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NSAI Standards

Irish Standard
I.S. EN ISO 16283-2:2015

Acoustics - Field measurement of sound insulation in buildings and of building elements - Part 2: Impact sound insulation (ISO/DIS 16283-2:2013)

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This document is based on:	*Published:*
EN ISO 16283-2:2015	2015-12-09

This document was published under the authority of the NSAI and comes into effect on: 2015-12-27	ICS number: 91.060.30 91.120.20 NOTE: If blank see CEN/CENELEC cover page

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National Foreword

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NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 16283-2

December 2015

ICS 91.120.20; 91.060.30

Supersedes EN ISO 140-14:2004, EN ISO 140-7:1998

English Version

Acoustics - Field measurement of sound insulation in buildings and of building elements - Part 2: Impact sound insulation (ISO 16283-2:2015)

Acoustique - Mesurage in situ de l'isolation acoustique des bâtiments et des éléments de construction - Partie 2: Isolation des bruits d'impacts (ISO 16283-2:2015)

Akustik - Messung der Schalldämmung in Gebäuden und von Bauteilen am Bau - Teil 2: Trittschalldämmung (ISO 16283-2:2015)

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European foreword

This document (EN ISO 16283-2:2015) 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 European Standard shall be given the status of a national standard, either by publication of aidentical text or by endorsement, at the latest by June 2016, and conflicting national standards shall be withdrawn at the latest by June 2016.

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INTERNATIONAL STANDARD

ISO 16283-2

First edition
2015-11-15

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

Part 2: Impact sound insulation

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

Partie 2: Isolation des bruits d'impacts

Reference number
ISO 16283-2:2015(E)

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Foreword

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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. www.iso.org/directives

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

This first edition of ISO 16283-2 cancels and replaces 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*

— *Part 3: Façade sound insulation*

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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 16283-2 and ISO 16283-3, respectively.

Field sound insulation measurements that were described previously in ISO 140-4, ISO 140-5, and ISO 140-7 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 (all parts) differs from ISO 140-4, ISO 140-5, and ISO 140-7 in that a) it applies to rooms in which the sound field might, or might 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.

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

Part 2: Impact sound insulation

1 Scope

This part of ISO 16283 specifies procedures to determine the impact sound insulation using sound pressure measurements with an impact source operating on a floor or stairs in a building. These procedures are intended for room volumes in the range from 10 m^3 to 250 m^3 in the frequency range from 50 Hz to 5 000 Hz. The test results can be used to quantify, assess and compare the impact sound insulation in unfurnished or furnished rooms where the sound field might, or might not approximate to a diffuse field.

Two impact sources are described: the tapping machine and the rubber ball. These impact sources do not exactly replicate all possible types of real impacts on floors or stairs in buildings.

The tapping machine can be used to assess a variety of light, hard impacts such as footsteps from walkers wearing hard-heeled footwear or dropped objects. A single number quantity can be calculated using the rating procedures in ISO 717-2. This single number quantity links the measured impact sound insulation using the tapping machine to subjective assessment of general impacts in dwellings that occur on floors or stairs in a building. The tapping machine is also well-suited to the prediction of impact sound insulation using ISO 15712-2. These two aspects facilitate the specification of impact sound insulation in national building requirements using only measurements with the tapping machine as an impact source.

The rubber ball can be used to assess heavy, soft impacts such as from walkers in bare feet or children jumping, as well as quantifying absolute values that can be related to human disturbance in terms of a Fast time-weighted maximum sound pressure level. At present, calculation procedures for a single number quantity do not currently exist in an ISO Standard.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable to 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 717-2, *Acoustics — Rating of sound insulation in buildings and of building elements — Part 2: Impact 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*

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*

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