Irish Standard
I.S. EN ISO 12999-1:2014

Acoustics - Determination and application of measurement uncertainties in building acoustics - Part 1: Sound insulation (ISO 12999-1:2014)

I.S. EN ISO 12999-1:2014

Incorporating amendments/corrigenda/National Annexes issued since publication:

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This document is based on:	*Published:*
EN ISO 12999-1:2014	2014-05-21

This document was published under the authority of the NSAI and comes into effect on:	ICS number:
2014-06-07	17.140.01 91.120.20
	NOTE: If blank see CEN/CENELEC cover page

NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W NSAI.ie

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

Correction Notice

Reference: EN ISO 12999-1:2014

Title: Acoustics - Determination and application of measurement uncertainties in building acoustics - Part 1: Sound insulation (ISO 12999-1:2014)

Work Item: 00126104

Brussels, 2014-07-16

please include the following minor editorial correction(s) in the document related to:

the following language version(s) :
- ☒ English
- ☒ French
- ☐ German

for the following procedure :
- ☐ PQ/UQ
- ☐ Enquiry
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- ☐ Formal Vote
- ☐ 2nd Formal Vote
- ☐ Parallel Formal Vote
- ☐ 2nd Parallel Formal Vote
- ☐ UAP
- ☐ TC Approval
- ☐ 2nd TC Approval
- ☐ Publication
- ☒ Parallel Publication

It has been brought to our attention that this document, issued on 2014-05-21, requires modification.

The superseding note has been added to the title pages.

Forewords have been updated accordingly.

Please find enclosed the updated English and French versions.

We apologise for any inconvenience this may cause.

Avenue Marnix, 17 • B-1000 Bruxelles
Tel : +32 2 550 08 11 • Fax : +32 2 550 08 19

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 12999-1

May 2014

ICS 17.140.01; 91.120.20

Supersedes EN 20140-2:1993

English Version

Acoustics - Determination and application of measurement uncertainties in building acoustics - Part 1: Sound insulation (ISO 12999-1:2014)

Acoustique - Détermination et application des incertitudes de mesure dans l'acoustique des bâtiments - Partie 1: Isolation acoustique (ISO 12999-1:2014)

Akustik - Bestimmung und Anwendung der Messunsicherheiten in der Bauakustik - Teil 1: Schalldämmung (ISO 12999-1:2014)

This European Standard was approved by CEN on 17 April 2014.

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CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN ISO 12999-1:2014) has been prepared by Technical Committee ISO/TC 43 "Acoustics" in collaboration with Technical Committee CEN/TC 126 “Acoustic properties of building elements and of buildings” 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 November 2014, and conflicting national standards shall be withdrawn at the latest by November 2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 20140-2:1993.

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Endorsement notice

The text of ISO 12999-1:2014 has been approved by CEN as EN ISO 12999-1:2014 without any modification.

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INTERNATIONAL STANDARD

ISO 12999-1

First edition
2014-05-15

Acoustics — Determination and application of measurement uncertainties in building acoustics —

Part 1: Sound insulation

Acoustique — Détermination et application des incertitudes de mesure dans l'acoustique des bâtiments —

Partie 1: Isolation acoustique

Reference number
ISO 12999-1:2014(E)

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 43, *Acoustics*, Subcommittee SC 2, *Building acoustics*.

This first edition of ISO 12999-1 cancels and replaces ISO 140-2:1991, which has been technically revised. It also incorporates the Technical Corrigendum ISO 140-2:1991/Cor 1:1993.

ISO 12999 consists of the following parts, under the general title *Acoustics — Determination and application of measurement uncertainties in building acoustics*:

— *Part 1: Sound insulation*

A part 2 dealing with sound absorption is under preparation.

Introduction

An assessment of uncertainties that is comprehensible and close to reality is indispensable for many questions in building acoustics. Whether a requirement is met, a laboratory delivers correct results or the acoustic properties of a product are better than the same properties of some other product can be decided only by adequately assessing the uncertainties associated with the quantities under consideration.

Uncertainties should preferably be determined following the principles of ISO/IEC Guide 98-3. This Guide specifies a detailed procedure for the uncertainty evaluation that is based upon a complete mathematical model of the measurement procedure. At the current knowledge, it seems to be impossible to formulate these models for the different quantities in building acoustics. Therefore, only the principles of such an uncertainty assessment are explained.

To come to uncertainties all the same, the concept of reproducibility and repeatability is incorporated which is the traditional way of uncertainty determination in building acoustics. This concept offers the possibility to state the uncertainty of a method and of measurements carried out according to the method, based on the results of inter-laboratory measurements.

Acoustics — Determination and application of measurement uncertainties in building acoustics —

Part 1: Sound insulation

1 Scope

This part of ISO 12999 specifies procedures for assessing the measurement uncertainty of sound insulation in building acoustics. It provides for

— a detailed uncertainty assessment;

— a determination of uncertainties by inter-laboratory tests;

— an application of uncertainties.

Furthermore, typical uncertainties are given for quantities determined according to ISO 10140, ISO 140-4, ISO 140-5, ISO 140-7 and ISO 717 (all parts).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 140-4, *Acoustics — Measurement of sound insulation in buildings and of building elements — Part 4: Field measurements of airborne sound insulation between rooms*

ISO 140-5, *Acoustics — Measurement of sound insulation in buildings and of building elements — Part 5: Field measurements of airborne sound insulation of façade elements and façades*

ISO 140-7, *Acoustics — Measurement of sound insulation in buildings and of building elements — Part 7: Field measurements of impact sound insulation of floors*

ISO 717 (all parts), *Acoustics — Rating of sound insulation in buildings and of building elements*

ISO 5725-1:1994, *Accuracy (trueness and precision) of measurement methods and results — Part 1: General principles and definitions*

ISO 5725-2:1994, *Accuracy (trueness and precision) of measurement methods and results — Part 2: Basic method for the determination of repeatability and reproducibility of a standard measurement method*

ISO 10140 (all parts), *Acoustics — Laboratory measurement of sound insulation of building elements*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

NOTE Whenever applicable, they are equivalent to those given in ISO 5725-1, in the ISO/IEC Guide 98-3[1] and in ISO/IEC Guide 99.[2]