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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 45305.4-2025

**Acoustics - Laboratory measurement of sound insulation of
building elements - Part 4: Measurement procedures and
requirements**

声学建筑构件隔声的实验室测量第4部分：测量程序和要求

(English Translation)

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Table of Contents

Preface	
Introduction	
1 Scope	
2 Normative references	
3 Terms and Definitions	
4 Measurement procedures and requirements	
4.1 Frequency range	
4.2 Sound pressure level measurement	
4.2.1 Overview	
4.2.2 Minimum spacing between microphone locations	
4.2.3 Average time	
4.2.4 Average sound pressure level	
4.3 Background noise correction	
4.4 Airborne sound insulation measurement	
4.4.1 General	
4.4.2 Measurement with fixed microphone position	
4.4.3 Continuously moving microphone measurement	
4.5 Impact sound insulation measurement	
4.5.1 General	
4.5.2 Fixed microphone position measurement	
4.5.3 Continuously moving microphone measurement	
4.6 Reverberation time and sound absorption measurement	
4.6.1 General	
4.6.2 Reverberation time measurement	
4.6.3 Sound absorption measurement	
4.7 Structural Reverberation Time Measurement	
4.8 Determination of radiated sound power using component surface vibration velocity	
5 Sound insulation performance measurement	
5.1 General requirements	
5.2 General method for determining airborne sound insulation performance	
5.2.1 General	

- 5.2.2 Fixed microphone position for multiple loudspeakers operating simultaneously or a mobile loudspeaker
- 5.2.3 Fixed microphone position versus single loudspeaker operating at multiple positions
- 5.2.4 Continuously moving microphones corresponding to multiple loudspeakers operating simultaneously or a moving loudspeaker
- 5.2.5 Continuously moving microphone versus single loudspeaker operating at multiple positions
- 5.3 General method for determining impact sound insulation performance
 - 5.3.1 General
 - 5.3.2 Fixed microphone position
 - 5.3.3 Continuously moving microphone
- Appendix A (Informative) Additional low frequency measurements
 - A.1 Overview
 - A.2 Minimum distance
 - A.3 Sound field sampling
 - A.4 Speaker Position
 - A.5 Average time
 - A.6 Reverberation time
- Reference

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting is required.

This document is part 4 of GB/T 45305 "Laboratory measurement of sound insulation of acoustic building elements". GB/T 45305 has been published the following parts.

--- Part 4: Measurement procedures and requirements.

This document modifies ISO 10140-4:2021 "Acoustic building elements - Laboratory measurements of sound insulation - Part 4: Measurement procedures and Require".

The technical differences between this document and ISO 10140-4:2021 and their reasons are as follows.

--- ISO 18233 (see 4.6.2.1) was replaced by the normative reference GB/T 25079 to adapt to my country's technical conditions;

--- ISO 3382-2 (see 4.6.1 and 4.6.2.1) has been replaced by the normative reference GB/T

36075.2 to adapt to my country's technology condition.

The following editorial changes were made to this document.

- Added the scope of application of this document in the "Scope" chapter to clarify the scope of use and comply with my country's standards drafting rules;
- Added the explanation of the reference sound pressure p_0 in formula (1) (see 4.2.4.1);
- GB/T 31004.1 replaces the informative reference ISO 15186-1 (see Note 4.8);
- Corrected the typographical error, and changed the following in 5.1. "Mobile or fixed loudspeakers may be used for measurement" and "It is advisable to use loudspeakers in the same source room and receiving room" "Measurement is performed when" was moved to 5.2.1, and the content in 5.3.1 that was repeated with 5.1 was deleted.

Introduction

GB/T 45305 "Laboratory measurement of sound insulation of acoustic building components" involves laboratory measurement methods for sound insulation of building components, aiming to standardize Improve the layout of the laboratory for component sound insulation measurement to ensure the consistency of the measurement and simplify the test piece installation conditions and the need for additional Revision work in time.

GB/T 45305 is planned to consist of 5 parts.

- Part 1: Application rules for specific products. Corresponding to ISO 10140-1. The purpose is to give laboratory measurements of specific components and products.

The appropriate test procedures for the sound insulation of products include specific requirements for specimen preparation, installation, operation and test conditions.

- Part 2: Measurement of airborne sound insulation. Corresponding to ISO 10140-2. The purpose is to provide laboratory measurement of airborne sound insulation of building components.

General procedure for measuring sound.

- Part 3: Measurement of impact sound insulation. Corresponding to ISO 10140-3. The purpose is to provide laboratory measurement of impact sound insulation of floor components.

General procedure for measuring sound.

- Part 4: Measurement procedures and requirements. Corresponding to ISO 10140-4. The purpose is to provide laboratory measurements of airborne sound insulation of building components.

Basic measurement techniques and test procedures for acoustic and impact sound

insulation.

--- Part 5: Requirements for test facilities and equipment. Corresponding to ISO 10140-5. The purpose is to provide design, construction and certification of sound insulation. Detailed information required for measuring laboratory test facilities, additional equipment and measuring instrumentation.

Acoustics Laboratory measurements of sound insulation of building components Part 4: Measurement procedures and requirements

1 Scope

This document specifies the general procedures, technical requirements and test procedures for measuring the sound insulation performance of building elements in laboratory test facilities.

This document is applicable to laboratory measurements of airborne sound insulation and impact sound insulation of building components, and to the experimental measurements of sound insulation of other components.

For reference in laboratory measurements.

2 Normative references

The contents of the following documents constitute essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document.

GB/T 25079 Acoustics - Application of new measurement methods in architectural acoustics and room acoustics - MLS and SS methods (GB/T 25079-2010, ISO 18233:2006, IDT) GB/T 36075.2 Acoustics Measurement of indoor acoustic parameters Part 2: Reverberation time of ordinary rooms (GB/T 36075.2-2018, ISO 3382-2:2008, IDT) ISO 10140-1:2021 Acoustics - Laboratory measurement of sound insulation of building elements - Part 1: Rules for application to specific products (Acoustics-Laboratory measurement of sound insulation of building elements-Part 1: Application rules for specific products) ISO 10140-2 Acoustics - Laboratory measurements of sound insulation of building elements - Part 2: Measurement of airborne sound insulation Laboratory measurement of sound insulation of building elements-Part 2: Laboratory measurements of airborne sound insulation) ISO 10140-3 Acoustics - Laboratory measurements of sound insulation of building elements - Part 3: Measurement of impact sound insulation Laboratory measurement of sound insulation of building elements-Part 3: Laboratory measurements of impact sound insulation) ISO 10140-5:2021 Acoustics -