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Sanitary tapware - Electronic opening and closing sanitary tapware

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 06/24

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EUROPEAN STANDARD

EN 15091

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EUROPÄISCHE NORM

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Supersedes EN 15091:2013

English Version

Sanitary tapware - Electronic opening and closing sanitary tapware

Robinetterie sanitaire - Robinet sanitaire à ouverture
et fermeture électroniquesSanitärarmaturen - Sanitärarmaturen mit
elektronischer Öffnungs- und Schließfunktion

This European Standard was approved by CEN on 5 February 2024.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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EN 15091:2024 (E)

Contents	Page
European foreword	5
Introduction	6
1 Scope.....	7
2 Normative references.....	10
3 Terms and definitions.....	11
4 General requirements and testing.....	11
4.1 Marking	11
4.2 Identification	11
4.3 Materials	11
4.3.1 Chemical and hygienic requirements	11
4.3.2 Exposed surface conditions.....	11
4.4 Functions.....	12
4.5 Backflow protection.....	12
4.6 Electric characteristics and requirements	12
4.6.1 General.....	12
4.6.2 Electrical safety	12
4.6.3 Electrical operation of solenoid valves.....	13
4.6.4 Electric strength and insulation resistance of the solenoid valve	13
4.6.5 Operational safety	13
4.7 Leaktightness characteristics.....	14
4.7.1 General.....	14
4.7.2 Principle.....	14
4.7.3 Apparatus	14
4.7.4 Leaktightness of tapware upstream of the obturator	14
4.7.5 Leaktightness of tapware downstream of the obturator with the obturator open	14
4.7.6 Leaktightness tests - Summary table	15
4.8 Pressure resistance characteristics - mechanical performance under pressure.....	15
4.8.1 General.....	15
4.8.2 Principle.....	15
4.8.3 Apparatus	15
4.8.4 Procedure	15
4.8.5 Requirements.....	16
5 Requirements and testing for tapware.....	16
5.1 General.....	16
5.2 Dimensional characteristics	16
5.2.1 General.....	16
5.2.2 Tap with visible body for horizontal surfaces.....	16
5.2.3 Taps with visible body for mounting on vertical surfaces.....	18
5.2.4 In-line tapware with threaded inlet and outlet	18
5.2.5 Concealed tapware for vertical surfaces	19
5.2.6 Mixing valves for horizontal surface.....	19
5.2.7 Mixing valves with visible body for mounting on vertical surfaces with captive nuts and eccentric unions.....	21
5.2.8 Mixing valves with opposed inlets.....	21
5.2.9 Nozzle outlets for use with aerators with integrated flow regulators.....	22

5.2.10	Special cases	22
5.3	Hydraulic characteristics.....	23
5.3.1	General	23
5.3.2	Test apparatus for tapware intended for Type 1 water supply systems.....	23
5.3.3	Principle of the flow test	27
5.3.4	Requirements.....	28
5.3.5	Cross flow between hot and cold water.....	28
5.4	Water hammer.....	28
5.4.1	Principle of water hammer test.....	28
5.4.2	Test apparatus	28
5.4.3	Procedure	29
5.4.4	Requirements.....	30
5.5	Endurance	30
5.5.1	General	30
5.5.2	Principle.....	30
5.5.3	Procedure for single taps.....	30
5.5.4	Procedure for mixers	30
5.5.5	Requirements.....	31
5.6	Acoustic characteristics	31
5.6.1	General	31
5.6.2	Procedure	31
5.6.3	Requirements.....	32
6	Requirements and testing for flushing valves for urinals	33
6.1	General	33
6.2	Definitions.....	33
6.2.1	Single flush urinal valves	33
6.2.2	Siphon action flushing urinal valves.....	33
6.2.3	Isolating valves for flushing urinal valves.....	33
6.3	Classification of flushing urinal valves	33
6.4	Designation	33
6.5	Dimensional characteristics	34
6.6	Hydraulic characteristics.....	35
6.6.1	General	35
6.6.2	Test method.....	35
6.7	Measurement of water hammer for urinal flushing valves.....	35
6.7.1	Principle of water hammer test.....	35
6.7.2	Test apparatus	36
6.7.3	Procedure	36
6.7.4	Requirements.....	36
6.8	Mechanical endurance	37
6.8.1	General	37
6.8.2	Apparatus	37
6.8.3	Procedure	37
6.8.4	Requirements.....	37
7	Requirements and testing for flushing valves for WCs	37
7.1	General	37
7.2	Definitions.....	38
7.3	Classification	38
7.3.1	General	38
7.4	Dimensional characteristics	39
7.5	Hydraulic characteristics.....	40
7.5.1	General	40

