



SLOVENSKI STANDARD
oSIST prEN 17821:2022
01-april-2022

Proti zmrzali odporne zunanje pipe za zunanjo uporabo - Splošna tehnična specifikacija

Frost resistant outdoor taps for outdoor use - General technical specification

Frostbeständige Außenarmaturen für den Außenbereich - Allgemeine technische Spezifikation

Robinets résistant au gel pour une utilisation en extérieur - Spécifications techniques générales

iTeh STANDARD
PREVIEW
(standards.iteh.ai)

Ta slovenski standard je istoveten z: prEN 17821

oSIST prEN 17821:2022

<https://standards.iteh.ai/catalog/standards/sist/0b0953c4-166f-4509-9d8b-958a908f23c4/osist-pren-17821-2022>

ICS:

23.060.01	Ventili na splošno	Valves in general
91.140.60	Sistemi za oskrbo z vodo	Water supply systems

oSIST prEN 17821:2022

en,fr,de

**iTeh STANDARD
PREVIEW
(standards.iteh.ai)**

[oSIST prEN 17821:2022](https://standards.iteh.ai/catalog/standards/sist/0b0953c4-166f-4509-9d8b-958a908f23c4/osist-pren-17821-2022)

<https://standards.iteh.ai/catalog/standards/sist/0b0953c4-166f-4509-9d8b-958a908f23c4/osist-pren-17821-2022>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN 17821

February 2022

ICS 23.060.01; 91.140.60

English Version

Frost resistant outdoor taps for outdoor use - general technical specification

Robineets résistant au gel pour une utilisation en extérieur - Spécifications techniques générales

Frostbeständige Außenarmaturen für den Außenbereich - Allgemeine technische Spezifikation

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 164.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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.

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.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



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

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

Contents	Page
European foreword	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	5
4 Materials	6
4.1 General.....	6
4.2 Dezincification resistant copper alloy	6
4.3 Corrosion	6
5 Characteristics	7
5.1 Dimensions and Design	7
5.2 Protection unit.....	9
5.3 Resistance against to damage by frost	9
5.4 Types of connection	9
5.5 General tolerances	10
6 Test methods and requirements	10
6.1 Determination of automatic drainage.....	10
6.2 Determination of resistance against damage by frost by controlled expansion	11
6.3 Leak tightness characteristics.....	12
6.4 Bending test.....	13
6.5 Torsion strength of control elements.....	15
6.6 Mechanical endurance characteristics of the operating mechanism	15
6.7 Resistance under internal pressure.....	17
6.8 Flow rate	18
6.9 Acoustic behaviour.....	19
7 Marking and technical product information	19
7.1 General.....	19
7.2 Marking	19
7.3 Technical product information.....	20
Annex A (informative) Tests and sampling	21
Bibliography	22

European foreword

This document (prEN 17821:2022) has been prepared by Technical Committee CEN/TC 164 “Water supply”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

The requirements with regard to the drinking water quality are specified in national regulations.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[oSIST prEN 17821:2022](https://standards.iteh.ai/catalog/standards/sist/0b0953c4-166f-4509-9d8b-958a908f23c4/osist-pren-17821-2022)

<https://standards.iteh.ai/catalog/standards/sist/0b0953c4-166f-4509-9d8b-958a908f23c4/osist-pren-17821-2022>

prEN 17821:2022 (E)

1 Scope

This document specifies general construction, performance and material requirements for the tapware FRT, PN 10. The application in the drinking water installation with a static pressure of maximum 1,0 MPa (10 bar) and a distribution temperature of maximum 25 °C (PWC).

