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

GB/T 45305.2-2025

Replacing GB/T 19889.3-2005

**Acoustics - Laboratory measurement of sound insulation of
building elements - Part 2: Measurement of airborne sound
insulation**

声学 建筑构件隔声的实验室测量 第2部分：空气声隔声测量

(English Translation)

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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.

This document is Part 2 of GB/T 45305 "Acoustic building elements - Laboratory measurement of sound insulation". GB/T 45305 has been published.

The following sections.

--- Part 2: Measurement of airborne sound insulation;

--- Part 4: Measurement procedures and requirements.

This document replaces GB/T 19889.3-2005 "Acoustic buildings and building elements - Measurement of sound insulation - Part 3: Airborne sound insulation of building elements" Compared with GB/T 19889.3-2005, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

--- Deleted the "indoor average sound pressure level" in the terms and definitions, and added "structural normalized sound pressure level difference" and "small building components" (see Chapter 3, Chapter 3 of GB/T 19889.3-2005);

--- Added test content for small building components (see Chapter 1, 3.3, 3.4, 6.5, 7.2 and Appendix A);

--- Deleted "Technical requirements and arrangement of sound sources" and replaced it with a normative reference to ISO 10140-5 (see 5.2, GB/T 19889.3-2005 Appendix C of);

--- Deleted the content on the measurement of average sound pressure level, reverberation time and sound absorption and the correction of background noise, and replaced it with normative reference GB/T 45305.4 (see 5.3, 6.2, 6.4, and 6.5 of GB/T 19889.3-2005)

--- Deleted the installation details of door, window and glass test pieces and quoted ISO 10140-1 (see 6.1, GB/T 19889.3-2005) instead.

5.2.2);

--- Deleted "Sealants for installing glass in test openings" (see Appendix A of GB/T 19889.3-2005);

--- Deleted "Measurement of lateral sound transmission" and included the revised "Determination method of lateral sound transmission" in Appendix A (see A.2, Appendix D of GB/T 19889.3-2005);

--- Deleted "Installation Guidelines for Sound Insulation Measurement of Double-layer Lightweight Panel Partition Walls" (see Appendix H of GB/T 19889.3-2005).

This document is modified to adopt ISO 10140-2:2021 "Acoustic building elements - Laboratory measurement of sound insulation - Part 2: Airborne sound insulation" Measurement".

The technical differences between this document and ISO 10140-2:2021 and their reasons are as follows.

--- The normative reference GB/T 45305.4 replaces ISO 1040-4 (see 5.1, 5.2, 5.3, Chapter 9) to adapt to my country's technical standards.

Technical conditions and increase operability;

--- The normative reference GB/T 19889.2 replaces ISO 12999-1 (see Chapter 8) to adapt to my country's technical conditions.

The following editorial changes have been made to this document.

--- Change the explanatory content in the definition of sound insulation in 3.1 to a note (see Note 1 to 3.1);

--- Change the explanatory content in the definition of apparent sound insulation in 3.2 to a note (see Note 1 to 3.2);

--- Change the explanatory content in the definition of normalized sound pressure level difference of components in 3.3 to a note (see Note 1 of 3.3);

--- Added additional informative information (see note to 5.1);

---Added references.

Introduction

GB/T 45305 "Laboratory measurement of sound insulation of building components" involves laboratory measurement methods for sound insulation of building components, aiming to standardize Improve the layout of the sound insulation measurement of components in the laboratory to ensure the consistency of the measurement and simplify the installation of test pieces with changes in installation conditions and the need for additional the supplementary revision work is planned to consist of five parts.

--- Part 1: Application rules for specific products. The purpose is to provide laboratory tests suitable for measuring the sound insulation of specific components and products.

Procedures, including specific requirements for specimen preparation, installation, operation and test conditions.

--- Part 2: Measurement of airborne sound insulation. The purpose is to provide a general measurement procedure for laboratory measurement of airborne sound insulation of building components.

--- Part 3: Measurement of impact sound insulation. The purpose is to provide a general measurement procedure for laboratory measurement of impact sound insulation of floor components.

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

Basic measurement techniques and test procedures.

--- Part 5: Requirements for test facilities and equipment. The purpose is to provide the design, construction and certification of sound insulation measurement laboratory test equipment.

Detailed information required for the installation, additional equipment and measuring instruments.

Laboratory measurements of sound insulation of acoustic building elements Part 2:
Measurement of airborne sound insulation

1 Scope

This document describes a laboratory method for measuring the airborne sound insulation of building elements such as walls, floors, doors, Windows, shutters, exterior wall components, exterior walls, glass, small building components (such as ventilation devices, vents, outdoor air inlets, electrical cable ducts, pipe ducts, etc.) insulation and sealing systems) and composite components (e.g. walls and floors with acoustic lining, suspended ceilings or floating floors).

This document is applicable to the measurement of sound insulation of building components. The measurement results are applicable to the comparison and classification of sound insulation performance of building components, which is helpful for the design of Building products with a certain sound insulation performance and estimation of the on-site sound insulation performance of the building after completion.

The sound insulation measurements in this document are carried out in a laboratory with suppressed lateral sound transmission, without considering lateral sound transmission, boundary conditions and total loss factor.

Under conditions that affect the sound insulation performance, the measurement results are not suitable for directly indicating the on-site sound insulation performance of building components.