SLOVENSKI STANDARD
SIST EN 1287:2000

01-november-2000

Sanitarne armature - Nizkotlaļ ni termostatski meġalni ventili - Sploġne tehniļ ne zahteve

Sanitary tapware - Low pressure thermostatic mixing valves - General technical specifications

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

Robinetterie sanitaire - Mitigeurs thermostatiques basse pression - Spécifications techniques générales

Ta slovenski standard je istoveten z: **EN 1287:1999**

ICS:

91.140.70	Sanitarne naprave	Sanitary installations

SIST EN 1287:2000 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 1287

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English version

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This European Standard was approved by CEN on 1 April 1999.

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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 Central Secretariat has the same status as the official versions.

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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Contents

Foreword

This European Standard 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of an identical text or by endorsement, at the latest by October 1999, and conflicting national standards shall be withdrawn at the latest by October 1999.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland 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 :

1) This standard provides no information as to whether the product may be used without restriction in any of the Member states of the EU or EFTA ;

2) 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 requirements for "low hydraulic resistance" thermostatic mixing valves suitable for use in low pressure water supply systems as described in informative annex C.

This European Standard specifies :

- the dimensional, leaktightness, mechanical and hydraulic performance and mechanical endurance characteristics with which low pressure thermostatic mixing valves shall comply ;

- the procedures for testing these characteristics.

It is applicable :

- to low pressure thermostatic mixing valves intended for use on sanitary appliances in washrooms (toilets, bathrooms etc.) and in kitchens ;

- to low pressure thermostatic mixing valves used under the pressure and temperature conditions given in table 1.

  This standard allows for the use of low pressure thermostatic mixing valves to supply a single outlet or a small number of outlets in a "domestic" application (e.g. one valve, controlling a shower, bath, basin, bidet). But excludes valves specifically designed for supplying a large number of outlets (e.g. for institutional use).

Table 1 - Conditions for the use of low pressure thermostatic mixing valves

	Limits of use	Recommended limits for correct operation
Dynamic pressure	0,01 to 0,1 MPa (0,1 to 1 bar)	0,02 MPa ≤ P ≤ 0,1 MPa (0,2 bar ≤ P ≤ 1,0 bar)
Hot water temperature	T ≤ 90 °C	55 °C ≤ T ≤ 65 °C
Cold water temperature	T ≤ 25 °C	T ≤ 25 °C
Mechanical strength [1)]	static pressure = 1 MPa (10 bar)	
For Low Pressure thermostatic mixing valves complying with this table there are no acoustical requirements. Low Pressure thermostatic mixing valves complying with this standard may also be used with inlet supply pressures in the range from 0,1 MPa to 0,2 MPa (1,0 bar to 2,0 bar) on condition that acoustical performance is not a requirement of the installation.		
[1)] NOTE Low pressure thermostatic mixing valves are designed to provide sufficient mechanical strength for operation at 1 MPa (10 bar) static pressure.		

NOTE Thermostatic mixing valves intended for use at flow pressures in excess of those in table 1 are covered by a separate European Standard EN 1111.

2 Normative references

This European Standard incorporates by dated or undated references provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to the European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 31, Pedestal wash basins -Connecting dimensions.

EN 32, Wall hung wash basins - Connecting dimensions.

EN 35, Pedestal bidets over rim supply only - Connecting dimensions.

EN 36, Wall hung bidets over rim supply only - Connecting dimensions.

EN 111, Wall hung hand rinse basins - Connecting dimensions.

EN 200, Sanitary tapware – General technical specifications for single taps and mixer taps (Nominal size 1/2) PN 10 : Minimum flow pressure of 0,05 MPa (0,5 bar).

EN 232, Baths - Connecting dimensions.

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

EN 248, Sanitary taps - General technical specifications for electrodeposited nickel chrome coatings.

EN 695, Kitchen sinks - Connecting dimensions.

EN 1111, Sanitary tapware – Thermostatic mixing valves (PN 10) – General technical specification.

EN 1254-2, Copper and copper alloys - Plumbing fittings - Part 2 : Fittings with compression ends for use with copper tubes.

prEN 1717, Protection against pollution of potable water in drinking water installations and general requirements of devices to prevent pollution by backflow.

ISO 228-1, Pipe threads where pressure-tight joints are not made on the threads - Part 1 : Dimensions, tolerances and designation.

