



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

GB/T 19889.2-2022

**Acoustics - Measurement of sound insulation in buildings and
of building elements - Part 2: Determination and application of
measurement uncertainties**

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Table of Contents

foreword

Introduction

1 Scope

2 Normative references

3 Terms and Definitions

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 of Standardization Documents" drafted.

This document is part 2 of GB/T 19889 "Measurement of Sound Insulation for Acoustic Buildings and Building Components". GB/T 19889 has been released

The following parts.

- Part 1. Requirements for laboratory test facilities with suppressed lateral sound transmission;
- Part 2. Measurement uncertainty evaluation and application;
- Part 3. Laboratory measurements of airborne sound insulation of building components;
- Part 4. On-site measurement of airborne sound insulation between rooms;
- Part 5. On-site measurement of external wall components and airborne sound insulation of external walls;
- Part 6. Laboratory measurements of floor impact sound insulation;
- Part 7. On-site measurement of impact sound insulation;
- Part 8. Laboratory measurement of the impact sound improvement of the cladding of heavy standard floor slabs;
- Part 10. Laboratory measurements of airborne sound insulation of small building elements;
- Part 14. Guidelines for special field measurements;
- Part 18. Laboratory measurements of rain noise sound insulation of building components.

This document replaces GB/T 19889.2-2005 "Measurement of Sound Insulation for Acoustic Buildings and Building Components - Part 2.Data Precision

Compared with GB/T 19889.2-2005, except for structural adjustment and editorial changes, the main technical changes are as follows.

--- Changed some terms and definitions (see Chapter 3, Chapter 3 of the.2005 edition);

--- Added the method of evaluating measurement uncertainty by GUM method (see Chapter 4, Appendix C);

--- Changed the method of evaluating measurement uncertainty by comparing measurement results between laboratories (see Chapter 5, Chapter 4 of the.2005 edition and

Chapter 5);

--- Changed the expression parameters of the measurement uncertainty of the inter-laboratory comparison measurement results, from "repetition rate and reproducibility rate" to "reproducibility standard"

standard deviation, in situ standard deviation and repeatability standard deviation" (see 5.2 and Chapter 7, Chapters 4 and 5 of the.2005 edition);

--- Added the uncertainty evaluation method for single value evaluation (see Chapter 6);

--- Increase the standard uncertainty of typical measurements, delete the precision of sound insulation measurements, the repetition rate and reproduction rate of single value quantities (see Section

Chapter 7, Appendix A and Appendix B of the.2005 edition);

--- Increased the application of measurement uncertainty, deleted the application of repetition rate and reproducibility (see Chapter 8, Chapter 6 of the.2005 edition).

This document is modified to adopt ISO 12999-1.2020 "Assessment and Application of Uncertainty in Measurement of Acoustic Building Acoustics - Part 1.Separation

Voice".

This document has the following structural adjustments compared to ISO 12999-1.2020.

---Appendix A, Appendix B and Appendix C correspond to Appendix C, Appendix A and Appendix B in ISO 12999-1.2020, respectively.

The technical differences between this document and ISO 12999-1.2020 and their reasons are as follows.

---In the "scope", the scope of application of this document is added to clarify the boundaries of use and to comply with the drafting rules of our country's standards.

The following editorial changes have been made to this document.

--- In order to harmonize with existing standards, the name of the standard was changed to "Acoustic Building and Building Components Sound Insulation Measurement Part 2. Inaccurate Measurements"

Qualitative Assessment and Application";

--- For the terms and definitions in Chapter 3, appropriate modifications have been made according to the expressions in GB/T 6379.1 and GB/T 27418 (see 3.3,

3.8, 3.10);

--- Added explanation of GUM method (see Introduction, Chapter 4);

--- Corrected the typographical error in Chapter 6, in "Method 1", "See Chapter 8 for the typical uncertainty assessed by this method" was changed to "According to

Typical uncertainties assessed by this method are detailed in Chapter 7";

--- Corrected the typographical error in Appendix A, the interpretation of the symbol "f" in formula (A.2) was changed from "function given by formula (A.2)" to

"The function given by formula (A.1)";

--- Adjusted references.

Please note that some content of this document may be patented. The issuing agency of this document assumes no responsibility for identifying patents.

Introduction

Measurement of Sound Insulation in Buildings ISO 140 (all parts) Measurement of Sound Insulation in Acoustical Buildings and Building Elements has been revised and the standard number has been changed

and standard names. Among them, the original standard number and standard name of the relevant parts related to laboratory sound insulation measurement are changed to ISO 10140 (all parts)

"Laboratory Measurement of Sound Insulation of Acoustic Building Components" is divided into five parts; the original standard number and standard name of the relevant parts involving on-site measurement have been changed.

It is ISO 16283 (all parts) "On-site measurement of sound insulation of acoustic buildings and building components", which is divided into three parts; originally related to the uncertainty of sound insulation measurement

The standard number and standard name of Part 2 of the degree have been changed to ISO 12999-1 "Evaluation and application of uncertainty in measurement of acoustics in

acoustic buildings - Part 2".

Part 1.Sound Insulation". GB/T 19889 (all parts) "Measurement of sound insulation of acoustic buildings and building components" (first edition) is an international standard

The ISO 140 transformation of our country's standard, my country's revision of this series of sound insulation measurement standards will still use the standard number of GB/T 19889.

GB/T 19889 (all parts) "Measurement of sound insulation of acoustic buildings and building components" is the basic method standard for sound insulation measurement in my country.

Specification and guidance of sound insulation measurement of buildings and building components in my country

It is proposed to consist of nine parts after the revision.

--- Part 1.Requirements for laboratory testing facilities and equipment. Corresponds to ISO 10140-5.The purpose is to provide design, construction and identification

Detailed information needed to determine sound insulation measurement laboratory test facilities, add-ons and measuring instrumentation equipment.

--- Part 2.Measurement uncertainty evaluation and application. Corresponds to ISO 12999-1.The purpose is to provide measurement in building sound insulation measurement

Uncertainty assessment method.

--- Part 3.Laboratory measurements of airborne sound insulation. Corresponds to ISO 10140-2.The purpose is to provide laboratory measurement of building components

General measurement procedure for airborne sound insulation.

--- Part 4.On-site measurement of airborne sound insulation. Corresponds to ISO 16283-1.The purpose is to provide a space between two rooms in the building

Field measurement method of airborne sound insulation.

--- Part 5.On-site measurement of external wall components and airborne sound insulation of external walls. Corresponds to ISO 16283-3.The purpose is to provide buildings

Field measurement method for airborne sound insulation of exterior wall components and exterior walls.

--- Part 6.Laboratory measurements of impact sound insulation. Corresponds to ISO 10140-3.The purpose is to provide laboratory measurement of floor components

General measurement procedure for impact sound insulation.

--- Part 7.On-site measurement of impact sound insulation. Corresponds to ISO 16283-2.The purpose is to provide the current situation of building impact sound insulation