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Second edition
2018-05

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 16283-2:2018(E)

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Published in Switzerland

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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 voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 43, *Acoustics*, Subcommittee SC 2, *Building acoustics*.

This second edition cancels and replaces the first edition (ISO 16283-2:2015), which has been technically revised.

The main changes compared to the previous edition are as follows:

- amended text in [7.3.2](#) so that the choice of microphone positions applies to any impact source.

A list of all parts in the ISO 16283 series can be found on the ISO website.

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, this document (ISO 16283-2) and ISO 16283-3, respectively.

Field sound insulation measurements that were described previously in ISO 140-4¹⁾, ISO 140-5²⁾, and ISO 140-7³⁾ 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 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;
- c) it includes additional guidance that was previously contained in ISO 140-14⁴⁾.

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

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 12354-2. 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. Calculation procedures for a single number quantity do not currently exist in an International Standard.

1) Withdrawn.

2) Withdrawn.

3) Withdrawn.

4) Withdrawn.