



**SLOVENSKI STANDARD**  
**SIST EN 1287:2017/oprA1:2021**  
**01-maj-2021**

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**Sanitarne armature - Termostatski mešalni ventili (PN 10) - Splošna tehnična specifikacija**

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

Sanitärarmaturen - Thermostatische Mischer für die Anwendung im Niederdruckbereich - Allgemeine technische Spezifikation

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

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**ICS:**

91.140.70      Sanitarne naprave      Sanitary installations

**SIST EN 1287:2017/oprA1:2021**      **en,fr,de**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**DRAFT**  
**EN 1287:2017**  
**prA1**

April 2021

ICS 91.140.70

English Version

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

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

Sanitärarmaturen - Thermostatische Mischer für die Anwendung im Niederdruckbereich - Allgemeine technische Spezifikation

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

This draft amendment A1, if approved, will modify the European Standard EN 1287:2017. If this draft becomes an amendment, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration.

This draft amendment 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.

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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.

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

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

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## European foreword

This document (EN 1287:2017/prA1:2021) 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.

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**EN 1287:2017/prA1:2021 (E)****1 Modification to Subclause 12.4.1**

*Replace entire subclause: "*

- a) Connect the tap to the test circuit;
- b) with the outlet orifice(s) artificially closed, and generally turned downwards open the obturator(s);
- c) apply to the inlet of the tap a water pressure of  $(0,4 \pm 0,02)$  MPa [ $(4,0 \pm 0,2)$  bar] and maintain it for  $(60 \pm 5)$  s and adjust its temperature control over the full range;
- d) within  $(5 \pm 1)$  s reduce the pressure to  $(0,02 \pm 0,002)$  MPa [ $(0,2 \pm 0,02)$  bar] and maintain it for  $(60 \pm 5)$  s. "

*with: "*

- a) Connect the tap to the test circuit;
- b) with the outlet orifice(s) artificially closed, and generally turned downwards open the obturator(s);
- c) apply to the inlet of the TMV a water pressure of  $(0,4 \pm 0,02)$  MPa [ $(4,0 \pm 0,2)$  bar] and maintain it for  $(60 \pm 5)$  s and adjust its temperature control over the full range;
- d) within  $(5 \pm 1)$  s reduce the pressure to  $(0,02 \pm 0,002)$  MPa [ $(0,2 \pm 0,02)$  bar] and maintain it for  $(60 \pm 5)$  s. "

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**2 Modification to Subclause 13.2.2.1**

*Replace entire subclause:*

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" The measurement is made at the maximum available flow rate going from cold to hot and then from hot to cold. For the measurement a TMV as supplied or the outlet pipework, as defined in A.3 is used.

Single sequential valves shall be adjusted to be able to attain a maximum 44 °C. Starting at full cold (off) slowly adjust to 44 °C and then return to 34 °C.

Other device control systems (e.g. push-buttons, touch screens etc.) shall be tested by a method that ensures the correlation between outlet temperature and flow rate can be suitably recorded.

The procedure is subject to agreement between manufacturer and test laboratory. "

*with:*

" The measurement is made at the maximum available flow rate going from cold to hot and then from hot to cold. For the measurement a TMV as supplied, or, for valves without integral atmospheric discharge, with the outlet pipework, as defined in A.3, is used.

Single sequential valves shall be adjusted to be able to attain a maximum 44 °C. Starting at full cold (off) slowly adjust to 44 °C and then return to 34 °C.

Other device control systems (e.g. push-buttons, touch screens etc.) shall be tested by a method that ensures the correlation between outlet temperature and flow rate can be suitably recorded.

