Acoustics - Laboratory measurement of the flanking transmission of airborne and impact sound between adjoining rooms - Part 2: Application to light elements when the junction has a small influence

Acoustics - Laboratory measurement of the flanking transmission of airborne and impact sound between adjoining rooms - Part 2: Application to light elements when the junction has a small influence

EESTI STANDARDI EESSÕNA **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN ISO 10848-2:2006 sisaldab Euroopa standardi EN ISO 10848-2:2006 ingliskeelset teksti. Käesolev dokument on jõustatud 29.05.2006 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN ISO 10848-2:2006 consists of the English text of the European standard EN ISO 10848-2:2006. This document is endorsed on 29.05.2006 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: ISO 10848 specifies measurement methods to be performed in a laboratory test facility in order to characterize the flanking transmission of one or several building components. The measured quantities may be used to compare different products, or to express a requirement, or as input data for prediction methods, such as EN 12354-1 and EN 12354-2.	**Scope:** ISO 10848 specifies measurement methods to be performed in a laboratory test facility in order to characterize the flanking transmission of one or several building components. The measured quantities may be used to compare different products, or to express a requirement, or as input data for prediction methods, such as EN 12354-1 and EN 12354-2.

ICS 91.120.20

Võtmesõnad: acoustic insulation, anechoic chambers, lightweig, measurement, measurement of airborne noise, sound intensity, sound levels, specification (approval), specifications, structural members, structural systems, test benches, testing, tests, walls

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 10848-2

April 2006

ICS 91.120.20

English Version

Acoustics - Laboratory measurement of the flanking transmission of airborne and impact sound between adjoining rooms - Part 2: Application to light elements when the junction has a small influence (ISO 10848-2:2006)

Acoustique - Mesurage en laboratoire des transmissions latérales du bruit aérien et des bruits de choc entre pièces adjacentes - Partie 2: Application aux éléments légers lorsque la jonction a une faible influence (ISO 10848-2:2006)

Akustik - Messung der Flankenübertragung von Luftschall und Trittschall zwischen benachbarten Räumen in Prüfständen - Teil 2: Anwendung auf leichte Bauteile, wenn die Verbindung geringen Einfluss hat (ISO 10848-2:2006)

This European Standard was approved by CEN on 16 March 2006.

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.

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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Ref. No. EN ISO 10848-2:2006: E

Foreword

This document (EN ISO 10848-2:2006) has been prepared by Technical Committee CEN/TC 126 "Acoustic properties of building elements and of buildings", the secretariat of which is held by AFNOR, in collaboration with Technical Committee ISO/TC 43 "Acoustics".

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 October 2006, and conflicting national standards shall be withdrawn at the latest by October 2006.

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

INTERNATIONAL STANDARD

ISO 10848-2

First edition
2006-04-01

Acoustics — Laboratory measurement of the flanking transmission of airborne and impact sound between adjoining rooms —

Part 2: Application to light elements when the junction has a small influence

Acoustique — Mesurage en laboratoire des transmissions latérales du bruit aérien et des bruits de choc entre des pièces adjacentes —

Partie 2: Application aux éléments légers lorsque la jonction a une faible influence

Reference number
ISO 10848-2:2006(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

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.

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.

ISO 10848-2 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 Technical Committee ISO/TC 43, *Acoustics*, Subcommittee SC 2, *Building acoustics*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This first edition cancels and replaces EN 20140-9 and ISO 140-12.

ISO 10848 consists of the following parts, under the general title *Acoustics — Laboratory measurement of the flanking transmission of airborne and impact sound between adjoining rooms*:

— *Part 1: Frame document*

— *Part 2: Application to light elements when the junction has a small influence*

— *Part 3: Application to light elements when the junction has a substantial influence*

The following part is under preparation:

— Part 4: *Application to all other cases*

Acoustics — Laboratory measurement of the flanking transmission of airborne and impact sound between adjoining rooms —

Part 2: Application to light elements when the junction has a small influence

1 Scope

ISO 10848 specifies measurement methods to be performed in a laboratory test facility in order to characterize the flanking transmission of one or several building components.

The measured quantities may be used to compare different products, or to express a requirement, or as input data for prediction methods, such as EN 12354-1 and EN 12354-2.

This part of ISO 10848 is specifically referred to in ISO 10848-1:2006, 4.4, as being a supporting part of the frame document.

This part of ISO 10848 applies to light elements such as suspended ceilings, access floors, light uninterrupted façades or floating floors. The transmission from one room to another can be simultaneous through the test element and via the plenum, if any. With measurements according to this part of ISO 10848, the total sound transmission is measured, and it is not possible to separate the two kinds of transmission. The measured quantities $D_{n,f}$ and $L_{n,f}$ depend on the actual dimensions of the test specimen.

A light element is defined in ISO 10848-1:2006, Clause 3.

2 Normative references

The following referenced documents are indispensable for the application 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 140-2, *Acoustics — Measurement of sound insulation in buildings and of building elements — Part 2: Determination, verification and application of precision data*

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

ISO 140-6:1998, *Acoustics — Measurement of sound insulation in buildings and of building elements — Part 6: Laboratory measurements of impact sound insulation of floors*

ISO 354, *Acoustics — Measurement of sound absorption in a reverberation room*

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

ISO 717-2, *Acoustics — Rating of sound insulation in buildings and of building elements — Part 2: Impact sound insulation*

ISO 10848-1:2006, *Acoustics — Laboratory measurement of the flanking transmission of airborne and impact sound between adjoining rooms — Part 1: Frame document*

3 Terms and definitions

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

3.1
normalized flanking level difference
$D_{n,f}$
difference in the space and time average sound pressure level produced in two rooms by one or more sound sources in one of them, when the transmission only occurs through a specified flanking path

NOTE $D_{n,f}$ is normalized to an equivalent sound absorption area (A_0) in the receiving room and is expressed in decibels:

$$D_{n,f} = L_1 - L_2 - 10 \lg \frac{A}{A_0} \text{ dB} \quad (1)$$

where

L_1 is the average sound pressure level in the source room, in decibels;

L_2 is the average sound pressure level in the receiving room, in decibels;

A is the equivalent sound absorption area in the receiving room, in square metres;

A_0 is the reference equivalent sound absorption area, in square metres; A_0 = 10 m^2.

[ISO 10848-1:2006]

3.2
normalized flanking impact sound pressure level
$L_{n,f}$
space and time average sound pressure level in the receiving room produced by a standard tapping machine operating at different positions on a tested floor in the source room, when the transmission only occurs through a specified flanking path

NOTE $L_{n,f}$ is normalized to an equivalent sound absorption area (A_0) in the receiving room and is expressed, in decibels:

$$L_{n,f} = L_2 + 10 \lg \frac{A}{A_0} \text{ dB} \quad (2)$$

where

L_2 is the average sound pressure level in the receiving room, in decibels;

A is the equivalent sound absorption area in the receiving room, in square metres;

A_0 is the reference equivalent sound absorption area, in square metres; A_0 = 10 m^2.

[ISO 10848-1:2006]

3.3
plenum space
whole of the void below an access floor or above a suspended ceiling in both rooms in the test facility