



## BSI Standards Publication

# Plastics piping systems for water supply and for buried and above ground drainage, sewerage and irrigation under pressure - Oriented unplasticized poly(vinyl chloride) (PVC-O)

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Part 2: Pipes

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## National foreword

This British Standard is the UK implementation of EN 17176-2:2019.

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 secretary.

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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## EUROPÄISCHE NORM

April 2019

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English Version

Plastics piping systems for water supply and for buried  
and above ground drainage, sewerage and irrigation under  
pressure - Oriented unplasticized poly(vinyl chloride)  
(PVC-O) - Part 2: Pipes

Systèmes de canalisations en plastique pour  
l'alimentation en eau, les branchements et collecteurs  
d'assainissement et les systèmes d'irrigation sous  
pression, enterrés ou aériens - Poly(chlorure de vinyle)  
non plastifié orienté (PVC-O) - Partie 2 : Tubes

Kunststoff-Rohrleitungssysteme für die  
Wasserversorgung und für erdverlegte und nicht  
erdverlegte Entwässerungs-, Abwasser- und  
Bewässerungsdruckleitungen - Orientiertes  
weichmacherfreies Polyvinylchlorid (PVC-O) - Teil 2:  
Rohre

This European Standard was approved by CEN on 14 January 2019.

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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**

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<b>Contents</b>		Page
European foreword.....		4
Introduction .....		5
1	Scope.....	6
2	Normative references.....	6
3	Terms and definitions .....	8
4	Symbols.....	8
5	Material.....	8
5.1	General.....	8
5.2	Density .....	8
5.3	MRS class.....	8
5.4	Orientation factor .....	9
6	General characteristics .....	9
6.1	Appearance.....	9
6.2	Colour .....	9
6.3	Opacity .....	9
6.4	Classification of pipes .....	10
6.4.1	Classification.....	10
6.4.2	Calculation of wall thickness.....	10
7	Geometrical characteristics .....	10
7.1	Measurement of dimensions.....	10
7.2	Length of pipes .....	10
7.3	Nominal outside diameters and wall thicknesses.....	11
7.4	Pipes with integral sockets with elastomeric sealing ring type.....	13
7.5	Pipe ends with integral sockets with solvent cement joints .....	14
7.6	Plain ends.....	14
8	Selection of pipes.....	14
8.1	Selection of nominal pressure and pipe series S for water up to and including 25 °C.....	14
8.2	Determination of the allowable operating pressure for water up to 45 °C.....	14
9	Mechanical characteristics .....	15
9.1	Resistance to hydrostatic pressure .....	15
9.1.1	General.....	15
9.1.2	Pipes.....	17
9.1.3	Pipes with integral sockets.....	17
9.2	Impact strength.....	17
9.3	Ring stiffness.....	18
10	Physical characteristics .....	18
11	Sealing rings.....	19
12	Adhesives .....	19
13	Marking.....	20
13.1	General.....	20
13.2	Minimum required marking .....	20

This is a preview of "BS EN 17176-2:2019". [Click here to purchase the full version from the ANSI store.](#)

<b>13.3 Additional marking</b> .....	<b>20</b>
<b>Annex A (normative) Establishment of the pipe material classification</b> .....	<b>21</b>
<b>A.1 General</b> .....	<b>21</b>
<b>A.2 Determination of pipe material classification</b> .....	<b>21</b>
<b>A.2.1 Procedure</b> .....	<b>21</b>
<b>A.2.2 Classified feedstock material</b> .....	<b>21</b>
<b>A.2.3 Not classified feedstock material</b> .....	<b>21</b>
<b>Annex B (normative) Minimum depth of engagement of sockets</b> .....	<b>22</b>
<b>B.1 General</b> .....	<b>22</b>
<b>B.2 Calculation of depth of engagement</b> .....	<b>22</b>
<b>Annex C (normative) Temperature derating factor</b> .....	<b>25</b>
<b>Annex D (informative) Calculation of negative pressure capability of pipes</b> .....	<b>26</b>
<b>D.1 Negative pressure capability of pipes</b> .....	<b>26</b>
<b>Annex E (normative) Determination of axial and circumferential orientation factor</b> .....	<b>27</b>
<b>E.1 Principle</b> .....	<b>27</b>
<b>E.2 Method</b> .....	<b>27</b>
<b>E.3 Test parameters</b> .....	<b>27</b>
<b>E.4 Test procedure</b> .....	<b>27</b>
<b>Bibliography</b> .....	<b>29</b>

This is a preview of "BS EN 17176-2:2019". [Click here to purchase the full version from the ANSI store.](#)

## European foreword

This document (EN 17176-2:2019) 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 September 2019 and conflicting national standards shall be withdrawn at the latest by September 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.

