ICS 17.140.01, 91.120.20 SLOVENSKÁ TECHNICKÁ NORMA Február 2021

STN	**Stanovenie a aplikácia neistoty merania v stavebnej akustike Časť 1: Zvuková izolácia (ISO 12999-1: 2020)**	**STN EN ISO 12999-1** 73 0503

Acoustics - Determination and application of measurement uncertainties in building acoustics - Part 1: Sound insulation (ISO 12999-1:2020)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 01/21

Obsahuje: EN ISO 12999-1:2020, ISO 12999-1:2020

Oznámením tejto normy sa ruší
STN EN ISO 12999-1 (73 0503) z novembra 2014

132287

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 12999-1

November 2020

ICS 17.140.01; 91.120.20 Supersedes EN ISO 12999-1:2014

English Version

Acoustics - Determination and application of measurement uncertainties in building acoustics - Part 1: Sound insulation (ISO 12999-1:2020)

Acoustique - Détermination et application des incertitudes de mesure dans l'acoustique des bâtiments - Partie 1: Isolation acoustique (ISO 12999-1:2020)

Akustik - Bestimmung und Anwendung der Messunsicherheiten in der Bauakustik - Teil 1: Schalldämmung (ISO 12999-1:2020)

This European Standard was approved by CEN on 21 October 2020.

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

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Ref. No. EN ISO 12999-1:2020 E

Contents

Page

European foreword

This document (EN ISO 12999-1:2020) 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of an identical text or by endorsement, at the latest by May 2021, and conflicting national standards shall be withdrawn at the latest by May 2021.

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

This document supersedes EN ISO 12999-1:2014.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 12999-1:2020 has been approved by CEN as EN ISO 12999-1:2020 without any modification.

INTERNATIONAL STANDARD

ISO 12999-1

Second edition
2020-04

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 12999-1:2020(E)

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Published in Switzerland

Contents

Page

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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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 43, *Acoustics*, Subcommittee SC 2, *Building acoustics* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 126, *Acoustic properties of building elements and of buildings*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 12999-1:2014), which has been technically revised.

The main changes compared to the previous edition are as follows:

— the quantity σ_{R95} was removed from Table 2;

— the text in Clause 7 referring to this quantity was removed and the wording adapted;

— a new Annex D was drafted with a new table containing σ_{R95} and text explaining what it is;

— new references were added.

A list of all parts in the ISO 12999 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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 approach for 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.

NOTE Whenever applicable, the terms and definitions used in this document are equivalent to those given in ISO 5725-1[2], in ISO/IEC Guide 98-3[7] and in ISO/IEC Guide 99[8].

INTERNATIONAL STANDARD **ISO 12999-1:2020(E)**

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

Part 1: Sound insulation

1 Scope

This document 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 (all parts), ISO 16283 (all parts) and ISO 717 (all parts).

2 Normative references

There are no normative references in this document.