PD CEN/TS 17176-3:2022

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)

Part 3: Fittings

bsi.

National foreword

This Published Document is the UK implementation of CEN/TS 17176-3:2022. It supersedes PD CEN/TS 17176-3:2019, which is withdrawn.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.

Contractual and legal considerations

This publication has been prepared in good faith, however no representation, warranty, assurance or undertaking (express or implied) is or will be made, and no responsibility or liability is or will be accepted by BSI in relation to the adequacy, accuracy, completeness or reasonableness of this publication. All and any such responsibility and liability is expressly disclaimed to the full extent permitted by the law.

This publication is provided as is, and is to be used at the recipient's own risk.

The recipient is advised to consider seeking professional guidance with respect to its use of this publication.

This publication is not intended to constitute a contract. Users are responsible for its correct application.

This publication is not to be regarded as a British Standard.

Published by BSI Standards Limited 2022

ISBN 978 0 539 18849 3

ICS 23.040.20; 23.040.45

Compliance with a Published Document cannot confer immunity from legal obligations.

This Published Document was published under the authority of the Standards Policy and Strategy Committee on 30 June 2022.

Amendments/corrigenda issued since publication

Date	Text affected

TECHNICAL SPECIFICATION

SPÉCIFICATION TECHNIQUE

TECHNISCHE SPEZIFIKATION

CEN/TS 17176-3

April 2022

ICS 23.040.20; 23.040.45

Supersedes CEN/TS 17176-3:2019

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 3: Fittings

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 3 : Raccords

Kunststoff-Rohrleitungssysteme für die Wasserversorgung und für erdverlegte und nicht erdverlegte Entwässerungs-, Abwasser- und Bewässerungsdruckleitungen - Orientiertes weichmacherfreies Polyvinylchlorid (PVC-O) - Teil 3: Formstücke

This Technical Specification (CEN/TS) was approved by CEN on 13 March 2022 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

CEN members are the national standards bodies of 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 United Kingdom.

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

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

Ref. No. CEN/TS 17176-3:2022 E

Contents

Page

European foreword

This document (CEN/TS 17176-3:2022) has been prepared by Technical Committee CEN/TC 155 "Plastics piping systems and ducting systems", the secretariat of which is held by NEN.

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 CEN/TS 17176-3:2019.

In comparison with the previous edition, the following modifications have been made:

— in Table 1 60 °C deleted;

— mistakes corrected in Table 2 and Annex B;

— additional information requests as in the B.5 Test report.

The revision of CEN/TS 17176-3:2019 is proposed to revise Annex B in order to avoid misinterpretation and confusion in the market regarding reporting and use of the test results. In addition, mistakes identified in Table 2 are amended.

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*;

— *Part 3: Fittings* (this document);

— *Part 5: Fitness for purpose of the system*;

— *Part 7: Guidance for assessment of conformity* (in preparation).

For valves, see EN ISO 1452-4.

Guidance for installation is given in ISO/TR 4191 [3].

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 announce this Technical Specification: 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.

Introduction

The System Standard, of which this is Part 3, 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 document, the following is relevant:

a) This document 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 material and components, other than fittings, are specified in EN 17176-1 and EN 17176-2. 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 for purpose (mainly for joints) are specified in EN 17176-5.

This document specifies the characteristics of PVC-O fittings.

1 Scope

This document specifies the characteristics of solid-wall oriented unplasticized poly(vinyl chloride) (PVC-O) fittings 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. The scope of this document is limited to double sockets, repair couplings, reducers and to non-end load bearing elbows.

NOTE 1 The scope of this document is restricted to fittings on the market during the preparation of this document. Therefore, tees, flange adaptors, etc., are excluded from this version of the standard.

NOTE 2 For double sockets, repair couplings and reducers there are no special fittings designs for end load bearing applications. However, restrained gaskets can be used for end-load bearing applications. In that case, the requirements of EN 17176-5 are applicable.

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, this document is applicable to oriented PVC-O fittings 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.

This document is applicable to piping systems intended for the supply of water with a maximum allowable operating pressure (PFA) up to and including 25 bar[1]. 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 17176-2:2019, Figure C.1 applies.

This document specifies a range of fitting sizes and pressure classes and gives a requirement and recommendations concerning colours.

NOTE 3 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 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*

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