The conditions of use are according to the following Table 1:

Table 1 — Conditions of use

Supply	Dimension	Operating Range	
Pressure	DN 15 to DN 20	recommended	limits
Pressure static — max.		≤ 1,0 MPa (10,0 bar)	
Pressure dynamic — min.		≥ 0,1 to 0,5 MPa (1 to 5 bar)	≥ 0,05 MPa (0,5 bar)
Temperature cold — PWC		≤ 25 °C	



Key

- 1 indoor area
- 2 area in the wall
- 3 outdoor area

oSIST prEN 17821:2022
<https://standards.iteh.ai/catalog/standards/sist/0b0953c4-166f-4509-9d8b-958a908f23c4/osist-pren-17821-2022>

Figure 1 — The different areas of FRT

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 1254 series, *Copper and copper alloys - Plumbing fittings*

EN 1333, *Flanges and their joints - Pipework components - Definition and selection of PN*

EN 1488:2021, *Building valves - Expansion groups - Tests and requirements*

EN 1717, *Protection against pollution of potable water in water installations and general requirements of devices to prevent pollution by backflow*

EN 13959, *Anti-pollution check valves - DN 6 to DN 250 inclusive family E, type A, B, C and D*

EN 14451, *Devices to prevent pollution by backflow of potable water - In-line anti-vacuum valves DN 10 to DN 50 inclusive - Family D, type A*

EN 14454, *Devices to prevent pollution by backflow of potable water - Hose union backflow preventer DN 15 to DN 32 - Family H, type A*

EN 14455, *Devices to prevent pollution by backflow of potable water - Pressurised air inlet valves DN 15 to DN 50 - Family L, type A and type B*

EN 15096, *Devices to prevent pollution by backflow of potable water - Hose Union anti-vacuum valves - DN 15 to DN 25 inclusive Family H, type B and type D - General technical specification*

EN ISO 3822-1, *Acoustics - Laboratory tests on noise emission from appliances and equipment used in water supply installations - Part 1: Method of measurement (ISO 3822-1)*

EN ISO 3822-2, *Acoustics - Laboratory tests on noise emission from appliances and equipment used in water supply installations - Part 2: Mounting and operating conditions for draw-off taps and mixing valves (ISO 3822-2)*

EN ISO 6708, *Pipework components - Definition and selection of DN (nominal size) (ISO 6708)*

EN ISO 6509-1, *Corrosion of metals and alloys — Determination of dezincification resistance of copper alloys with zinc — Part 1: Test method (ISO 6509-1)*

EN ISO 9227, *Corrosion tests in artificial atmospheres - Salt spray tests (ISO 9227)*

3 Terms and definitions (standards.iteh.ai)

For the purposes of this document, the terms and definitions given in EN 1717 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at <https://www.iso.org/obp>

— IEC Electropedia: available at <https://www.electropedia.org/>

3.1

FRT

frost resistant taps for outdoor use defined by:

- method of achieving frost resistance (for example by drainage or by volume compensation)
- pre-assembled or assembled on-site
- fix and adjustable length

one or two outlets (must be safe for every outlet)

3.2

PWC

potable water cold

Note 1 to entry: The temperature is not higher than 25 °C according to the European Drinking Water Directive.

prEN 17821:2022 (E)**3.3****indoor area**

area inside of the wall of the buildings

Note 1 to entry: The air temperature shall be higher than 0 °C.

3.4**area in the wall**

the wall of the building.

Note 1 to entry: Locally the temperature can be lower than 0 °C.

3.5**outdoor area**

area in front of the wall of the buildings

3.6**nominal size****DN**

nominal sizes (DN) of FRT, corresponding to EN ISO 6708 and related to the size of the inlet connection end

3.7**nominal pressure****PN**

nominal pressures PN 10 applies, corresponding to EN 1333

4 Materials**4.1 General**

The end connection in the indoor area (1) and the body in the front of the wall (3) — as indicated in Figure 1 — shall be made of metallic materials.

All materials which coming into contact with water intended for human consumption shall present no health risk nor cause any change to the water in terms of quality, appearance, smell or taste.

