



SLOVENSKI STANDARD
oSIST prEN ISO 10140-1:2009
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Acoustics - Laboratory measurement of sound insulation of building elements - Part 1:
 Test codes (ISO/DIS 10140-1:2008)

Akustik - Messung der Schalldämmung von Gebäudeteilen im Prüfstand - Teil 1:
 Prüfvorschriften (ISO/DIS 10140-1:2008)

Acoustique - Détermination de l'isolation acoustique des éléments de construction -
 Partie 1: Codes d'essai (ISO/DIS 10140-1:2008)

Ta slovenski standard je istoveten z: prEN ISO 10140-1

ICS:

91.120.20 Acoustics in building. Sound insulation

oSIST prEN ISO 10140-1:2009 en

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN ISO 10140-1

October 2008

ICS 91.120.20

Will supersede EN ISO 140-1:1997

English Version

Acoustics - Laboratory measurement of sound insulation of building elements - Part 1: Test codes (ISO/DIS 10140-1:2008)

Acoustique - Détermination de l'isolation acoustique des éléments de construction - Partie 1: Codes d'essai (ISO/DIS 10140-1:2008)

Akustik - Messung der Schalldämmung von Gebäudeteilen im Prüfstand - Teil 1: Prüfvorschriften (ISO/DIS 10140-1:2008)

This draft European Standard is submitted to CEN members for parallel enquiry. It has been drawn up by the Technical Committee CEN/TC 126.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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 Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (prEN ISO 10140-1:2008) 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 document is currently submitted to the parallel Enquiry.

This document will supersede EN ISO 140-1:1997.

Endorsement notice

The text of ISO/DIS 10140-1:2008 has been approved by CEN as a prEN ISO 10140-1:2008 without any modification.

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DRAFT INTERNATIONAL STANDARD ISO/DIS 10140-1

ISO/TC 43/SC 2

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Acoustics — Laboratory measurement of sound insulation of building elements —

Part 1: Test codes

Acoustique — Détermination de l'isolation acoustique des éléments de construction —

Partie 1: Codes d'essai

(Revision of ISO 140-1:1997 and ISO 140-1:1997/Amd 1:2004, ISO 140-10:1991, ISO 140-3:1995 and ISO 140-3/Amd 1:2004, ISO 140-6:1998 and ISO 140-8:1997)

ICS 91.120.20

ISO/CEN PARALLEL ENQUIRY

The CEN Secretary-General has advised the ISO Secretary-General that this ISO/DIS covers a subject of interest to European standardization. **In accordance with the ISO-lead mode of collaboration as defined in the Vienna Agreement, consultation on this ISO/DIS has the same effect for CEN members as would a CEN enquiry on a draft European Standard.** Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month FDIS vote in ISO and formal vote in CEN.

In accordance with the provisions of Council Resolution 15/1993 this document is circulated in the English language only.

Conformément aux dispositions de la Résolution du Conseil 15/1993, ce document est distribué en version anglaise seulement.

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Pour accélérer la distribution, le présent document est distribué tel qu'il est parvenu du secrétariat du comité. Le travail de rédaction et de composition de texte sera effectué au Secrétariat central de l'ISO au stade de publication.

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ISO/DIS 10140-1

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ISO/DIS 10140-1

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 10140-1 was prepared by Technical Committee ISO/TC 43, *Acoustics*, Subcommittee SC 2, *Building acoustics*.

ISO 10140 consists of the following parts, under the general title *Acoustics — Laboratory measurement of sound insulation of building elements*:

- *Part 1: Test codes*
- *Part 2: Measurement of airborne sound insulation*
- *Part 3: Measurement of Impact sound insulation*
- *Part 4: Measurement procedures and requirements*
- *Part 5: Requirements for test facilities and equipment*

Introduction

ISO 140 is one of the basic series of standards in building acoustics. It currently has several parts describing laboratory measurements, mounting conditions of test elements in the laboratory, and field measurements. To improve the layout of Standards for laboratory measurements, to ensure consistency, and to simplify future changes and additions, ISO/TC 43/SC 2 have created a new series of Standards, ISO 10140. The parts of ISO 140 that are concerned with laboratory measurement of the acoustic performance of products (ISO 140-1, -3, -6, -8, -10, -11, and -16) have been re-written and re-arranged with minimal alteration to the contents. The new Standard, ISO 10140, consists of the parts stated in the Foreword.

ISO 10140-1 specifies the test codes for elements and products, including specific requirements for preparation, mounting, operating and test conditions for elements and products. In the future, ISO 1040-1 will be updated in cooperation with the relevant product Technical Committees. ISO 10140-2 and ISO 10140-3 contain the general procedures for airborne and impact sound insulation measurements respectively and refer to ISO 10104-4 and ISO 10140-5 where appropriate. For elements and products without a specific test code described in ISO 10140-1 it is still possible to apply ISO 10140-2 and ISO 10140-3. ISO 10140-4 contains the basic measurement techniques and processes. ISO 10140-5 contains the requirements on test facilities and equipment.

