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**Acoustics — Laboratory tests on noise  
emission from appliances and equipment  
used in water supply installations —**

**Part 1:  
Method of measurement**

*Acoustique — Mesurage en laboratoire du bruit émis par les robinetteries  
et les équipements hydrauliques utilisés dans les installations de  
distribution d'eau —*

*Partie 1: Méthode de mesurage*



## Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this part of ISO 3822 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 3822-1 was prepared by the European Committee for Standardization (CEN) in collaboration with ISO Technical Committee TC 43, *Acoustics*, Subcommittee SC 2, *Building acoustics*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Throughout the text of this standard, read "...this European Standard..." to mean "...this International Standard...".

This third edition cancels and replaces the second edition (ISO 3822-1:1983), which has been technically revised.

ISO 3822 consists of the following parts, under the general title *Acoustics — Laboratory tests on noise emission from appliances and equipment used in water supply installations*:

- *Part 1: Method of measurement*
- *Part 2: Mounting and operating conditions for draw-off taps and mixing valves*
- *Part 3: Mounting and operating conditions for in-line valves and appliances*
- *Part 4: Mounting and operating conditions for special appliances*

Annex C forms a normative part of this part of ISO 3822. Annexes A and B are for information only.

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Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 734 10 79  
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## Foreword

The text of EN ISO 3822-1:1999 has been prepared by Technical Committee CEN/TC 126 "Acoustic properties of building products and of buildings", the secretariat of which is held by AFNOR, in collaboration with Technical Committee ISO/TC 43 "Acoustics".

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 November 1999, and conflicting national standards shall be withdrawn at the latest by November 1999.

The content of this part of EN 3822 is not identical with the International Standard ISO 3822-1:1983 "Acoustics - Laboratory tests on noise emission from appliances and equipment used in water supply installations - Part 1 : Method of measurement".

Working group CEN/TC 126/WG 3 was instructed, in May 88, to examine and take into account the comments on ISO 3822-1, following the primary questionnaire.

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

## Introduction

Noise caused by water supply installations may lead to annoyance in adjacent rooms, for example in dwellings, hospitals and hotels, especially at night. This noise has its origin mainly in appliances. Standardised measurements of such noise are needed to permit comparison of the noise of commercial products made in different countries.

This part of EN ISO 3822 describes a method of measurement allowing comparable results to be obtained in laboratory measurements.

It is not possible to describe in detail how a given tap would give the same result in different laboratories. Therefore, the principle of comparing results to an installation noise standard is utilised. This procedure can be regarded as a kind of calibration of the test arrangement. The installation noise standard is described in detail and the basic arrangements for a laboratory water supply installation are given in this part of EN ISO 3822.

The test conditions described herein constitute the standard reference conditions essential for comparisons between laboratories.

Descriptions of the mounting and operating conditions for testing different types of appliances are given in other parts of this European Standard : see EN ISO 3822-2 for draw-off taps and mixing valves, EN ISO 3822-3 for in-line valves and EN ISO 3822-4 for special appliances.

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## 1 Scope

This part of EN ISO 3822 specifies a method of measurement, in the laboratory, of the noise emission resulting from the flow of water through appliances and equipment used in water supply installations.

The items covered include draw-off taps, in-line valves and special appliances, for example pressure reducers and water-heating appliances, all of which are hereafter referred to as "appliances".

The method specified makes it possible to obtain comparable results of measurements in different laboratories.

## 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.

ISO 7-1, *Pipe threads where pressure-tight joints are made on the threads - Part 1 : Dimensions, tolerances and designation*.

ISO 49, *Malleable cast iron fittings threaded to ISO 7-1*.

ISO 65, *Carbon steel tubes suitable for screwing in accordance with ISO 7-1*.

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: 1995)*.

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 (ISO 3822-3:1997)*.

EN ISO 3822-4, *Acoustics - Laboratory tests on noise emission from appliances and equipment used in water supply installations - Part 4 : Mounting and operating conditions for special appliances*.

EN 60651, *Sound level meters*.

EN 61260, *Electroacoustics - Octave band and fractional-octave-band filters*.

## 3 Definitions

For the purposes of this standard the following definitions apply :

### 3.1

#### **octave band sound pressure level, in decibels**

the unweighted sound pressure level in the frequency band of one octave. In this part of EN ISO 3822 octave band sound pressure levels and sound pressure level differences are denoted by the subscript n.

### 3.2

#### **a-weighted sound pressure level, in decibels**

the sound pressure level weighted with the A-weighting specified in EN 60651