ISO 5167-1, Measurement of fluid flow by means of pressure differential devices - Part 1 : Orifice plates, nozzles and Venturi tubes inserted in circular cross-section conduits running full.

3 Definition

For the purpose of this standard the following definition applies :

3.1
low pressure thermostatic mixing valve
a valve, with one or more outlets, which mixes hot and cold water and automatically controls the mixed water to a user selected temperature. The flow rate between no flow and maximum flow conditions may be effected either by the same control device or a separate flow control device, where fitted.

4 Classification

This specification covers the following types of low pressure thermostatic mixing valves :

Type 1 - single control : Thermostatic mixing valves with a single control device for regulating flow rate and temperature ;

Type 2 - dual control : Thermostatic mixing valves with separate control device for regulating flow rate and temperature ;

Type 3 - single sequential control : Thermostatic mixing valves with a single control which operates through a predetermined sequence of flow and temperature. It shall have a shut-off device ;

Type 4 - thermostatic mixing valves without flow control device ;

Type 5 - other : Thermostatic mixing valves with special control devices.

5 Designation

Low pressure thermostatic mixing valves covered by this standard are designated by :

- their type (see clause 4) ;
- their nominal size (1/2 or 3/4) (see table 4) with or without diverter (see table 2) ;
- their type of body (see table 2) ;
- their type of nozzle (see table 2) ;
- the sanitary appliance on which they are to be used (see table 2) ;
- the method of mounting (see table 2) ;
- their flow rate series (see table 12) ;
- the letters L.P (Low Pressure) ;
- reference to this standard EN 1287 ;

In the case of a thermostatic bath/shower mixing valve, the flow rate shall be designated by both flow rate series. The first for the bath outlet, the second for the shower outlet.

Example Single control thermostatic mixing valve 3/4 ,with diverter, visible body single hole, fixed nozzle outlet, bath/shower, horizontal mounting, series 250, L.P EN 1287

Table 2 - Designation

Diverter	with or without diverter
Type of body	two hole, single hole, visible or concealed
Type of nozzle	fixed/moveable outlet, no nozzle outlet
Intended use	basin, bidet, sink, bath or shower
Mounting method	horizontal or vertical surfaces

6 Marking - Identification

6.1 Marking

Low pressure thermostatic mixing valves complying with this standard shall be permanently and legibly marked with :

- the mark or name of the manufacturer ;
- the letters L.P. (Low Pressure).

6.2 Identification

The temperature control device for the thermostatic mixing valve shall be identified :

- by means of a scale and/or symbols ;
- and/or by colours (cold water blue, hot water red).

Thermostatic mixing valves shall be legibly marked with the colour red on the hot water inlet and the colour blue on the cold water inlet. Those with interchangeable supplies need not be marked.

7 Materials

7.1 Chemical and Hygienic characteristics

All materials in contact with water intended for human consumption shall present no health risk up to a temperature of 90 °C. They shall not cause any deterioration in water intended for human consumption with regard to food quality, appearance, odour or taste.

Within the recommended limit given in clause 1 for correct operation, the materials shall not be subject to any deterioration which might compromise the operation of the thermostatic mixing valve. Pressurised parts shall withstand the limits of use set in table 1. Material with inadequate corrosion resistance shall be given additional protection.

7.2 Exposed surface condition and quality of coating

Visible chromium plated surfaces and Ni-Cr coatings shall comply with the requirements of EN 248.

8 Dimensional characteristics

8.1 General comment on drawings :

The design and construction of components without defined dimensions permits various design solutions to be adopted by the manufacturer.

Special cases are covered in 8.5.

8.2 Thermostatic mixing valves mounted on horizontal surfaces

The standardised dimensions of thermostatic mixing valves :

- firstly, guarantee their mounting and interchangeability on sanitary appliances complying with EN 31, EN 32, EN 35, EN 36, EN 111, EN 232 and EN 695 ;
- secondly, give the various options for connection with the water supply.

