

Sanitary Tapware - Thermostatic Mixing Valves (PN 10)
- General Technical Specification

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English Version

Sanitary tapware - Thermostatic mixing valves (PN 10) - General technical specification

Robinetterie sanitaire - Mitigeurs thermostatiques (PN 10) -
Spécifications techniques générales

Sanitärarmaturen - Thermostatische Mischer (PN 10) -
Allgemeine technische Spezifikation

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European Foreword

This document (EN 1111:2017) 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of an identical text or by endorsement, at the latest by February 2018, and conflicting national standards shall be withdrawn at the latest by February 2018.

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 1111:1998.

The main technical changes compared to the previous version are the following:

- a) the introduction of Clause 10 on backflow protection;
- b) the introduction of Clause 11 on test sequence;
- c) the introduction of Clause 13 on performance;
- d) the update of chapters on pressure resistance, torsional resistance and mechanical resistance;
- e) new Annexes A, B, C and D.

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, 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

In respect of potential adverse effects on the quality of water intended for human consumption, caused by the product covered by this standard, the following should be noted:

- this standard provides no information as to whether the product can be used without restriction in any of the Member state 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 this product remain in force.

1 Scope

This European Standard specifies general construction, performance and material requirements for PN 10 thermostatic mixing valves (TMV) and includes test methods for the verification of mixed water temperature performance at the point of use below 45 °C. This does not exclude the selection of higher temperatures where available. When these devices are used to provide anti-scald protection for children, elderly and disabled persons the mixed water temperature needs to be set at a suitable bathing temperature (body temperature approximately 38 °C) as children are at risk to scalding at lower temperatures than adults. This does not obviate the need for supervision of young children during bathing.

It applies to valves intended for use on sanitary appliances in kitchens, washrooms (incl. all rooms with sanitary tapware, e.g. toilets and cloakrooms) and bath rooms operating under the conditions specified in Table 1.

This standard allows TMVs to supply a single outlet or a small number of outlets in a “domestic” application (e.g. one valve controlling a shower, bath, basin and/or bidet), excluding valves specifically designed for supplying a large number of outlets (i.e. for institutional use).

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

Table 1 — Conditions of use

Supply	Operating range	
Pressure	limits	recommended
Static	$\leq 1 \text{ MPa}$ [$\leq 10 \text{ bar}$]	
Dynamic	$\geq 0,05 \text{ MPa}$ [$\geq 0,5 \text{ bar}$]	$(0,1 \text{ to } 0,5) \text{ MPa}$ [(1 to 5) bar]
Temperature		
Hot	$\leq 90^\circ\text{C}$	$(55 \text{ to } 65)^\circ\text{C}$
Cold	$\leq 25^\circ\text{C}$	$(5 \text{ to } 20)^\circ\text{C}$

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 200, *Sanitary tapware - Single taps and combination taps for water supply systems of type 1 and type 2 - General technical specification*

EN 246, *Sanitary tapware - General specifications for flow rate regulators*

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

EN 1057, *Copper and copper alloys — Seamless, round copper tubes for water and gas in sanitary and heating applications*

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

EN 1113, *Sanitary tapware - Shower hoses for sanitary tapware for water supply systems of type 1 and type 2 - General technical specification*

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

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 14506, *Devices to prevent pollution by backflow of potable water - Automatic diverter - Family H, type C*

EN 16145, *Sanitary tapware - Extractable outlets for sink and basin mixers - General technical specification*

EN 60584 (all parts), *Thermocouples (IEC 60584)*

EN ISO 228-1, *Pipe threads where pressure-tight joints are not made on the threads - Part 1: Dimensions, tolerances and designation (ISO 228-1:2000)*

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 3822-3, *Acoustics - Laboratory tests on noise emission from appliances and equipment used in water supply installations - Part 3: Mounting and operating conditions for in-line valves and appliances*

EN ISO 3822-4:1997, *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 3822-3:1997)*

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)*

3 Terms and definitions

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

3.1

thermostatic mixing valve

TMV

valve, with one or more outlets, which mixes hot and cold water and automatically controls the mixed water to a selected temperature

3.2

fidelity

reproducibility and accuracy of temperature selection