In the future it will be possible to insert other measurement techniques and standards into this series, for example, sound insulation measurement using intensity techniques (ISO 15186) and rainfall noise measurement (ISO 140-18).

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ISO/DIS 10140-1

Structure and contents of the new ISO 10140 series:

“Acoustics – Laboratory measurement of sound insulation of building elements”

ISO number & subtitle	Main purpose, contents & use	Detailed contents
ISO 10140-1 <i>Test codes</i>	Indicates the appropriate test procedure for elements and products. For some types of elements / products, the standard may contain additional and more specific instructions about quantities and test element size and about preparation, mounting and operating conditions. Where no specific details are included, the general guidelines in parts 2 and 3 shall be followed.	Appropriate references to parts 2 and 3 and product related, specific and additional instructions on: - specific quantities to be measured - size of test element - boundary and mounting conditions - conditioning, testing and operating conditions - additional specifics for test report
ISO 10140-2 <i>Measurement of airborne sound insulation</i>	Complete procedure for airborne sound insulation measurements, referring to parts 4 and 5. It shall be sufficiently complete and general to perform measurements for products without a specific test code, but specifics in part 1 shall be applied, if available.	- Definitions of main quantities to be measured - General mounting & boundary conditions - General measurement procedure - Data processing - Test report (general points)
ISO 10140-3 <i>Measurement of impact sound insulation</i>	Complete procedure for impact sound insulation measurements, referring to parts 4 and 5. It shall be sufficiently complete and general to perform measurements for products without a specific test code, but specifics in part 1 shall be applied, if available.	- Definitions of main quantities to be measured - General mounting & boundary conditions - General measurement procedure - Data processing - Test report (general points)
ISO 10140-4 <i>Measurement procedures and requirements</i>	All needed basic measurement techniques and processes, for measurements following parts 2 and 3 or facility qualifications following part 5. Much of the contents implemented in software.	- Definitions - Frequency range - Microphone positions - SPL measurements - Averaging, space and time - Correction for background noise - Reverberation time measurements - Loss factor measurements - Low frequency measurements - radiated sound power by velocity measurement
ISO 10140-5 <i>Requirements for test facilities and equipment</i>	All information needed to design, construct and qualify the laboratory facility, its additional accessories and measurement equipment (hardware).	Test facilities, design criteria: - volumes, dimensions - flanking transmission - laboratory loss factor - maximum achievable sound reduction index - reverberation time - influence of lack of diffusivity in the lab Test openings: - standard openings for walls, floors - other openings (windows, doors, small technical elements) - filler walls in general Requirements for equipment: - loudspeakers, number, positions - tapping machine and other impact sources - measurement equipment Reference constructions: - basic elements for airborne and impact insulation improvement - corresponding reference performance curves

1 Scope

This document describes the test codes for elements and products, including detailed requirements for preparation, mounting, operating and test conditions for specific elements and products as well as quantities to be applied and additional test report information to be reported. ISO 10140-2 and ISO 10140-3 contain the general procedures for airborne and impact sound insulation measurements respectively.

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/DIS 10140-2, *Acoustics — Laboratory measurement of sound insulation of building elements — Part 2: Measurement of airborne sound insulation*

ISO/DIS 10140-3:2008, *Acoustics — Laboratory measurement of sound insulation of building element — Part 3: Measurement of impact sound insulation*

ISO/DIS 10140-5:2008, *Acoustics — Laboratory measurement of sound insulation of building elements — Part 5: Requirements for test facilities and equipments*

ISO 140-2, *Acoustics — Measurement of sound insulation in buildings and of building elements — Part 2: Determination, verification and application of precision data*

ISO 717-1:1996, *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*

3 General

General requirements regarding boundary conditions and mounting of the test element in the laboratory are given in ISO/DIS 10140-2, ISO/DIS 10140-3:2008 and ISO/DIS 10140-5:2008. For some measurements these instructions will be sufficient. Additional and more detailed requirements regarding preparation, mounting and operating conditions, and conditioning are given in the annexes of this document. For products, where the present standards are considered insufficient, a new annex can be added based on available knowledge and practice. The proposed structure of annexes is found in Clause 4.

For testing according to the ISO 10140 series of Standards, ISO/DIS 10140-1 shall always be checked for requirements relating to specific elements and products. The basic conditions described in ISO/DIS 10140-2 or ISO/DIS 10140-3:2008 shall always be followed.

4 Structure of test codes

To extend or update the annexes in this standard, or to prepare new test codes, the required contents are listed below. For some elements or products there may be items that are not relevant. The purpose is to describe boundary, mounting and operating conditions for specific elements, products or groups of products.

— Application