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BSI Standards Publication

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

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## National foreword

This British Standard is the UK implementation of EN 1111:2017. It supersedes BS EN 1111:1999, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee B/504, Water supply.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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**Compliance with a British Standard cannot confer immunity from legal obligations.**

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## EUROPÄISCHE NORM

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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

This European Standard was approved by CEN on 24 April 2017.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists 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.

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**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

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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.

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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 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.

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