



SLOVENSKI STANDARD
oSIST prEN 18021:2024
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Sanitarne armature - Merjenje funkcionalne učinkovitosti pip in tušev

Sanitary tapware - Measurement of functional performance of taps and showers

Sanitärarmaturen - Messung der Funktionsfähigkeit von Armaturen und Brausen

Robinetterie sanitaire - Mesure des performances fonctionnelles des robinets et des douches

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Sanitarne naprave

Sanitary installations

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English Version

Sanitary tapware - Measurement of functional performance of taps and showers

Sanitärarmaturen - Messung der Funktionsfähigkeit von Armaturen und Brausen

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

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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prEN 18021:2023 (E)**European foreword**

This document (prEN 18021:2023) 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.

This document has been prepared under a standardisation request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

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Introduction

In respect of potential adverse effects on the quality of water intended for human consumption, caused by the product covered by this document.

This document provides no information as to whether the product can be used without restriction in any of the Member States of the EU or EFTA.

It should be noted that, while awaiting the adoption of verifiable European criteria, existing national regulations concerning the use and/or the characteristics of these products remain in force.

This document defines the test procedures for the measurement of energy and flow rate and functional performance for taps, shower outlets, shower sets and shower systems.

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prEN 18021:2023 (E)**1 Scope**

This document acknowledges the field of application for taps, shower outlets, shower sets and shower systems used in water supply systems with a pressure range of (0,05 to 1,0) MPa (0,5 bar to 10 bar).

The tests described in this document are type tests (laboratory tests) and not quality control tests carried out during manufacture.

This document covers:

- PN10 taps;
- PN10 shower outlets;
- PN10 shower sets;
- PN10 shower systems.

Following products are excluded from this document:

- shower taps on its own;
- taps for filling bathtubs;
- the tub filling function of combined taps;
- the function of a tap that delivers e.g. boiling water or sparkling water, etc.;
- electric showers;
- body or side jet showers.

The conditions of use for taps and shower systems are given in Table 1. The conditions of use for showers sets and shower outlets are given in Table 2.

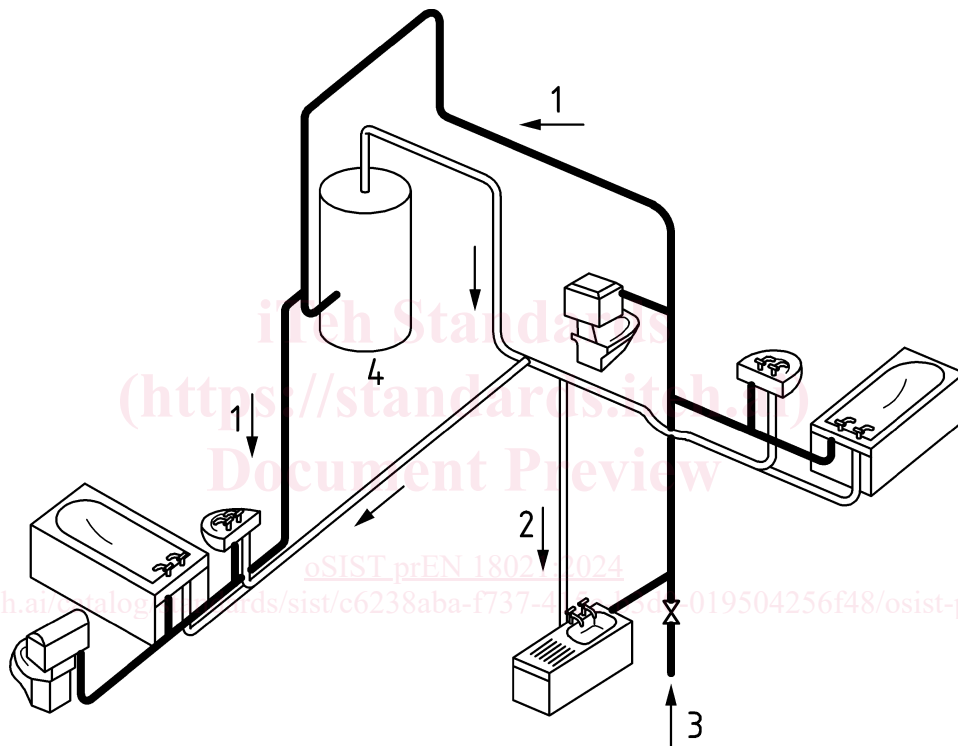
Table 1 — Condition of use for taps and shower systems

Water supply system	Operating range of taps and shower systems	
	Limits	Recommended
see Figure 1	dynamic pressure ≥ 0,05 MPa (0,5 bar) static pressure ≤ 1,0 MPa (10,0 bar)	dynamic pressure (0,1 to 0,5) MPa [(1,0 to 5,0) bar] ^b
temperature	≤ 70 °C ^a	≤ 65 °C
<p>^a This maximum temperature limit can only be reached for short durations no greater than 1 h.</p> <p>^b Measured at the point of discharge.</p>		

NOTE Taps and shower systems for use at pressures lower than those in Table 1 are covered by in a separate standard.