NOTE It is noted that while awaiting the adoption of verifiable European criteria for testing materials in contact with water intended for human consumption, existing national regulations concerning the use and/or the characteristics of these products remain in force.

4.2 Dezincification resistant copper alloy

Copper-zinc alloys containing more than 10 % zinc are subject to dezincification when submitted to water capable of dezincification. In the countries where the use of products made of dezincification resistant materials is required, the materials used shall guarantee a dezincification depth less than 200 µm in any direction. For this purpose, materials shall be tested in accordance with EN ISO 6509-1 and the product shall be marked in compliance with the indications according to Clause 7.

4.3 Corrosion**4.3.1 General**

The applied materials shall be corrosion resistant or protected against corrosion. The materials used may not have an adverse effect on each other.

4.3.2 Corrosion resistance test

4.3.2.1 General

The purpose of the corrosion resistance test is to qualify all used materials of the external part of the FRT (Figure 1, area 3), especially when used in a humid atmosphere where condensation water may occur. The whole FRT shall be tested, not only the parts in contact with potable water, e.g. springs, spring caps etc.

4.3.2.2 Test method

Samples shall be prepared for the corrosion resistance test as described as follows.

Carry out the test under the conditions described in EN ISO 9227 specifically for the neutral saline-spray test, in the following way:

- a) Subject the device to spraying for at least 100 h, interrupt the spraying treatment for (48 ± 1) h while maintaining the heat in the tank and resume the spraying treatment for another (100 ± 1) h.
- b) For the duration of the tests, the tank should only be opened to check and maintain the conditions, the maximum rest period in spraying being 30 min per day. The heating should not be interrupted; samples under test should not be handled, washed or checked.
- c) After treatment and before visual examination, rinse the test samples in water to remove any salt residue.

4.3.2.3 Requirements

The FRT shall comply with the requirements given in EN 1488:2021, 9.3.2.

After the test, the FRT shall be disassembled and inspected visually for corrosion. No corrosion shall occur on any component.

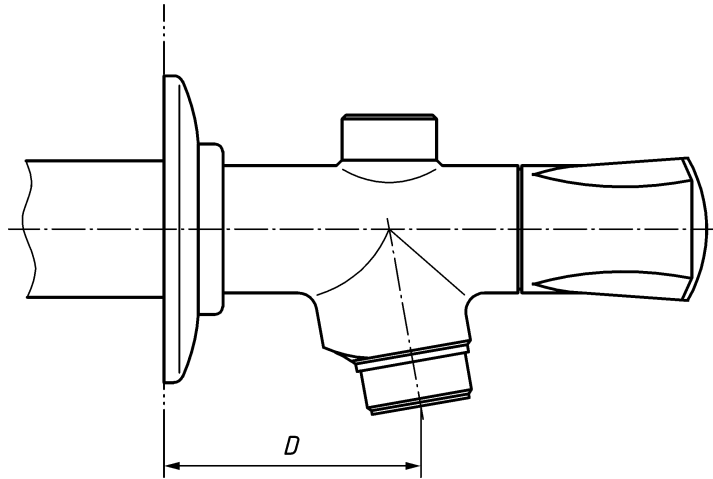
5 Characteristics

5.1 Dimensions and Design

For the different kind of FRT are the defined distances and requirements in this document to fulfil.

The design and construction of components without defined dimensions permits various design solutions to be adopted by the manufacturer.

The minimum required distances to the wall are shown in Table 2. Figure 2 and Figure 3 are only an illustration of possibilities for design/construction.

