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OSA 3: ÕHUHELI ISOLATSIOON VÄLISMÜRA VASTU

Building acoustics - Estimation of acoustic performance
of buildings from the performance of elements - Part 3:
Airborne sound insulation against outdoor sound (ISO
12354-3:2017)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 12354-3:2017 sisaldab Euroopa standardi EN ISO 12354-3:2017 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 12354-3:2017 consists of the English text of the European standard EN ISO 12354-3:2017.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
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English Version

**Building acoustics - Estimation of acoustic performance of
buildings from the performance of elements - Part 3:
Airborne sound insulation against outdoor sound (ISO
12354-3:2017)**

Acoustique du bâtiment - Calcul de la performance
acoustique des bâtiments à partir de la performance
des éléments - Partie 3: Isolement aux bruits aériens
venus de l'extérieur (ISO 12354-3:2017)

Bauakustik - Berechnung der akustischen
Eigenschaften von Gebäuden aus den
Bauteileigenschaften - Teil 3: Luftschalldämmung von
Außenbauteilen gegen Außenlärm (ISO 12354-3:2017)

This European Standard was approved by CEN on 22 April 2017.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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

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

European foreword

This document (EN ISO 12354-3:2017) 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 February 2018, and conflicting national standards shall be withdrawn at the latest by February 2018.

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 12354-3:2000.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 12354-3:2017 has been approved by CEN as EN ISO 12354-3:2017 without any modification.

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
3.1 Quantities to express building performance	1
3.2 Quantities to express element performance	3
3.3 Other terms and quantities	4
4 Calculation models	5
4.1 General principles	5
4.2 Determination of direct transmission from acoustic data on elements	7
4.2.1 General	7
4.2.2 Small technical elements	7
4.2.3 Other elements	7
4.3 Determination of flanking transmission	8
4.4 Limitations	8
5 Accuracy	8
Annex A (normative) List of symbols	10
Annex B (informative) Determination of transmission by elements from composing parts	12
Annex C (informative) Influence of façade shape	15
Annex D (informative) Sound reduction index of elements	20
Annex E (informative) Estimation of indoor sound levels	23
Annex F (informative) Guidelines for practical use	25
Annex G (informative) Calculation examples	26
Bibliography	29

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 on 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 the following URL: www.iso.org/iso/foreword.html.

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

This first edition cancels and replaces ISO 15712-3:2005, which has been technically revised.

A list of all the parts in the ISO 12354 series can be found on the ISO website.

Introduction

This document is part of a series specifying calculation models in building acoustics.

Although this document covers the main types of building construction it cannot as yet cover all variations in the construction of buildings. It sets out an approach for gaining experience for future improvements and developments.

The accuracy of this standard can only be specified in detail after widespread comparisons with field data, which can only be gathered over a period of time after establishing the prediction model. To help the user in the meantime, indications of the accuracy have been given, based on earlier comparisons with comparable prediction models. It is the responsibility of the user (i.e. a person, an organization, the authorities) to address the consequences of the accuracy, inherent for all measurement and prediction methods, by specifying requirements for the input data and/or applying a safety margin to the results or applying some other correction.

It is intended for acoustical experts and provides the framework for the development of application documents and tools for other users in the field of building construction, taking into account local circumstances.

The model is based on experience with predictions for dwelling; it can also be used for other types of buildings provided the dimensions of constructions are not too different from those in dwellings.

Building acoustics — Estimation of acoustic performance of buildings from the performance of elements —

Part 3: Airborne sound insulation against outdoor sound

1 Scope

This document specifies a calculation model to estimate the sound insulation or the sound pressure level difference of a façade or other external surface of a building. The calculation is based on the sound reduction index of the different elements from which the façade is constructed and it includes direct and flanking transmission. The calculation gives results which correspond approximately to the results from field measurements in accordance with ISO 16283-3. Calculations can be carried out for frequency bands or for single number ratings.

The calculation results can also be used for calculating the indoor sound pressure level due to for instance road traffic (see [Annex E](#)).

This document describes the principles of the calculation model, lists the relevant quantities and defines its applications and restrictions.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 717-1, *Acoustics — Rating of sound insulation in buildings and of building elements — Part 1: Airborne sound insulation*

ISO 10140-1:2016, *Acoustics — Laboratory measurement of sound insulation of building elements — Part 1: Application rules for specific products*

ISO 12354-1:2017, *Building acoustics — Estimation of acoustic performance of buildings from the performance of elements — Part: Airborne sound insulation between rooms (in revision)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions, and the symbols and units listed in [Annex A](#), apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1 Quantities to express building performance

NOTE The sound insulation of façades in accordance with ISO 16283-3 can be expressed in several quantities. These quantities are determined in frequency bands (one-third-octave bands or octave bands) from which the single number rating for the building performance can be obtained in accordance with ISO 717-1, for instance R'_{w} , $D_{ls,2m,nT,w}$ or $(R'_{w} + C_{tr})$.