



DRAFT AMENDMENT ISO 10140-3:2010/DAM 3

ISO/TC 43/SC 2

Secretariat: DIN

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Acoustics — Laboratory measurement of sound insulation of building elements —

Part 3: Measurement of impact sound insulation

AMENDMENT 3

Acoustique — Mesurage en laboratoire de l'isolation acoustique des éléments de construction —

Partie 3: Mesurage de l'isolation au bruit de choc

AMENDEMENT 3

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ICS 91.120.20

[ISO 10140-3:2010/DAmD 3](#)

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ISO/CEN PARALLEL PROCESSING

This draft has been developed within the International Organization for Standardization (ISO), and processed under the **ISO-lead** mode of collaboration as defined in the Vienna Agreement.

This draft is hereby submitted to the ISO member bodies and to the CEN member bodies for a parallel five-month enquiry.

Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month approval vote in ISO and formal vote in CEN.

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.

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Foreword

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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.

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Amendment 3 to ISO 10140-3:2010 was prepared by Technical Committee ISO/TC 43, *Acoustics*, Subcommittee SC 2, *Building acoustics*.

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Acoustics — Laboratory measurement of sound insulation of building elements — Part 3: Measurement of impact sound insulation - Amendment 3

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Add the following new sub-clause as sub-clause 5.4 and renumber Clause 5 accordingly.

5.4 Correction of airborne sound transmission

In case that the airborne sound transmission from the source to the receiving room can not be neglected (this applies to situations where airborne and impact sound pressure level in the receiving room differ by less than 10 dB, for instance for long reverberation times in the source room or floors with good impact but poor airborne sound insulation) the measured impact sound shall be corrected. Make the correction in the following way:

- a) Measure the sound levels generated by the tapping machine in the source and the receiving room, L_{TS} and L_{TR} .
- b) While running a loudspeaker in the source room the resulting sound levels in the source and receiving room, L_{LS} and L_{LR} , are measured. From the measured values calculate the difference $D = L_{LS} - L_i$. To ensure constant measuring conditions the loudspeaker shall already be in the source room during the measurement of impact sound. It shall be placed in an edge of the room in a height of 1,0 m and a distance of 1,0 m to the walls (the mentioned distances refer to the centre of the source). Further positions of the loudspeaker are not necessary. If the airborne sound reduction index R of the floor is known, D can be alternatively determined from $D = R - 10 \lg(S/A)$, where S is the floor area and A is the equivalent absorption area in the receiving room.
- c) Calculate the normalized impact sound level L_n according to equation (3). If necessary both L_{TR} and L_{LR} should be corrected for background noise according to ISO 10140-4, 4.3.

$$L_n = 10 \lg \left(10^{L_i/10} - 10^{(L_{TS}-D)/10} \right) + 10 \lg \left(\frac{A}{A_0} \right) \quad (3)$$

where

A is the equivalent absorption area in the receiving room;

$A_0 = 10 \text{ m}^2$;

L_{TS} is the sound level generated by the tapping machine in the source room;

L_i is the sound level generated by the tapping machine in the receiving room.

The calculation is performed in third octave bands. If a correction for airborne sound is applied, this shall be mentioned in the test report. For the case that the condition $L_i - (L_{TS} - D) \geq 10 \text{ dB}$ is valid in all third octave bands a correction of airborne sound is not necessary. For $L_i - (L_{TS} - D) \leq 3 \text{ dB}$ sound transmission is dominated by airborne sound and impact sound insulation can not be measured correctly.