EN 17176 consists of the following parts, under the general title *Plastics piping systems for water supply and for buried and above ground drainage, sewerage and irrigation under pressure — Oriented unplasticized poly(vinyl chloride) (PVC-O)*:

- *Part 1: General*;
- *Part 2: Pipes* (this document);
- *Part 3: Fittings* (Technical Specification);
- *Part 5: Fitness for purpose of the system*;
- *Part 7: Guidance for assessment of conformity* (in preparation).

For valves, see EN ISO 1452-4 [3].

Guidance for installation is given in ISO/TR 4191 [4].

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.

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## Introduction

The System Standard, of which this is Part 2, specifies the requirements for a piping system made from oriented unplasticized poly(vinyl chloride) (PVC-O) pipes and its components. The piping system is intended to be used for water supply, pressurized drainage, sewerage, treated waste water and irrigation systems to be used underground or above ground where protected from direct sunlight.

In respect of potential adverse effects on the quality of water intended for human consumption, caused by the products covered by this part of EN 17176, the following is relevant:

- a) This part of EN 17176 provides no information as to whether or not the products can be used without restriction.
- b) Existing national regulations concerning the use and/or the characteristics of these products remain in force.

Requirements and test methods for PVC-O components are specified in EN 17176-1 and CEN/TS 17176-3. For other components (not manufactured from PVC-O) reference is made to the following standards: EN ISO 1452-3 (PVC-U) [2] and EN 12842 (Cast Iron) [1]. Characteristics for fitness for purpose (mainly for joints) are established in EN 17176-5.

This part of EN 17176 specifies the characteristics of PVC-O pipes.

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## 1 Scope

This part of EN 17176 specifies the characteristics of solid-wall pipes made of oriented unplasticized poly(vinyl chloride) (PVC-O) for piping systems intended for water supply and for buried drainage, sewerage, treated waste water and irrigation under pressure or above-ground where protected from direct sunlight. It also specifies the test parameters for the test methods referred to in this document.

In conjunction with EN 17176-1 and EN 17176-5, it is applicable to oriented PVC-O pipes with or without integral socket intended to be used for the following:

- a) water mains and services lines;
- b) conveyance of water for both outside and inside buildings;
- c) drainage, sewerage and treated waste water under pressure;
- d) irrigation under pressure.

It is applicable to piping systems intended for the supply of water with a maximum allowable operating pressure (PFA) up to and including 25 bar<sup>1)</sup>. The piping system according to this document is intended for the conveyance of cold water up to and including 45 °C and especially in those applications where special performance requirements are needed, such as impact loads and pressure fluctuations.

For temperatures between 25 °C and 45 °C, Figure C.1 of this document applies.

This part of EN 17176 specifies a range of pipe sizes and pressure classes and gives a requirement and recommendations concerning colours.

**NOTE** 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.

EN 681-1, *Elastomeric seals — Materials requirements for pipe joint seals used in water and drainage applications — Part 1: Vulcanized rubber*

EN 14814, *Adhesives for thermoplastic piping systems for fluids under pressure - Specifications*

EN 17176-1:2019, *Plastics piping systems for water supply and for buried and above ground drainage, sewerage and irrigation under pressure — Oriented unplasticized poly(vinyl chloride) (PVC-O) — Part 1: General*

EN 17176-5, *Plastic piping systems for water supply and for buried and above ground drainage, sewerage and irrigation under pressure — Oriented unplasticized poly(vinyl chloride) (PVC-O) — Part 5: Fitness for purpose of the system*

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1) 1 bar = 0,1 MPa = 10<sup>5</sup> Pa; 1 MPa = 1 N/mm<sup>2</sup>.