



BSI Standards Publication

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 3: Fittings

National foreword

This Published Document is the UK implementation of CEN/TS 17176-3:2019.

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.

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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 1: General

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 1 : Généralités

Kunststoff-Rohrleitungssysteme für die
Wasserversorgung und für erdverlegte und nicht
erdverlegte Entwässerungs-, Abwasser- und
Bewässerungsdruckleitungen - Orientiertes
weichmachmittel freies Polyvinylchlorid
(PVC-O) - Teil 1: Allgemeines

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

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COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN 17176-1:2019) 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of an identical text or by endorsement, at the latest by October 2019 and conflicting national standards shall be withdrawn at the latest by October 2019.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* (this document);
- *Part 2: Pipes*;
- *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 [6].

Guidance for installation is given in ISO/TR 4191 [7].

According to the CEN-CENELEC Internal Regulation, 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.

Introduction

The System Standard, of which this is Part 1, specifies the requirements for a piping system made from oriented unplasticized poly(vinyl chloride) (PVC-O) 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 17176-2 and CEN/TS 17176-3:2018. For other components (not manufactured from PVC-O) reference is made to the following standards: EN ISO 1452-3 (PVC-U) and EN 12842 (Cast Iron). Characteristics for fitness of purpose (mainly for joints) are specified in EN 17176-5.

This part of EN 17176 specifies the general aspects and characteristics of materials.

1 Scope

This part of EN 17176 specifies the material characteristics of oriented unplasticized poly(vinyl chloride) (PVC-O) solid wall piping systems intended for water supply and for buried drainage, sewerage and irrigation under pressure or above-ground where protected from direct sunlight.

In conjunction with EN 17176-2, CEN/TS 17176-3 and EN ISO 1452-3, it is applicable to PVC-O pipes, PVC-O fittings, their joints and to joints with components of other plastics and non-plastics materials 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.

Joints constructed of other materials will meet their own standards in addition to the fitness of purpose requirements specified in EN 17176-5.

It is applicable to piping systems intended for the supply of water with a maximum allowable operating pressure (PFA) up to and including 25 bar¹⁾. 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, EN 17176-2:2018, Figure C.1 applies.

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 17176-2:2018, *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*

CEN/TS 17176-3, *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 3: Fittings*

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*

ISO 472, *Plastics — Vocabulary (ISO 472)*

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

ISO 1452-2, *Plastics piping systems for water supply and for buried and above-ground drainage and sewerage under pressure — Unplasticized poly(vinyl chloride) (PVC-U) — Part 2: Pipes (ISO 1452-2)*

ISO 1452-3, *Plastics piping systems for water supply and for buried and above-ground drainage and sewerage under pressure — Unplasticized poly(vinyl chloride) (PVC-U) — Part 3: Fittings (ISO 1452-3)*

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