



NSAI
Standards

Irish Standard
I.S. EN ISO 16283-1:2014

Acoustics - Field measurement of sound insulation in buildings and of building elements - Part 1: Airborne sound insulation (ISO 16283-1:2014)

I.S. EN ISO 16283-1:2014

Incorporating amendments/corrigenda/National Annexes issued since publication:

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**Acoustics - Field measurement of sound insulation in buildings
and of building elements - Part 1: Airborne sound insulation (ISO
16283-1:2014)**

Acoustique - Mesurage in situ de l'isolation acoustique des
bâtiments et des éléments de construction - Partie 1:
Isolation des bruits aériens (ISO 16283-1:2014)

Akustik - Messung der Schalldämmung in Gebäuden und
von Bauteilen am Bau - Teil 1: Luftschalldämmung (ISO
16283-1:2014)

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EN ISO 16283-1:2014 (E)

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Foreword

This document (EN ISO 16283-1:2014) has been prepared by Technical Committee ISO/TC 43 "Acoustics" in collaboration with the 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of an identical text or by endorsement, at the latest by August 2014, and conflicting national standards shall be withdrawn at the latest by August 2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 140-7:1998, EN ISO 140-5:1998, EN ISO 140-4:1998, EN ISO 140-14:2004.

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Endorsement notice

The text of ISO 16283-1:2014 has been approved by CEN as EN ISO 16283-1:2014 without any modification.

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**INTERNATIONAL
STANDARD**

**ISO
16283-1**

First edition
2014-02-15

**Acoustics — Field measurement of
sound insulation in buildings and of
building elements —**

**Part 1:
Airborne sound insulation**

*Acoustique — Mesurage in situ de l'isolation acoustique des
bâtiments et des éléments de construction —*

Partie 1: Isolation des bruits aériens



Reference number
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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.

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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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 WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 43, *Acoustics*, Subcommittee SC 2, *Building acoustics*.

This first edition of ISO 16283-1 cancels and replaces ISO 140-4:1998, ISO 140-5:1998, ISO 140-7:1998, and ISO 140-14:2004, which have been technically revised.

ISO 16283 consists of the following parts, under the general title *Acoustics — Field measurement of sound insulation in buildings and of building elements*:

- *Part 1: Airborne sound insulation*
- *Part 2: Impact sound insulation*¹⁾
- *Part 3: Façade sound insulation*²⁾

1) To be published.

2) Under development.

ISO 16283-1:2014(E)

Introduction

ISO 16283 (all parts) describes procedures for field measurements of sound insulation in buildings. Airborne, impact and façade sound insulation are described in ISO 16283-1, ISO 16283-2³⁾ and ISO 16283-3⁴⁾, respectively.

Field sound insulation measurements that were described previously in ISO 140-4, -5, and -7 were (a) primarily intended for measurements where the sound field could be considered to be diffuse, and (b) not explicit as to whether operators could be present in the rooms during the measurement. ISO 16283 differs from ISO 140-4, -5, and -7 in that (a) it applies to rooms in which the sound field may or may not approximate to a diffuse field, (b) it clarifies how operators can measure the sound field using a hand-held microphone or sound level meter and (c) it includes additional guidance that was previously contained in ISO 140-14.

NOTE Survey test methods for field measurements of airborne and impact sound insulation are dealt with in ISO 10052.

3) To be published.

4) Under development.

Acoustics — Field measurement of sound insulation in buildings and of building elements —

Part 1: Airborne sound insulation

1 Scope

This part of ISO 16283 specifies procedures to determine the airborne sound insulation between two rooms in a building using sound pressure measurements. These procedures are intended for room volumes in the range from 10 m³ to 250 m³ in the frequency range from 50 Hz to 5 000 Hz. The test results can be used to quantify, assess and compare the airborne sound insulation in unfurnished or furnished rooms where the sound field may or may not approximate to a diffuse field. The measured airborne sound insulation is frequency-dependent and can be converted into a single number quantity to characterize the acoustic performance using the rating procedures in ISO 717-1.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 3382-2, *Acoustics — Measurement of room acoustic parameters — Part 2: Reverberation time in ordinary rooms*

ISO 12999-1, *Acoustics — Determination and application of measurement uncertainties in building acoustics — Part 1: Sound insulation*¹⁾

ISO 18233, *Acoustics — Application of new measurement methods in building and room acoustics*

IEC 60942, *Electroacoustics — Sound calibrators*

IEC 61183, *Electroacoustics — Random-incidence and diffuse-field calibration of sound level meters*

IEC 61260, *Electroacoustics — Octave-band and fractional-octave-band filters*

IEC 61672-1, *Electroacoustics — Sound level meters — Part 1: Specifications*

3 Terms and definitions

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

1) To be published.

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