EN 15091:2024 (E)

7.5.2	Test method	40
7.5.3	Testing of the flow rate/impact force at lower dynamic pressure	44
7.5.4	Testing of the flow rate/Volume at lower dynamic pressure	45
7.5.5	Testing of flush flow rate/impact force at upper dynamic pressure	46
7.5.6	Measurement of water hammer	48
7.6	Principle and verification of atmospheric pipe interrupters of WC flushing valves..	48
7.7	Mechanical endurance	48
7.7.1	General.....	48
7.7.2	Procedure	48
7.7.3	Minimum requirements	48
7.8	Acoustic characteristics.....	48
Annex A (normative) Design of pressure take-off tees		49
Annex B (informative) Potential consequences of use outside the recommended operating limits.....		51
Annex C (informative) Minimum flow rates and test pressures according to application.....		52
Bibliography		53

European foreword

This document (EN 15091:2024) has been prepared by Technical Committee CEN/TC 164 “Water supply”, the secretariat of which is held by AFNOR.

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 2024, and conflicting national standards shall be withdrawn at the latest by September 2024.

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 EN 15091:2013.

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

- markings, materials and classifications have been revised;
- test procedures w have been updated;
- adjustments to EN 12541 have been integrated;
- Annex C has been added;
- the standard has been completely revised editorially and technically.

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 implement this European Standard: 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, Türkiye and the United Kingdom.

EN 15091:2024 (E)**Introduction**

This document is relevant for electrically operated (opening and closing) sanitary tapware used with sanitary appliances, with a maximum voltage of 42 V AC/72 V DC, in the enclosure of the tap.

Such tapware can be operated by any electrical source e.g. mains with a transformer, battery, etc.

Flow and temperature regulation devices installed either upstream or downstream of the tapware are not covered by this specification.

The purpose of this document is to define requirements for the:

- a) marking, identification, leak-tightness, electrical and operational safety, mechanical performance and limitation of water hammer for electrical opening and closing tapware;
- b) dimensional, hydraulic, endurance and acoustic characteristics;
- c) procedure of tests in order to verify these characteristics.

As for possible unfavourable effects of the product to which this document applies, on the quality of water intended for human consumption:

- d) no information is provided by this document on possible use restrictions of the product in any of the member states of the EU or EFTA;
- e) it should be noted that, while awaiting the adoption of verifiable European criteria, existing national regulations concerning the use and/or characteristics of this product remain in force.

Requirements for different products are defined in different clauses of this document as illustrated in Table 1.

Table 1 — Identification of the clauses of this document

	MARKING	DIMENSIONAL CHARACTERISTICS	ENDURANCE	ACOUSTIC	ELECTRICAL SAFETY	OPERATIONAL SAFETY	LEAKTIGHTNESS	MECHANICAL RESISTANCE	HYDRAULIC CHARACTERISTICS	WATER HAMMER	WATER HAMMER FOLLOWING PRODUCT
Clause 4. General requirements and testing	X				X	X	X	X			
Clause 5. Requirements and testing for tapware		X	X	X					X	X	
Clause 6. Requirements and testing for flushing valves for urinals		X	X						X	X	
Clause 7. Requirements and testing for flushing valves for WCs		X	X	X					X		X

1 Scope

The purpose of this document is to specify requirements for marking, identification, leaktightness, electrical and operational safety and mechanical resistance for sanitary tapware with opening and closing controlled electronically.