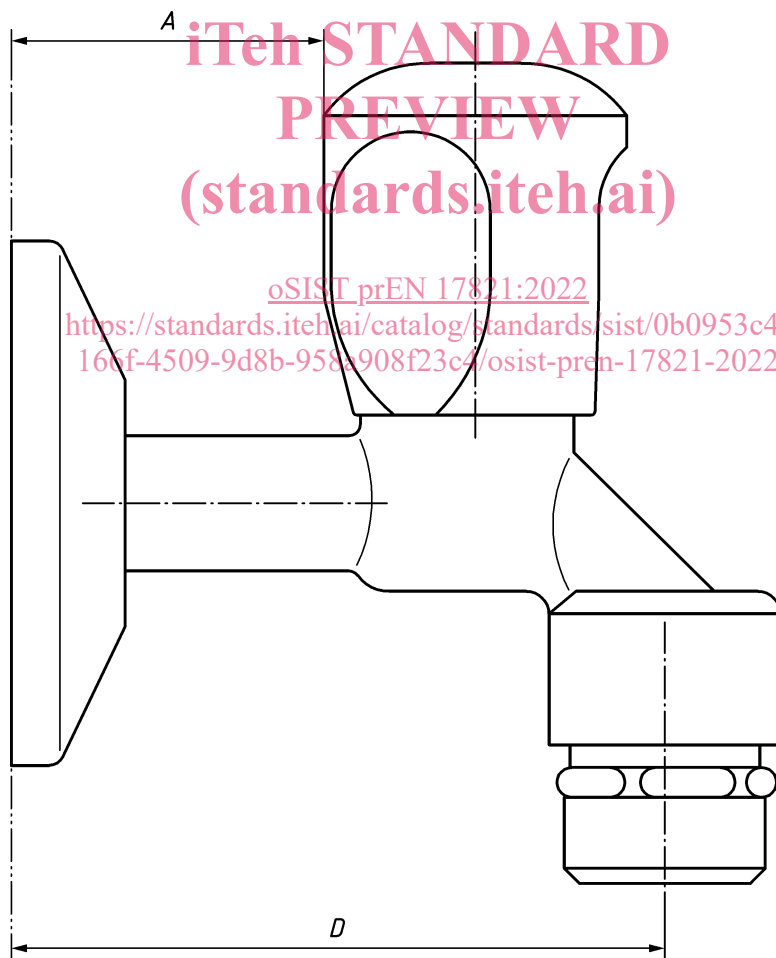


Key

- I
- D

Figure 2 — Outlet dimensions for FRT (“front operated”)

NOTE For the “front operated” FRT other designs and/or angles for the outlet are possible.



Key

- A
- D

Figure 3 — Outlet dimensions for FRT (“above operated”)

Table 2 — Outlet dimensions

Dimensions in mm

<i>D</i>	min. 30
<i>A</i>	min. 30

NOTE For the “above operated” FRT other designs are possible. The distance *D* is between the wall and the cross point of middle line and thread end is to measure.

5.2 Protection unit

A protection unit shall be integrated in the complete product.

Backflow prevention and combination shall be according to EN 1717.

When/If the tap has the possibility to connect fitting/pipe to the outlet the backflow prevention shall comply with the according product standard:

- EN 14454 (HA)
- EN 15096 (HD)
- EN 14455 (LB)
- EN 13959 (EB) in combination with EN 14451 (DA)

5.3 Resistance against to damage by frost

5.3.1 General

FRT shall be prevented for damage by frost by means of valves with drainage function. Following two kinds of resistance against to damage by frost are possible:

- automatic drainage;
- controlled expansion (without drainage function).

5.3.2 FRT with automatic drainage

The test procedure for FRT with automatic drainage as defined in 6.1.

5.3.3 FRT with controlled expansion (without drainage function)

The test procedure for FRT with controlled expansion (without drainage function) as defined in 6.2.

5.4 Types of connection

Inlet connections shall comply with the EN 1254 series, with the exception of EN 1254-1 and EN 1254-5 (ends for capillary soldering or capillary brazing to copper tubes).

Valves with threaded connection ends shall have flats on the body which, when used for fitting, shall accommodate commercially available tools.

The connection ends as applied shall be suitable (and approved as such) for the nominal pressure of the valve.

Other types of connection are approved if they have been proven suitable.