The procedure is subject to agreement between manufacturer and test laboratory. "

### 3 Modification to Subclause 13.5.1.3

Replace entire subclause: "

- a) Starting from full hot determine the reference points in the following sequence:  $(38 \pm 0,5) ^\circ\text{C}$ ,  $(36-1) ^\circ\text{C}$ ,  $(40-1) ^\circ\text{C}$ ;
- b) apply and maintain the initial settings shown in Table 8 and allow water to flow until the outlet temperature has stabilized;
- c) start recording the mixed water temperature versus time;
- d) within 1 s adjust the temperature control device to read  $\vartheta_{\text{mix}} = (36-1) ^\circ\text{C}$ ;
- e) allow the outlet temperature to stabilize;
- f) restore the settings in b);
- g) within 1 s adjust the temperature control device to read  $\vartheta_{\text{mix}} = (40-1) ^\circ\text{C}$ ;
- h) upon temperature stabilization stop recording mixed water temperature versus time. "

with: "

- a) Apply and maintain the initial inlet settings shown in Table 8 and allow to flow for a period of maximum 30 s;
- b) starting from full hot, determine the position of the temperature control for the set temperatures in the following sequence:
  - T1 :  $(38-1) ^\circ\text{C}$ ;
  - T2 :  $(36-1) ^\circ\text{C}$ , and record the corresponding mixed water temperature measured ( $\vartheta_2$ );
  - T3 :  $(40-1) ^\circ\text{C}$ , and record the corresponding mixed water temperature measured ( $\vartheta_3$ );
- c) set the temperature control into the position T1 and allow the mixed water temperature to stabilise for a period of maximum 30 s;
- d) start recording the mixed water temperature ( $\vartheta_{\text{mix}}$ ) versus time;
- e) within 1 s set the temperature control to the position T2;
- f) allow the mixed water temperature ( $\vartheta_{\text{mix}}$ ) to stabilise for a period of maximum 30 s;
- g) set the temperature control into the position T1 and allow the mixed water temperature ( $\vartheta_{\text{mix}}$ ) to stabilize for period of maximum 30 s;
- h) within 1 s set the temperature control to the position T3;
- i) allow the mixed water temperature ( $\vartheta_{\text{mix}}$ ) to stabilise for a period of maximum 30 s, stop recording the mixed water temperature versus time. "

#### 4 Modification to Subclause 13.5.1.5

Replace entire subclause:

" The mixed water temperature  $\vartheta_{\text{mix}}$  shall not differ from the set temperatures  $\vartheta_0$  for a duration ( $t_2 - t_1$ ) longer than 1 s with an amplitude of more than  $\vartheta_x = 3$  K.

$t_3 = 5$  s after disturbing the respective equilibrium the mixed water temperature shall not differ by more than 2 K from the set temperatures nor oscillate in excess of 1 Kpp.

NOTE If this is done with single sequential control valves (Type 1) the flow rate will also change i.e. not maintaining Table 8 conditions. "

with:

" Apply and maintain the initial settings shown in Table 8 and allow the mixed water temperature ( $\vartheta_{\text{mix}}$ ) to The mixed water temperature ( $\vartheta_{\text{mix}}$ ) shall not differ more than 3 K from the respective set temperatures ( $\vartheta_0, \vartheta_2$  or  $\vartheta_3$ ) for a duration ( $t_2 - t_1$  respectively  $t_7 - t_6$ ) longer than 1 s.

Maximum 5 s ( $t_3$ , respectively  $t_8$ ) after disturbing the respective equilibrium the mixed water temperature shall not differ by more than 2 K from the set temperatures ( $\vartheta_2$  or  $\vartheta_3$ ) nor oscillate in excess of 1  $\vartheta$ KPP.

NOTE See also informative graph included in Figure 1. If this is done with single sequential control valves (Type 1) the flow rate will also change i.e. not maintaining Table 8 conditions. "

Add also Figure 1: "