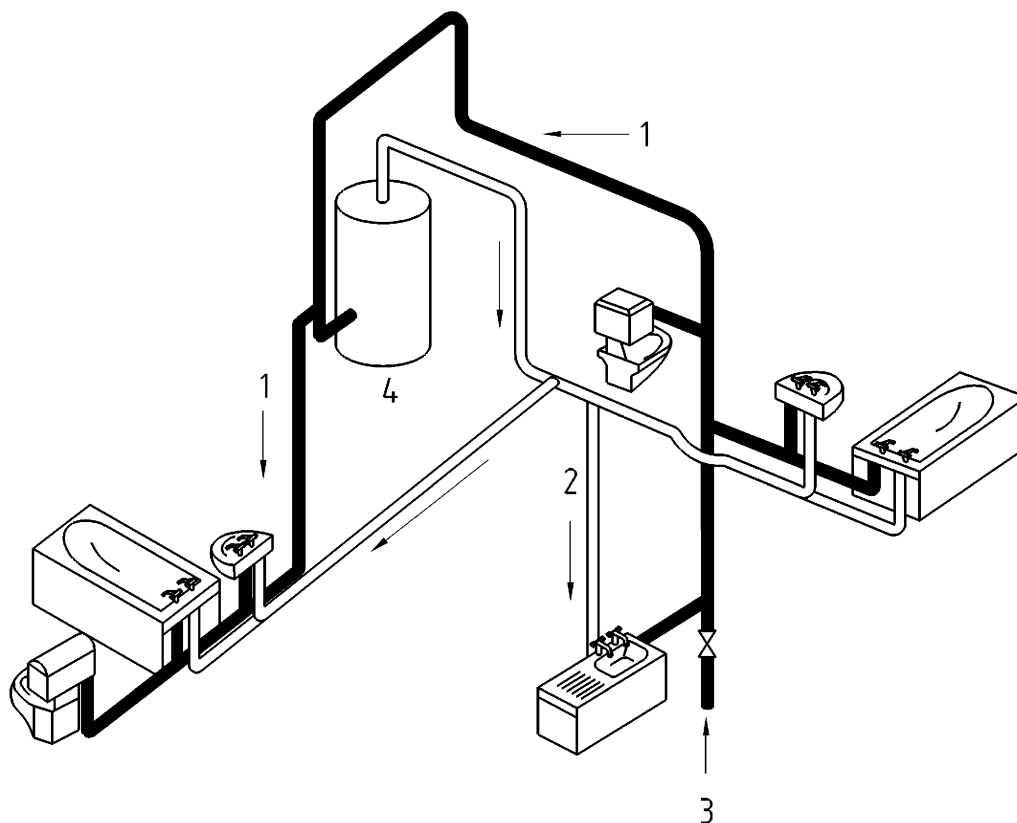
The conditions of use for the supply system type are specified in Table 2:

Table 2 — Conditions of use

Water supply system		Limits of use		Recommended limits of operation	
		Tapware with normally open or normally closed (monostable) solenoid valves	Tapware with latching (bistable) solenoid valves	Tapware with normally open or normally closed (monostable) solenoid valves	Tapware with latching (bistable) solenoid valves
Type 1 (see Figure 1)	Minimum dynamic pressure	0,05 MPa (0,5 bar)	0,05 MPa (0,5 bar)	(0,1 to 0,5) MPa [(1 to 5) bar]	(0,1 to 0,5) MPa [(1 to 5) bar]
	Maximum static pressure	1 MPa (10 bar)	1 MPa (10 bar)	1 MPa (10 bar)	0,8 MPa (8 bar)
Type 2 ^a (see Figure 2)	Minimum dynamic pressure	0,01 MPa (0,1 bar)	0,01 MPa (0,1 bar)	(0,01 to 0,2) MPa [(0,1 to 2) bar]	(0,01 to 0,2) MPa [(0,1 to 2) bar]
	Maximum static pressure	1 MPa (10 bar)	1 MPa (10 bar)	1 MPa (10 bar)	0,8 MPa (8 bar)
Temperature of the water		≤ 75 °C	≤ 75 °C	≤ 65 °C	≤ 65 °C
^a For Type 2, the manufacturer is expected to declare the minimum operating pressure at which opening, closing and the specified flow rate can be obtained. There is usually no acoustic classification for tapware used in supply systems of Type 2 and no specifications governing the level of noise emissions from these water installations. If supply pressures are such that excessive noise is generated it is advised that pressure or flow regulators are fitted in the system. Or where practicable, tapware conforming to the appropriate acoustic classification are used.					

