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PEOPLE'S REPUBLIC OF CHINA**

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**Acoustics -- Test methods for the qualification of free-field
environments**

(English Translation)

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Table of Contents

Preface

Introduction

1 Scope

2 Normative references

3 Terms and definitions

4 And the square inverse law of tolerance

5 Free sound field performance measurement

5.1 Divergent attenuation method

5.2 Information to be recorded

5.3 Report Information

Appendix A (Normative) Assessment criteria and measurement requirements

Appendix B (Normative) General procedure for sound source directivity assessment

Appendix C (Informative) Measurement Uncertainty

Appendix D (informative) on the reference to the standard description

References

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the translation method identical with ISO 26101:2012 "Acoustic Freefield Environmental Assessment Test Method." the documents of our country that are consistent with the corresponding international documents that are normative references in this standard are as follows.

--- GB/T 3241-2010 Electroacoustics Octave and Fractional Octave Filters (IEC 61260:1995, MOD)

--- GB/T 3785.1-2010 Electroacoustic sound level meter Part 1. Specification (IEC 61672-1:2002, IDT) this standard made the following editorial changes.

--- To simplify the expression, delete the original 3.8, the text directly to the "reference standard of this standard document" is given;

--- 5.1.3.2 Added note describing the positional relationship of the microphone's path of movement to the axis of the sound source (see 5.1.3.2).

This standard proposed by the Chinese Academy of Sciences.

This standard by the National Acoustic Standardization Technical Committee (SAC/TC17) centralized.

This standard drafting unit. China Institute of Metrology, Shenzhen Zhongya Electrical and Mechanical Industry Co., Ltd., Acoustics Institute of Chinese Academy of Sciences, Tongji University, Zhejiang University, Harbin Engineering University, Shanghai Institute of Environmental Sciences, Northwestern Polytechnical University.

Introduction

This standard describes the use of emission attenuation method to measure the free sound field or free surface above the reflective surface of the environmental performance. If the sound field environment the boundary surface absorbs all incident sound energy, then the environment is a free sound field. Free sound fields are usually obtained from special test environments such as noise cancellation Room and semi-anechoic chamber. In fact, the anechoic chamber and the semi-anechoic chamber provide a controlled free acoustic field for acoustic measurements in a limited space.

This standard is intended to unify the measurement methods and test conditions in the free sound field environmental assessment.

Recommended other national standards and industry standards using this standard assessment method, reference may also be specified when applicable to the test method used Assessment criteria and the required test path.

Acoustics free field environmental assessment test method

1 Scope

This standard specifies the method is suitable for assessing the acoustic space such as anechoic chamber and semi-anechoic chamber to meet the free acoustic field conditions.

This standard specifies the discrete frequency method and broadband method for the assessment of spatial performance of muffler space and semi-anechoic space, provides for the use of non-directional Sound source for free sound field assessment process, elaborated the process of obtaining the test results, and gives the measurement uncertainty of the assessment method.

This standard proposed silencer space and semi-anechoic space assessment method for a variety of acoustic measurement needs. For some specific sounds Learn measurement requirements, other standards and test specifications can be referenced to this standard for evaluation.

For general acoustic measurements where no requirements or guidelines are specified, Appendix A gives criteria and measurements for anechoic and semi-anechoic chambers used Test requirements.

This standard specifies the divergence attenuation method for the measurement of free sound field performance in the sound field environment.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article Pieces. For undated references, the latest edition (including all amendments) applies to this document.

IEC 61260 electroacoustic octave and fractional octave filter
(Electroacoustics-Octave-bandandfractional-octave-bandfilters) IEC 61672-1
Electroacoustics sound level meter Part 1. Specification
(Electroacoustics-Soundlevelmeters-Part 1.

Specifications

ISO/IEC Guide 98-3-2008 Measurement Uncertainty Part 3. Guidance on the Expression of Uncertainty in Measurement (GUM.1995) [Un-certaintyofmeasurement-Part 3:
Guidetotheexpressionofuncertaintyinmeasurement (GUM.
1995)]

3 Terms and definitions

The following terms and definitions apply to this document.

Free soundfield in homogeneous isotropic media, the boundary affects sound fields that can be ignored.

Anechoicspace anechoic space in homogeneous isotropic media, the boundary effect is negligible, and free space is available.

Semi-anechoic space hemi-anechoicspace in homogeneous isotropic media, the boundary effect is negligible, and free space above the reflecting surface is obtained.

Acoustic center acousticcentre for a sound source or given test signal, the center of sound is the approximate location of the source of the spherical wavefront.