirements of Directive 2014/68/EU for pressure equipment aimed to be covered

This European Standard has been prepared under a Commission's standardization request to provide one voluntary means of conforming to essential requirements of Directive 2014/68/EU of the European Parliament and of the Council of 15 May 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of pressure equipment.

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding essential requirements of that Directive, and associated EFTA regulations.

Table ZA.1 — Correspondence between this European Standard and Annex I of the Directive 2014/68/EU

Essential Requirements of Directive 2014/68/EU	Clause(s)/sub-clause(s) of this EN	Remarks/Notes
2.2.1	A.1, B.1, C.1, D.1, E.1	Design for adequate strength
2.6	10.1	Corrosion protection
3.1.2	12	Permanent joining
3.2.2 and 7.4	8.2.1, 8.2.2, 8.2.3 A.4.1/2, B.4.1/2, C.4.1/2, D.4.1/2, E.4.1/2 A.6, B.6, C.6, D.6, E.6	Proof testing
3.3	16	Marking
4.1.a), 4.1.c)	5.2, A.1, B.1, C.1, D.1, E.1	Materials properties

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

Contents

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 documents 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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information.

The committee responsible for this document is Technical Committee ISO/TC 138, *Plastics piping systems*, Subcommittee SC 3, *Plastics pipes and fittings for industrial applications*.

This second edition cancels and replaces the first edition (ISO 15494:2003), which has been technically revised.

Introduction

This International Standard specifies the characteristics and requirements for a piping system and its components made from polybutene (PB), polyethylene (PE), polyethylene of raised temperature resistance (PE-RT), crosslinked polyethylene (PE-X), or polypropylene (PP), as applicable, intended to be used for industrial applications above ground or below ground by authorities, design engineers, certification bodies, inspection bodies, testing laboratories, manufacturers, and users.

At the date of publication of this International Standard, standards for piping systems of other plastics used for industrial applications are the following:

ISO 10931, *Plastics piping systems for industrial applications — Poly(vinylidene fluoride) (PVDF) — Specifications for components and the system*

ISO 15493, *Plastics piping systems for industrial applications — Acrylonitrile-butadiene-styrene (ABS), unplasticized poly(vinyl chloride) (PVC-U), chlorinated poly(vinyl chloride) (PVC-C) — Specifications for components and the system — Metric series*

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Plastics piping systems for industrial applications — Polybutene (PB), polyethylene (PE), polyethylene of raised temperature resistance (PE-RT), crosslinked polyethylene (PE-X), polypropylene (PP) — Metric series for specifications for components and the system

1 Scope

This International Standard specifies the characteristics and requirements for components such as pipes, fittings, and valves made from one of the following materials intended to be used for thermoplastics piping systems in the field of industrial applications above and below ground:

— polybutene (PB);

— polyethylene (PE);

— polyethylene of raised temperature resistance (PE-RT);

— crosslinked polyethylene (PE-X);

— polypropylene (PP).

NOTE 1 Requirements for industrial valves are given in this International Standard and/or in other standards. Valves are to be used with components conforming to this International Standard provided that they conform additionally to the relevant requirements of this International Standard.

This International Standard is applicable to either PB, PE, PE-RT, PE-X, or PP pipes, fittings, valves, and their joints and to joints with components of other plastics and non-plastic materials, depending on their suitability, intended to be used for the conveyance of liquid and gaseous fluids as well as solid matter in fluids for industrial applications such as the following:

— chemical plants;

— industrial sewerage engineering;

— power engineering (cooling and general purpose water);

— mining;

— electroplating and pickling plants;

— semiconductor industry;

— agricultural production plants;

— fire fighting;

— water treatment;

— geothermal.

NOTE 2 Where relevant, national regulations (e.g. water treatment) are applicable.

Other application areas are permitted if the requirements of this International Standard and/or applicable national requirements are fulfilled.

National regulations in respect of fire behaviour and explosion risk are applicable.