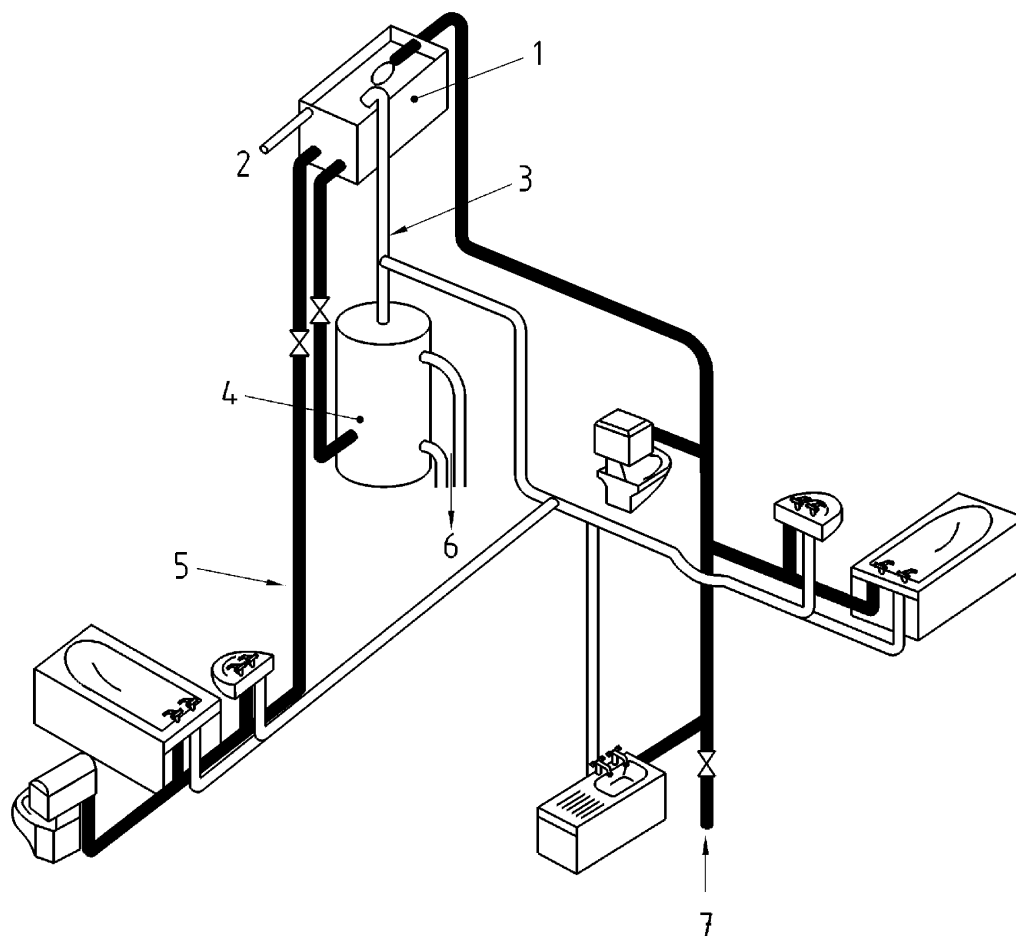
Annex B lists possible consequences of using a product outside its recommended operating range.

EN 15091:2024 (E)

**Key**

- | | |
|--------------|---|
| 1 cold water | 3 mains supply pipe (supply pressures from (0,05 to 1,0) MPa [(0,5 to 10) bar]) |
| 2 hot water | 4 water heater |

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

**Key**

- 1 cold water storage cistern (cover omitted for clarity)
- 2 warning pipe
- 3 vent pipe
- 4 hot water cylinder
- 5 alternative cistern fed cold supply to sanitary appliances
- 6 to boiler
- 7 mains supply pipe (Supply pressures up to 8 bar)

Figure 2 — Type 2 — Supply system with a pressure range of (0,01 to 0,8) MPa [(0,1 to 8) bar]

EN 15091:2024 (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 31, *Wash basins — Connecting dimensions*

EN 35, *Pedestal and wall-hung bidets with over-rim supply — Connecting dimensions*

EN 246, *Sanitary tapware — General specifications for aerators*

EN 248, *Sanitary tapware — General specification for electrodeposited coatings of Ni-Cr*

EN 695, *Kitchen sinks — Connecting dimensions*

EN 997, *WC pans and WC suites with integral trap*

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

EN 12541:2002, *Sanitary tapware — Pressure flushing valves and automatic closing urinal valves PN 10*

EN 13618, *Flexible hose assemblies in drinking water installations — Functional requirements and test methods*

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

EN 60335-1, *Safety of household and similar electrical appliances — Part 1: General requirements (IEC 60335-1)*

EN 60529, *Degrees of protection provided by enclosures (IP Code)*

EN IEC 60730-2-8, *Automatic electrical controls for household and similar use — Part 2-8: Particular requirements for electrically operated water valves, including mechanical requirements (IEC 60730-2-8)*

EN IEC 61000-6-1, *Electromagnetic compatibility (EMC) — Part 6-1: Generic standards — Immunity standard for residential, commercial and light-industrial environments (IEC 61000-6-1)*

EN 61000-6-3, *Electromagnetic compatibility (EMC) — Part 6-3: Generic standards — Emission standard for residential, commercial and light-industrial environments (IEC 61000-6-3)*

EN ISO 228-1, *Pipe threads where pressure-tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation (ISO 228-1)*

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 3822-4, *Acoustics — Laboratory tests on noise emission from appliances and equipment used in water supply installations — Part 4: Mounting and operating conditions for special appliances (ISO 3822-4)*

EN ISO 5167-1, *Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full — Part 1: General principles and requirements (ISO 5167-1)*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN