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

GB/T 34877.2-2023

**Industrial fans - Determination of fan sound power levels under
standardized laboratory conditions - Part 2: Reverberant room
method**

(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents" Drafting:

This document is Part 2 of GB/T 34877 "Determination of sound power level of fans under standard laboratory conditions for industrial fans":

GB/T 34877 has released the following 4 parts:

- Part 1: General requirements;
- Part 2: Reverberation chamber method;
- Part 3: Envelope surface method;
- Part 4: Sound intensity method:

This document is equivalent to ISO 13347-2:2004 "Industrial Fan Standard Determination of Sound Power Level of Fans under Laboratory Conditions - Part 2" Sub: Reverberation Chamber Method":

A "Terms and Definitions" chapter has been added to this document:

This document has made the following minimal editorial changes:

---Incorporates the technical errata content of ISO 13347-2:2004/Cor1:2006, and the outer margin of the involved clauses Indicated with vertical double lines (||):

Please note that some content in this document may be subject to patents: The publisher of this document assumes no responsibility for identifying patents:

Introduction

The sound power level of a ventilator is an important acoustic index to measure the performance of a ventilator: This document is used to measure the acoustic performance of industrial fans and can also be used it is an important testing method for determining the acoustic power of fans with attached devices under standard laboratory conditions: Although There are many domestic standards for measuring fan noise, but none of them is universally accepted and cannot be effectively compared: Internationally advanced the adoption of technical standards can enable my country's wind turbine companies to perform at the same level as similar international companies in the final acceptance of product quality:

Participate in international competitions under standard conditions for measurement methods:

GB/T 34877 aims to establish the important tests for the determination of the basic acoustic

performance of industrial fans and the determination of sound power under standard laboratory conditions:

The method is intended to consist of four parts:

---Part 1: General requirements: The purpose is to be suitable for measuring the acoustic performance of industrial ventilators and to determine the performance of ventilators and auxiliary equipment:

acoustic performance when combined:

---Part 2: Reverberation chamber method: Intended for use only under standardized laboratory conditions, as field testing increases the complexity Deterministic, so field testing is not applicable:

---Part 3: Envelope surface method: The purpose is to establish the laboratory conditions necessary for a successful experiment, which are rarely available in the field:

sufficient to meet these conditions, and this standard is not used for on-site measurements: Using the envelope surface method for standardized installation types of ventilators the sound power level is measured at the open inlet and/or open outlet:

---Part 4: Sound intensity method: It is intended to be used only for the determination of airborne sound radiation for a specified setting: It does not measure vibrations, nor does it measure the sensitivity of airborne sound radiation to vibration effects and the size of the fans to be tested are only limited by test installation practices:

For determining the sound power by measuring the sound intensity on a measuring surface surrounding the sound source:

The equivalent adoption of Part 2 will help my country's ventilator industry and related fields better understand and implement the relevant technical requirements in the standard:

To improve the overall acoustic technology level of the ventilator industry:

Industrial fans for standard laboratory conditions Determination of sound power level Part 2: Reverberation chamber method

1 Scope

This document specifies the reverberation chamber method for determining the sound power level of fans: Only suitable for use under standardized laboratory conditions, due to on-site testing Testing increases uncertainty, so field testing is not suitable:

This document is used together with ISO 5136, which covers duct law, and ISO 10302-1, which applies to small fans:

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, the dated quotations for undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document:

GB/T 1236-2017 Standardized air duct performance test for industrial ventilators (ISO 5801:2007, IDT) 1) Note: There is no technical difference between the quoted content of GB/T 1236-2017 and the quoted content of ISO 5801:2007:

GB/T 19843-2005 Performance test of industrial ventilator jet fans (ISO 13350:1999, IDT)
GB/T 25516-2010 Laboratory measurement methods for acoustic duct silencers and duct end units, insertion loss, airflow noise and total pressure loss (ISO 7235:2003, IDT) GB/T 21231.1-2018 Measurement of air noise radiated and structural vibration caused by small acoustic ventilation devices - Part 1 Points: Air noise measurement (ISO 10302-1:2011, IDT) 2) Note: There is no technical difference between the quoted content of GB/T 21231.1-2018 and the quoted content of ISO 10302-1:2011:

GB/T 34877.1-2023 Industrial ventilators Determination of sound power level of ventilators under standard laboratory conditions Part 1: General Requirements (ISO 13347-1:2004, IDT) ISO 3740 Guidelines for the use of the basic standard for the determination of sound power levels of acoustic noise sources (Acoustics-Determination of Note: GB/T 14367-2006 Guide to the use of basic standards for the determination of sound power levels of acoustic noise sources (ISO 3740:2000, MOD) ISO 3741 Acoustics-Determination of sound pressure method Determination of sound power level of noise source Reverberation chamber precision method (Acoustics-Determination of sound Note: GB/T 6881.1-2002 Acoustic sound pressure method for determination of noise source sound power level Reverberation chamber precision method (ISO 3741:1999, IDT) ISO 3743-1 Determination of sound power level of noise sources by acoustic sound pressure method - Engineering method for small movable sound sources in reverberant fields - Part 1:

1) The original version quoted ISO 5801:1997: This document has been abolished and replaced by ISO 5801:2007: The quoted content of ISO 5801:2007 is the same as that of ISO 5801:2007:

There are no technical differences in the content cited in ISO 5801:1997:

2) The original version quoted ISO 10302-1:1996: This document has been abolished and replaced by ISO 10302-1:2011: The content cited in ISO 10302-1:2011 There are no technical differences from the cited content of ISO 10302-1:1996:

Note: GB/T 6881.2-2017 Acoustic sound pressure method for determination of sound power level