SLOVENSKI STANDARD
SIST EN ISO 3822-2:1999

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Akustika - Laboratorijski preskusi emisije hrupa armatur in naprav pri inštalacijah za oskrbo z vodo - 2. del: Pogoji za priključitev in delovanje izpustnih armatur in mešalnih ventilov (ISO 3822-2:1995)

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 3822-2:1995)

Prüfung des Geräuschverhaltens von Armaturen und Geräten der Wasserinstallation im Laboratorium - Teil 2: Anschluß- und Betriebsbedingungen für Auslaufarmaturen und für Mischbatterien (ISO 3822-2:1995)

Acoustique - Mesurage en laboratoire du bruit émis par les robinetteries et les équipements hydrauliques utilisés dans les installations de distribution d'eau - Partie 2: Conditions de montage et de fonctionnement des robinets de puisage et des robinetteries (ISO 3822-2:1995)

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91.140.60	Sistemi za oskrbo z vodo	Water supply systems

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EUROPEAN STANDARD

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English version

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Foreword

The text of the International Standard ISO 3822-2:1995 has been prepared by Technical Committee CEN/TC 126 "Acoustic properties of building components and of buildings" in collaboration with ISO/TC 43 "Acoustics". It has been approved by CEN on 1994-11-28 as a European Standard.

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of an identical text or by endorsement, at the latest by September 1995, and conflicting national standards shall be withdrawn at the latest by September 1995.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

Endorsement notice

The text of the International Standard ISO 3822-2:1995 was approved by CEN as a European Standard without any modification.

0 Introduction

The method of measurement for laboratory tests on noise emission from appliances and equipment used in water supply installations is specified in EN 23822-1.

This part of EN 23822 gives detailed descriptions for mounting and operating draw-off taps and mixing valves in such laboratory tests. These taps and mixing valves are for use with cold and/or hot water in buildings (for sinks, wash-basins, baths, etc.) or next to buildings (for example for garden use). Draw-off taps and mixing valves are the most common kind of appliance used in water supply installations.

1 Scope

This part of EN 23822 specifies the mounting and operating conditions to be used for draw-off taps and mixing valves when measuring noise emission resulting from water flow.

The procedures described are for general use for all types of draw-off taps and mixing valves of conventional design with a recommended flow pressure range of 0,1 to 0,5 MPa [1)]

The mounting and operating conditions apply to draw-off tap and mixing valve assemblies including any inlet or outlet mounting or installation unions, elbows, adaptors etc., but excluding interchangeable outlet accessories such as aerators, shower hoses, shower heads, flow staighteners etc.. These outlet accessories are replaced by standardised Low-noise Flow Resistances.

When the outlet accessories mentioned above are neither interchangeable nor removable then the tests are carried out with them in place. Interchangeable outlet accessories are tested separately according to procedures specified in other parts of this European Standard.

Thermostatic mixing valves, intended for use with more than one independent draw-off tap, and bidet valves with a direct outlet into an interior part of the body of the bidet are not regarded as conventional draw-off taps or mixing valves and are not covered by this part of EN 23822. Similarly, electrically operated valves are regarded as combined devices (solenoid valve and outlet) and are not covered by this part of EN 23822.

The test procedures cover a range of flow pressures between 0,1 MPa and 0,5 MPa.

2 Normative references

This European Standard incorporates by dated or undated reference, 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 this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

[1)] 1 MPa = 10 bar.

ISO 7-1	Pipe threads where pressure-tight joints are made on the threads - Part 1 : Designation,dimensions and tolerances
ISO 49	Malleable cast iron fittings threaded to ISO 7-1
EN 23822-1	Acoustics - Laboratory tests on noise emission from appliances and equipment used in water supply installations - Part 1 : Method of measurement
EN 23822-4	Acoustics - Laboratory tests on noise emission from appliances and equipment used in water supply installations - Part 4 : Mounting and operating conditions for special appliances

3 Mounting

3.1 General

Draw-off taps and mixing valves shall be connected to the test pipe and positioned according to the normal position of the tap or mixing valve in use.

3.2 Fitting to the test pipe

The test pipe shall have an external thread R1 in accordance with ISO 7-1, and shall end with a galvanized union, taper seat 1, U11 in accordance with ISO 49.

3.3 Mounting of draw-off taps and mixing valves with screwed connections

Depending on whether the position of the connection is horizontal or vertical, draw-off taps and mixing valves with screwed connections shall be connected to the test pipe by means of a galvanized long sweep bend 1, G1 or G4, and/or a galvanized bushing N4, pattern 1 or 11, in accordance with ISO 49. A galvanized socket, reducing M2, in accordance with ISO 49, may be connected to the union or to the bend.

3.4 Mounting of draw-off taps and mixing valves fitted with pipe connections

Draw-off taps and mixing valves without screwed connections shall be mounted with couplings chosen such that rigid and watertight connections are assured. These couplings may be made either by soldering a nipple on to the pipe and using a cap nut or by means of a compression fitting. The coupling shall be made so that no air is trapped therein.

3.5 Mounting of mixing valves with two inlets

Mixing valves with two inlets shall be connected to the test pipe by means of a twin outlet (see EN 23822-1) as specified in 3.3 and 3.4.

4 Test procedure

4.1 General test conditions

4.1.1 General

Draw-off taps and mixing valves shall be tested by the method specified in EN 23822-1.

4.1.2 Water temperature

Appliances, such as mixing valves, which are normally operated with both hot and cold water shall be tested with water at a temperature not exceeding 25 °C at both inlets.

4.1.3 Outlets

Appliances with more than one outlet (for example bath and shower appliances) shall be tested separately for each outlet. Appliances with provision for connecting interchangeable outlet accessories such as aerators, shower hoses, shower heads, flow straighteners etc., shall be tested with a Low-noise Flow Resistance fitted in place of the accessory. This Low-noise Flow Resistance shall comply with Annex A of EN 23822-4 and shall be connected by means of an adaptor, if necessary. This adaptor shall comply with Annex B of EN 23822-4.

4.1.4 Discharge

The water discharged from the appliance shall be disposed of quietly (see EN 23822-1). The arrangement for disposing of the discharged water shall in no way influence the flow through the appliance.

4.1.5 Flow adjusters

NOTE : In some types of draw-off taps and mixing valves, especially mixing taps with sequential control, devices known as flow adjusters may be incorporated in the appliance. These devices serve to adjust the pressure loss in the tap to adapt the appliance to its proper use.

When a flow adjuster is incorporated in an appliance to be tested, the manufacturer of the appliance shall provide information on the settings of the flow adjuster for operation at flow pressures of 0,3 MPa and 0,5 MPa.

At the setting advised for 0,3 MPa the procedures specified in 4.2, 4.3 or 4.4 shall be carried out at flow pressures of 0,3 MPa and 0,5 MPa. At the setting advised for 0,5 MPa the same procedures shall be carried out at flow pressures of 0,1 MPa, 0,2 MPa, 0,3 MPa, 0,4 MPa and 0,5 MPa.

4.1.6 Test pressures

Except where flow adjusters are incorporated in the appliance as mentioned in 4.1.5, the procedures specified in 4.2, 4.3 or 4.4 shall be carried out at flow pressures of 0,3 MPa and 0,5 MPa.

4.2 Procedure for conventional draw-off taps with one inlet

4.2.1 Open the appliance fully. Adjust the water flow pressure to the selected value and keep it constant throughout the following steps.

4.2.2 Measure the water flow rate.

4.2.3 Determine the sound pressure level in the test room.

4.2.4 Slowly close the appliance to the fully closed position. Determine the maximum sound pressure level in the test room during this closing action and measure the water flow rate at which this maximum occurs.

4.3 Procedure for mixing valves with two inlets

4.3.1 Procedure for mixing valves with similar independent controls for hot and cold water

4.3.1.1 Carry out the procedure specified in 4.2 for each control separately.

4.3.1.2 Open both controls fully and then slowly close the hot control to locate a maximum sound pressure level. At this point, slowly close the cold control and locate a possible further maximum sound pressure level. Determine the greater of the two maximum sound pressure levels and measure the water flow rate at which this maximum occurs. Repeat the procedure, slowly closing the cold control first.

4.3.2 Procedure for mixing valves with a dual function control for flow and temperature, including thermostatic types

NOTE : These mixing valves have control functions for the flow rate and for the temperature (ratio of hot and cold water), but both functions are combined in a single control device such as a lever.

4.3.2.1 With the temperature setting in the extreme cold position carry out the procedure specified in 4.2.

4.3.2.2 With the temperature setting in the extreme hot position carry out the procedure specified in 4.2.

4.3.2.3 Vary the temperature control over its full range with the flow setting at maximum, determine the maximum sound pressure level and measure the water flow rate at which this maximum occurs.

4.3.2.4 If the maximum sound pressure level is higher than those measured in 4.3.2.1 or 4.3.2.2, proceed as specified in 4.2.4 at the intermediate temperature setting at which the maximum sound pressure level occurs.

4.3.3 Procedure for mixing valves with independent controls for flow and temperature, including thermostatic types

Mixing valves with independent controls for flow and temperature shall be tested as for valves with a dual function control (see 4.3.2).

4.3.4 Procedure for mixing valves with a single sequential control, including thermostatic types

NOTE : Mixing valves with a single sequential control are mixing valves in which a single control first opens the valve and then provides a progressively warmer flow. In some cases, the flow rate depends on the temperature setting.

4.3.4.1 Keeping the flow pressure constant, operate the control of the valve over the whole range from the extreme hot position to closed.

4.3.4.2 Determine the maximum sound pressure level and measure the water flow rate when this maximum occurs.

4.4 Procedure for special draw-off taps and mixing valves operated by remote or indirect controls

4.4.1 Operating conditions

Valves with automatic or indirect controls (for example those actuated by push button, proximity switch, etc.) shall be operated in accordance with the manufacturer's instructions.

4.4.2 Procedure

Operate the valve and measure the sound pressure level and the steady water flow rate. Ensure that the flow pressure stays constant and determine the maximum sound pressure level during closure. Valves having two inlets shall be tested using each inlet both separately and together.