8.2.1 Single hole thermostatic mixing valve - visible body (see table 3)

8.2.1.1 without spray attachment (see figure 1a))

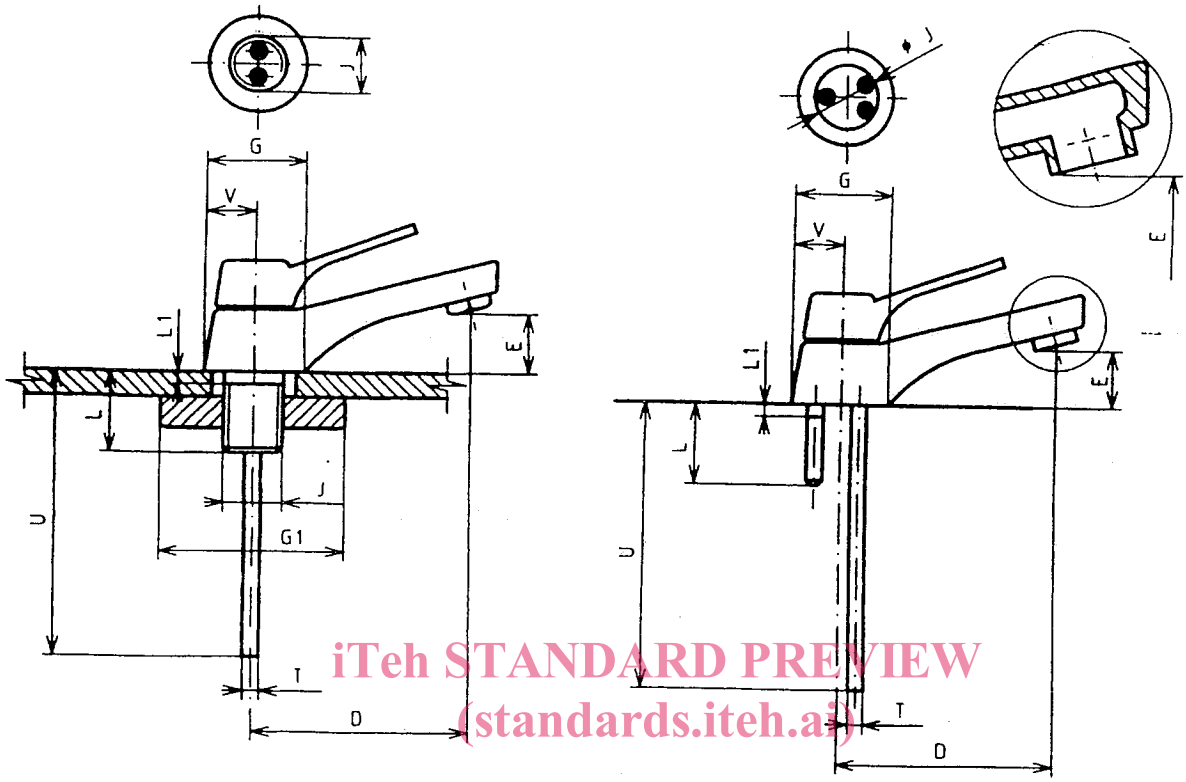


Figure 1a) - Single-hole thermostatic mixing valve without spray attachment

8.2.1.2 with spray attachment (see figures 1b) and 1c))