Table 2 — Conditions of use for shower outlets and shower sets

Water supply system	Operating range of showers	
	Limits	Recommended
see Figure 1	dynamic pressure ≥ 0,05 MPa (0,5 bar) static pressure ≤ 0,5 MPa (5,0 bar)	dynamic pressure (0,1 to 0,3) MPa [(1,0 to 3,0) bar]
temperature	≤ 70 °C	≤ 42 °C

**Key**

- 1 cold water
- 2 hot water
- 3 mains supply pipe (supply pressures up to 10 bar)
- 4 water heater

Figure 1 — Supply system with a pressure range of (0,05 to 1,0) MPa [(0,5 to 10) bar]

Health and quality requirements in accordance to European and national legislation for final materials in contact with water intended for human consumption are not covered by this document.

prEN 18021:2023 (E)**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 200:2008, *Sanitary tapware — Single taps and combination taps for water supply systems of type 1 and type 2 — General technical specification*

EN 816:2017, *Sanitary tapware — Automatic shut off valves PN 10*

EN 817:2008, *Sanitary tapware — Mechanical mixing valves (PN 10) — General technical specifications*

EN 1111:2017, *Sanitary tapware — Thermostatic mixing valves (PN 10) — General technical specification*

EN 1112:2008, *Sanitary tapware — Shower outlets for sanitary tapware for water supply systems of type 1 and type 2 — General technical specification*

EN 15091:2013, *Sanitary tapware — Electronic opening and closing sanitary tapware*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1**tap**

sanitary tapware designed to deliver water to the end user for various types of installation such as kitchen taps, washbasin taps, bidets, combination taps, pillar taps, including time flow or sensor operated products etc. (see EN 200, EN 816, EN 817, EN 1111, EN 15091)

3.2**fitting**

component attached to the end of a flexible hose to facilitate connection to appliances

3.3**automatic shut off valve**

<non electronic (time flow)> sanitary tapware whose opening is operated by a non-electronic action on the control device, and whose closure happens automatically after a period of adjustable or non-adjustable duration (see EN 816)

<electronic (sensors)> sanitary tapware whose opening is operated by an electronic sensor recognising presence of a user, and whose closure happens automatically when the presence is removed (see EN 15091)

3.4**mechanical mixing valve**

valve which mixes hot and cold water (see EN 817)

3.5

thermostatic mixing valve

valve, which mixes hot and cold water and automatically controls the mixed water to a user selected temperature (see EN 1111)

3.6

fixed shower

shower which is fixed to a wall or ceiling and should be fixed in normal use (see EN 1112)

Note 1 to entry: It is also known as head shower.

3.7

hand shower

shower which is mainly held by hand or placed in a separate holder (see EN 1112)

3.8

shower outlet

any hand shower or fixed shower (excluding body or side jets) (see EN 1112)

Note 1 to entry: Sprays that are permanently integrated into the fitting or can be pulled out (e.g. mixer taps for sinks and washbasins) are not considered as shower outlets.

Note 2 to entry: Extractable outlets are defined in 3.16.

3.9

shower system

shower solution

system that is used to indicate the combination of a shower control (valve) with shower connection(s) (flexible or rigid) and shower outlet(s)

Note 1 to entry: It may also contain non-performance components as shower rail and hand shower holder.

3.10

shower set

set that consists of one or more shower outlets equipped with additional components e.g. shower hose or shower arm

Note 1 to entry: It may also contain non-performance components as shower rail and hand shower holder.

Note 2 to entry: It does not contain a shower control (valve).

3.11

aerator

device which is fitted at the outlet of a sanitary tapware product to impact the flow rate and stream appearance of the water stream

3.12

control means

lever, handle or other means of control on a tap by which the user starts, stops or adjusts the water flow and/or temperature from the sanitary tapware using a hand action

3.13

diverter

moveable component used to change the direction of the flow of water between outlets

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Note 1 to entry: A distinction is made between:

a) automatic diverter

the mechanism rests in a default position and is changed by the end user to another outlet position but automatically returns to the default position on reduction of pressure;

b) semi-automatic diverter

can be locked in a position other than the default outlet position;

c) manual diverter

outlets manually selected by the end user;

d) diverter with flow control/obturator (diverter/valve);

e) obturator with on/off flow control that can serve more than one outlet.

3.14**flexible hose assembly**

flexible hose with or without braiding and furnished with fittings to connect the sanitary tapware to the water supply (see EN 13618)

3.15**flexible outlet hose**

flexible hose which connects sanitary tapware to an extractable outlet (see EN 16146)

3.16**extractable outlet**

moveable hand-held outlets designed to be fitted to sanitary tapware via an extractable hose (see EN 16145)

3.17**flow regulator**

device, which is fitted to or within sanitary tapware, to enable dynamic control of the delivered water flow rate

Note 1 to entry: A flow regulating device that could be housed in a dedicated housing that could also include isolating valves and check valves as part of the design.

3.18**headworks**

mechanism that allows for the control of the obturator by the user. Typically, headworks are one of two design concepts:

- a) traditional, which uses a screw down method with a (typically) elastomeric seal to create leaktightness in the closed position;
- b) modern, which uses (typically) ceramic plates with ports that align and occlude to create leaktightness in the closed position