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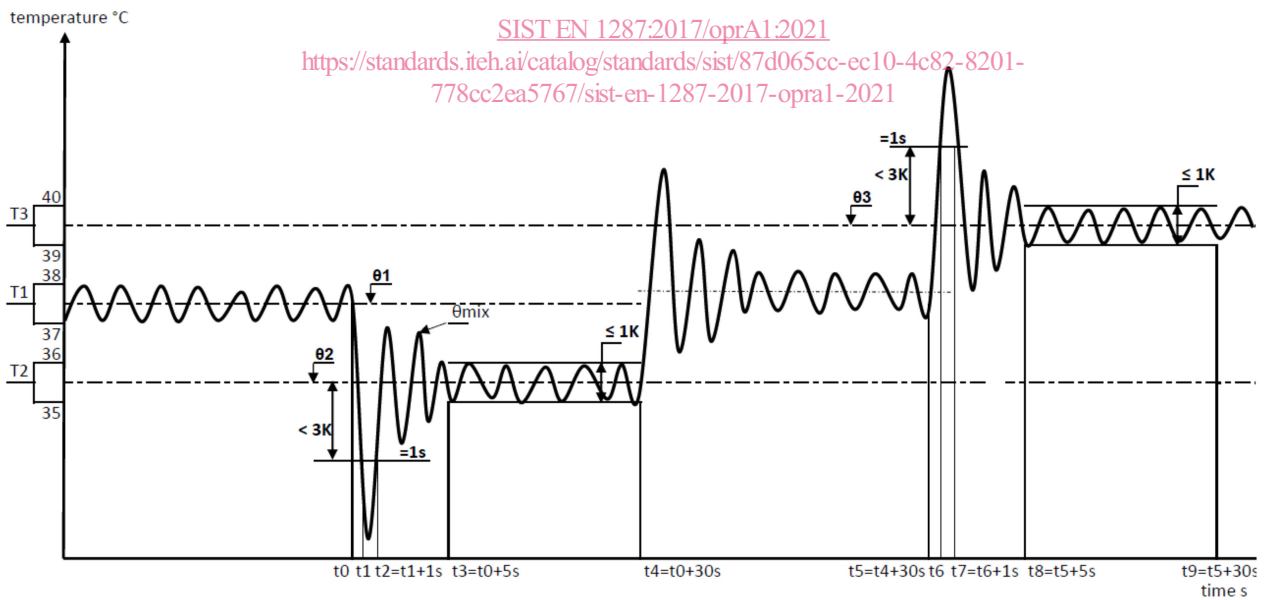


Figure 1 — Temperature control operation ".

Update the figure numbering and the related cross references throughout the document.



## 5 Modification to Subclause 13.5.2.5

Replace entire subclause: "

- a) Apply and maintain the initial settings shown in Table 8 and allow water to flow until the outlet temperature has stabilized;
- b) Start recording outlet temperature versus time.
- c) Within (5-6) s adjust the flow control of the valve under test to deliver 50 % of the flow rate according to a), in case the tested valve has no flow control the outlet pipework A.3 or A.4 shall be used instead.
- d) Upon temperature stabilization stop recording mixed water temperature versus time. "

with: "

- a) Apply and maintain the initial settings shown in Table 8; and with the water flowing flow the water to allow the mixed water temperature ( $\vartheta_{\text{mix}}$ ) to stabilise for maximum 30 s;
- b) start recording the mixed water temperature ( $\vartheta_{\text{mix}}$ ) versus time;
- c) within (5 to 6) s reduce the flow rate to deliver (45 to 55) % of the initial flow rate according to a). In cases where the tested valve has no flow control the outlet pipework A.3 or A.4 shall be used instead;
- d) allow the mixed water temperature ( $\vartheta_{\text{mix}}$ ) to stabilise for a maximum of 30 s, stop recording the mixed water temperature versus time at 60 s.

## 6 Modification to Subclause 13.5.2.5

Replace entire subclause:

" After 30 s the mixed water temperature shall not differ from the set temperature by more than 2K nor oscillate in excess of 1  $\vartheta$  pp. "

with:

" After 30 s, the mixed water temperature ( $\vartheta_{\text{mix}}$ ) shall not differ by more than 2 K from the set temperature nor oscillate in excess of 1 K ( $\vartheta_{\text{pp}}$ ).