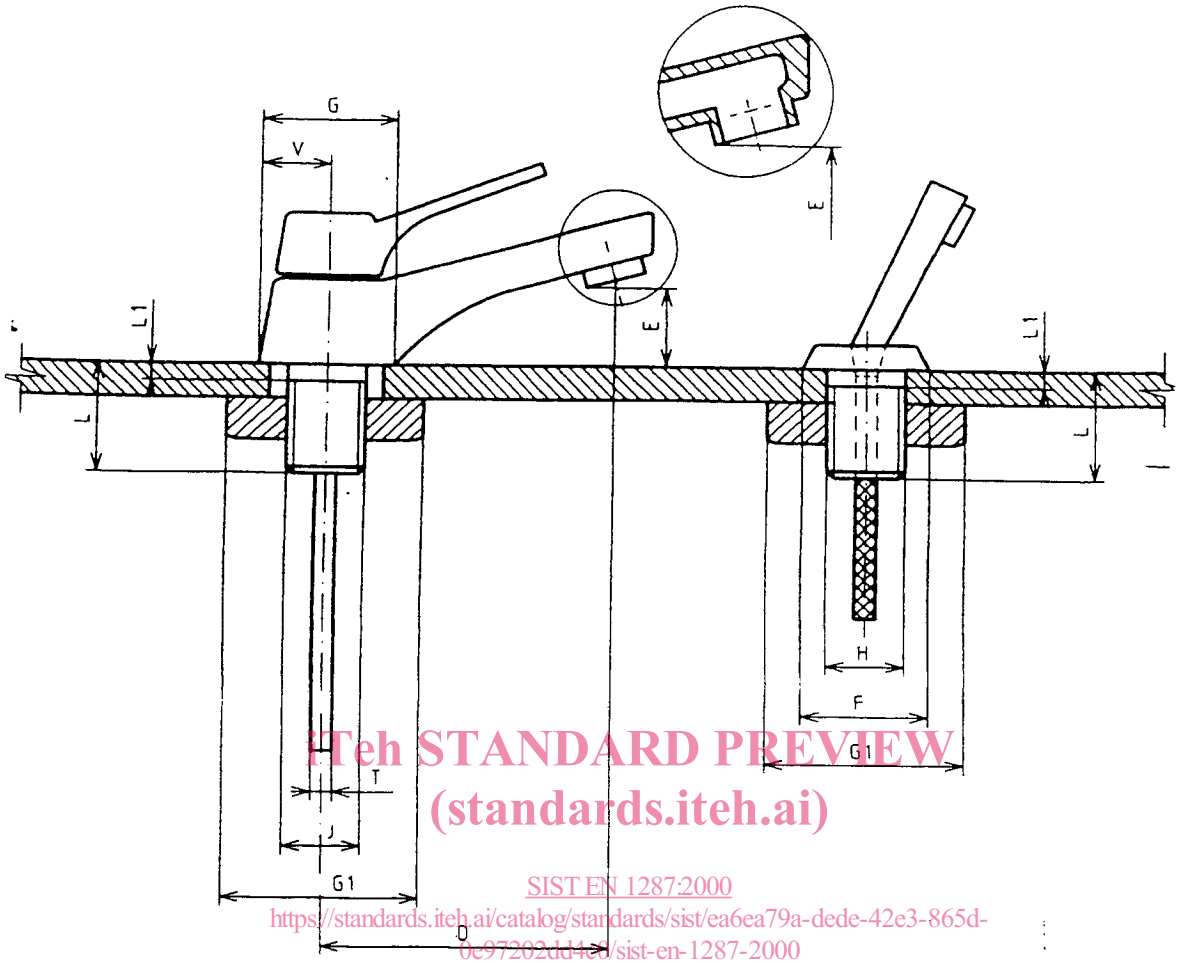


Figure 1b) - Single hole thermostatic mixing valve with remote spray attachment

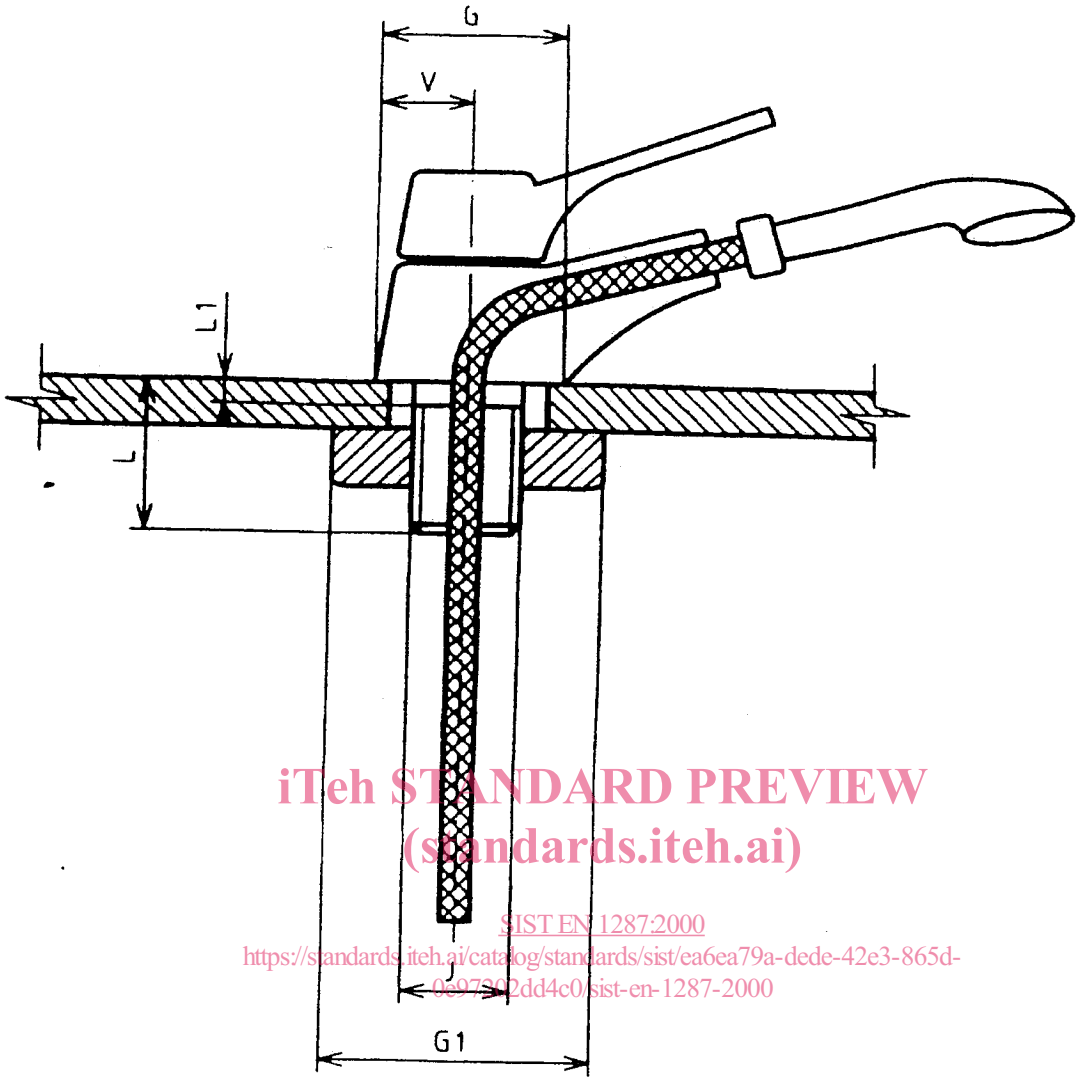
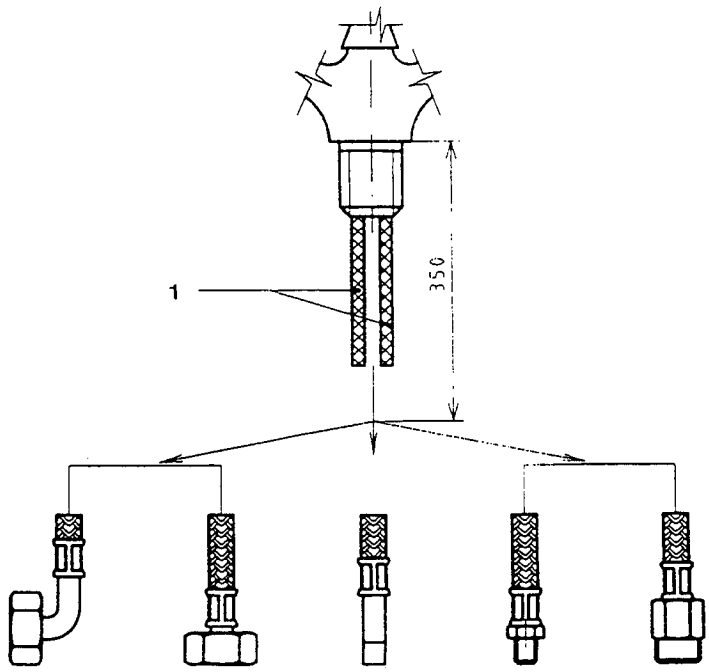


Figure 1c) - Single hole thermostatic mixing valve with integral spray attachment

8.2.1.3 Flexible hoses for water supply

Dimensions in millimetres



Key

1 Flexible hoses

Figure 2 - Flexible hoses for water supply

Flexible hoses for water supply may be used with the thermostatic mixing valves shown in figures 1a), 1b), 1c), 5 and 6.

NOTE 1 The inlet connections shown are typical examples only. Other methods of connection to the supply are permissible.

NOTE 2 Flexible hoses should comply with the requirement of draft standard "Flexible hoses for water supply" (WI 00164121).