Ehitusakustika. Hoonete akustilise toimivuse hindamine elementide akustilise toime põhjal. 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

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 12354-3:2005 sisaldab Euroopa standardi EN 12354-3:2000 ingliskeelset teksti.	This Estonian standard EVS-EN 12354-3:2005 consists of the English text of the European standard EN 12354-3:2000.
Standard on kinnitatud Eesti Standardikeskuse 12.09.2000 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 12.09.2000 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 22.03.2000.	Date of Availability of the European standard text 22.03.2000.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

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Võtmesõnad: akustika, ehitus, heliisolatsioon, hooned

EUROPEAN STANDARD
NORME EUROPÉENNE
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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

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

Bauakustik – Berechnung der akustischen Eigenschaften von Gebäuden aus den Bauteileigenschaften – Teil 3: Luftschalldämmung gegen Außenlärm

This European Standard was approved by CEN on 2000-01-22.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

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Contents

Foreword

This European Standard 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.

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 September 2000, and conflicting national standards shall be withdrawn at the latest by September 2000.

It is the first version of this standard which forms a part of a series of standards specifying calculation models in building acoustics :

- Part 1: *Building acoustics – Estimation of acoustic performance of buildings from the performance of elements – Part 1 : Airborne sound insulation between rooms.*

- Part 2: *Building acoustics – Estimation of acoustic performance of buildings from the performance of elements – Part 2 : Impact sound insulation between rooms.*

- Part 3: *Building acoustics – Estimation of acoustic performance of buildings from the performance of elements – Part 3 : Airborne sound insulation against outdoor sound.*

- Part 4: *Building acoustics – Estimation of acoustic performance of buildings from the performance of elements – Part 4 : Transmission of indoor sound to the outside.*

- Part 5: *Building acoustics – Estimation of acoustic performance of buildings from the performance of elements – Part 5 : Noise from technical installations and equipment.*

- Part 6: *Building acoustics – Estimation of acoustic performance of buildings from the performance of elements – Part 6 : Sound absorption in enclosed spaces.*

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 mean time, 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 organisation, 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.

Annex A (normative) forms an integral part of this part of EN 12354, Annexes B, C, D, E and F are informative.

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

1 Scope

This European Standard 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 according to EN ISO 140-5. Calculations can be carried out for frequency bands or for single number ratings.

The calculation results can be used also for calculating the indoor sound pressure level due to for instance road traffic ; this use is treated in the informative annex D.

This document describes the principles of the calculation model, lists the relevant quantities and defines its applications and restrictions. 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 dwellings ; it can also be used for other types of buildings provided the dimensions of constructions are not too different from those in dwellings.

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 (including amendments).

prEN 12354-1:1999, *Building acoustics - Estimation of acoustic performance of buildings from the performance of elements - Part 1 : Airborne sound insulation between rooms.*

EN 20140-10, *Acoustics - Measurement of sound insulation in buildings and of building elements - Part 10 : Laboratory measurement of airborne sound insulation of small building elements (ISO 140-10:1991).*

EN ISO 140-1, *Acoustics - Measurement of sound insulation in buildings and of building elements - Part 1 : Requirements for laboratory test facilities with suppressed flanking transmission (ISO 140-1:1997).*

EN ISO 140-3, *Acoustics - Measurement of sound insulation in buildings and of building elements - Part 3 : Laboratory measurements of airborne sound insulation of building elements (ISO 140-3:1995).*

EN 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 140-5:1998).*

EN ISO 717-1, *Acoustics - Rating of sound insulation in buildings and of building elements - Part 1 : Airborne sound insulation (ISO 717-1:1996).*

EN ISO 11654, *Acoustics – Sound absorbers for use in buildings - Rating of sound absorption* (ISO 11654:1997).