NOTE See also informative graph included in Figure 2. "

Add also Figure 2: "

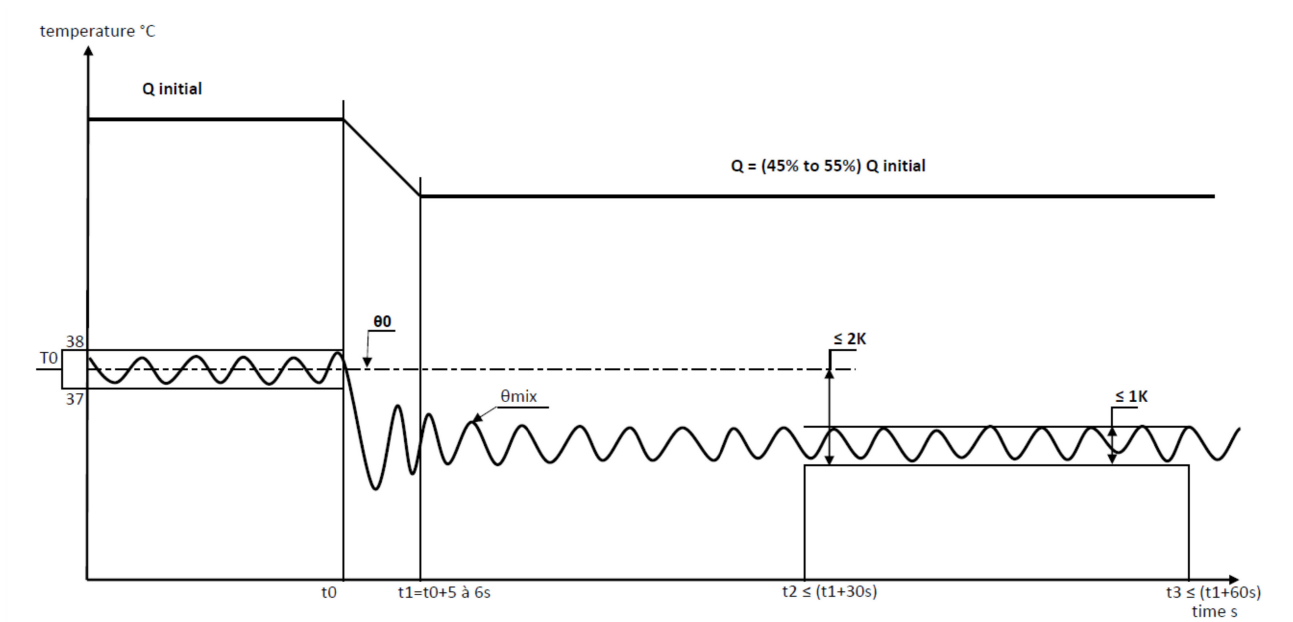


Figure 2 — Flow rate reduction ".

Update the figure numbering and the related cross references throughout the document.

## 7 Modification to Subclause 13.5.4.2

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Replace entire subclause:

- Apply and maintain the initial settings shown in Table 8 and allow water to flow until the outlet temperature has stabilized.
- Start recording outlet temperature versus time.
- Within 1 s reduce the cold supply pressure to  $(0,04 + 0,002)$  MPa  $[(0,4 + 0,02)$  bar] and maintain this condition for at least 15 s before restoring the nominal supply pressure under a).
- Allow water to flow for at least 60 s.
- Within 1s reduce the hot supply pressure to  $(0,04 + 0,002)$  MPa  $[(0,4 + 0,02)$  bar] and maintain this condition for at least 15 s before restoring the nominal supply pressure under a).
- Allow water to flow for at least 60 s.
- Stop recording outlet temperature versus time. "

with: "

- Apply and maintain the initial settings ( $\vartheta_0$ ) shown in Table 8 and allow water to flow until the outlet temperature has stabilized.
- Start recording mixed water temperature ( $\vartheta_{mix}$ ) versus time.
- Within 1 s reduce the cold supply pressure to  $(0,04 + 0,002)$  MPa  $[(0,4 + 0,02)$  bar] and maintain this condition for at least 15 s. Within 1 s restore the nominal supply pressure under a).