INTERNATIONAL STANDARD

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AMENDMENT 1
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Acoustics — Laboratory tests on noise emission from appliances and equipment used in water supply installations —

Part 1: Method of measurement

AMENDMENT 1 Measurement uncertainty

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

AMENDEMENT 1: Incertitude de mesure

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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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 document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

Amendment 1 to ISO 3822-1:1999 was prepared by Technical Committee ISO/TC 43, *Acoustics*, Subcommittee SC 2, *Building acoustics*.

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

Part 1:
Method of measurement

AMENDMENT 1: Measurement uncertainty

Add Annex D (overleaf).

Annex D
(informative)

Measurement uncertainty

D.1 General

The measurement uncertainties associated with appliance sound pressure levels determined in accordance with this International Standard normally should be evaluated in accordance with ISO/IEC Guide 98-3[1)]. Due to the statistical nature of the sound pressure measurement, the type B approach defined in ISO/IEC Guide 98-3 should be used.

Unless more specific knowledge is available, the standard deviation of reproducibility derived from round robin tests is used as the best available estimate for the uncertainty.

The expanded measurement uncertainty of determinations of appliance sound pressure levels made in accordance with this International Standard, for a coverage probability of 95 % (coverage factor $k = 2$) as defined in ISO/IEC Guide 98-3, should be taken to be $2s_R$, where s_R is the standard deviation of reproducibility, unless more specific knowledge is available, e.g. in the laboratory undertaking the measurements.

D.2 Standard deviation of reproducibility of octave band sound pressure levels

During the “2nd Round Robin Test Acoustics”, values of the standard deviation of reproducibility, s_R, were determined according to ISO 140-2[2)]. Values of s_R for the appliance sound pressure level L_{apn} are given in Table D.1.

Table D.1 — Standard deviation of reproducibility, s_R, determined according to ISO 140-2 for appliance sound pressure level L_{apn}

Octave band mid-frequency Hz	Standard deviation of reproducibility, s_R dB
125	1,5
250	1,0
500	1,0
1 000	1,0
2 000	1,0
4 000	1,0

1) ISO/IEC Guide 98-3, *Uncertainty of measurement — Part 3: Guide to the expression of uncertainty in measurement* (*GUM*:1995)

2) ISO 140-2, *Acoustics — Measurement of sound insulation in buildings and of building elements — Part 2: Determination, verification and application of precision data*

D.3 Standard deviation for the determination of L_{ap}

Following the specifications given in this annex, the standard deviation of repeatability, s_r, of the appliance sound pressure level L_{ap} is 0,5 dB. The standard deviation of reproducibility is 1,5 dB for a usual water supply appliance. The standard deviation of reproducibility can increase for appliances which produce very low sound pressure levels. The values given above have been determined by the “2nd Round Robin Test Acoustics”.

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