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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN ISO 10140-4

October 2008

ICS 91.120.20

Will supersede EN ISO 140-4:1998

English Version

**Acoustics - Laboratory measurement of sound insulation of
building elements - Part 4: Measurement procedures and
requirements (ISO/DIS 10140-4:2008)**

Acoustique - Détermination de l'isolation acoustique des
éléments de construction - Partie 4: Modes opératoires et
exigences de mesure (ISO/DIS 10140-4:2008)

Akustik - Messung der Schalldämmung von Gebäudeteilen
im Prüfstand - Teil 4: Messverfahren und Anforderungen
(ISO/DIS 10140-4:2008)

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.

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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
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Foreword

This document (prEN ISO 10140-4:2008) 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 140-4:1998.

Endorsement notice

The text of ISO/DIS 10140-4:2008 has been approved by CEN as a prEN ISO 10140-4:2008 without any modification.

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DRAFT INTERNATIONAL STANDARD ISO/DIS 10140-4

ISO/TC 43/SC 2

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Acoustics — Laboratory measurement of sound insulation of building elements —

Part 4: Measurement procedures and requirements

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

Partie 4: Modes opératoires et exigences de mesure

(Revision of ISO 140-1:1997 and ISO 140-1:1997/Amd 1:2004, ISO 140-10:1991, ISO 140-3:1995 and ISO 140-3:1995/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.

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To expedite distribution, this document is circulated as received from the committee secretariat. ISO Central Secretariat work of editing and text composition will be undertaken at publication stage.

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 10140-4

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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 10140-4 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 describes the test codes for elements and products, including specific requirements for preparation, mounting, operating and test conditions for elements and products. In the future, Part 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 10140-4 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).

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</i>	All information needed to design, construct and qualify the laboratory facility, its additional accessories and	Test facilities, design criteria: - volumes, dimensions