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

GB/T 34877.3-2017

**Industrial fans -- Determination of fan sound power levels under
standardized laboratory conditions -- Part 3: Enveloping
surface methods**

工业风机 标准实验室条件下风机声功率级的测定 第3部分：包络面法
(English Translation)

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Foreword

GB/T 34877 "Determination of fan sound power level of industrial fan standard laboratory conditions" has included or will include the following four sections.

--- Part 1. General overview;

--- Part 2. Reverberation chamber method;

--- Part 3. Envelope method;

--- Part 4. Sound intensity method.

This section GB/T 34877 Part 3.

This section drafted in accordance with GB/T 1.1-2009 given rules.

This section uses the translation method is equivalent to using ISO 13347-3:2004 "industrial fan standard laboratory fan power level under the test Set Part 3. Envelopment Law. " the documents of our country that are consistent with the corresponding international documents that are normative references in this section are as follows.

--- GB/T 3767-2016 Acoustic sound pressure method for the determination of sound power level and acoustic energy level above the free surface reflection surface above Engineering Act (ISO 3744:2010, IDT);

--- GB/T 17697-2014 Acoustic fans and other ventilation equipment radiated into the pipe sound power pipe method (ISO 5136:2003, IDT);

--- GB/T 21231-2007 small acoustic ventilation devices - Measurement of radiated airborne noise (ISO 10302:1996, IDT);

Industrial ventilators vocabulary and type definition (ISO 13349:1999, IDT).

For ease of use, this section made the following editorial changes.

- a) Added 6.1.3 Measurement uncertainty;
- b) replaced 6 of the 4.3 figures;
- c) delete the preamble and introduction in the original standard;
- d) The definition and description of the physical quantities in this section are given in ISO 13347-1, for the purpose added in 4.4.2 from ISO 13347-1 of the equivalent diameter of pipe D_e annotation, increase in S_0 , ρ and c in 6.1.2 comments, in order to facilitate the use of this standard.

This part is proposed by China Machinery Industry Federation.

This part of the National Fan Standardization Technical Committee (SAC/TC187) centralized.

This part of the drafting unit. Shenyang Blower Institute (Limited), Zhejiang Golden Shield Fan Co., Ltd. Zhejiang fan quality Quantity Inspection Center, Zhejiang Shangfengkefeng Industrial Co., Ltd.

1 Scope

This part of GB/T 34877 applies to the industrial fan as defined in GB/T 1236 and ISO 13349, limited to a particular device is empty Measurement of gas-sound transmission, neither measure the vibration nor measure the vibration effect caused by air-sound transmission sensitivity.

The size of the ventilator to be tested in accordance with this standard is limited only by the actual conditions of the test equipment. Test ventilator for room ruler Dimensions, power and installation requirements are subject to size constraints, test ventilator size and aerodynamic performance. (Small fan can be according to this section or according to Use according to the provisions of ISO 10302 test).

The test setup in this section establishes the laboratory conditions necessary for a successful test, and few of these conditions are met in the field Pieces, and this part is not used for on-site measurement. Remind users who want to use this part of the site for measurements in the field. In these cases, the fan inlet and the exit conditions are not ideal, there may be additional acoustic system effects.

The enveloping surface method may be used to deal with the sound input power and/or open sound output of the fan of the standardized installation type listed in 3.1 Rate level was measured.

For smaller turbines, or for pipe measurements as specified in ISO 5136, it is not advisable to adopt end-point correction methods (see ISO 13347-1:2004 Appendix C) can also get the fan duct sound power level estimation (uncertainty will increase).

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.

GB/T 1236-2000 Industrial Ventilators for Performance Test with Standard Duct (ISO 5801:1997, IDT) ISO 3744 Acoustics - Determination of the approximate free field above the acoustic power reflection surface by acoustic pressure method
Acoustics-Determination of sound power levels of noise sources using sound pressure-Engineer in g method in an essentially free field over a reflecting plane) ISO 5136 Acoustic fans and other ventilators radiating sound into pipes Piping methods
(Acoustics-Determination of sound power radiated into a duct by fans and other air-moving devices -In-duct method) ISO 10302 Acoustics-Method for measurement of radiated air noise in small ventilated installations
(Acoustics-Method for the measurement of air borne noise emitted by small air-moving devices) Industrial ventilators - Determination of ventilator sound power levels under standardized laboratory conditions - Part 1. ISO 13347-1-2004.

General review

(Industrial fans-Determination of fan sound power levels under standardized laboratory conditions-Part 1: General overview) ISO 13349 Industrial Fan Vocabulary and Category Definition (Industrial fans-Vocabulary and definitions of categories

3.1 Overview

Ventilator installation conditions should be consistent with the provisions of GB/T 1236 4 types of devices.