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First edition  
2004-08-15

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## **Industrial fans — Determination of fan sound power levels under standardized laboratory conditions —**

### **Part 1: General overview**

*Ventilateurs industriels — Détermination des niveaux de puissance  
acoustique des ventilateurs dans des conditions de laboratoire  
normalisées —*

*Partie 1: Présentation générale*



Reference number  
ISO 13347-1:2004(E)

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Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 13347-1 was prepared by Technical Committee ISO/TC 117, *Industrial fans*.

ISO 13347 consists of the following parts, under the general title *Industrial fans — Determination of fan sound power levels under standardized laboratory conditions*:

- *Part 1: General overview*
- *Part 2: Reverberant room method*
- *Part 3: Enveloping surface methods*
- *Part 4: Sound intensity method*

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## Introduction

The need for this new International Standard, ISO 13347, has been evident for some time. Whilst a number of national standards exist for the measurement of fan noise, none has received universal acceptance nor may comparisons be readily made.

Forming part of the ISO/TC 117 series of fan standards, this part of ISO 13347 deals with the determination of the fan sound power level appropriate to a particular application. In describing the test and rating procedures, numerous references are made to ISO 5801 as well as to other relevant ISO standards. This general overview should be read in conjunction with the appropriate part of ISO 13347 that specifies, in detail, methods for determining the sound power propagated from a fan in specified installation conditions as a function of frequency.

This part of ISO 13347 primarily deals with the determination of sound power levels of industrial fans used in four types of installations (see Clause 4) for ducted applications.

The test procedures described in this part of ISO 13347 relate to laboratory conditions. The measurement of performance under site conditions is not included. Acoustic system effects can be considerable where the airflow into and out of the fan is not free from swirl, nor fully developed.

This part of ISO 13347 describes methods for determining sound power levels of fans in one-third octave bandwidths and one octave bandwidths.

Data obtained in accordance with this part of ISO 13347 may be used for the following purposes amongst others:

- a) comparison of fans which are similar in size and type;
- b) comparison of fans which are different in size, type, design, speed, etc;
- c) determining whether a fan is suitable for a specified upper limit of sound emission;
- d) scaling of fan noise from one size and speed to another size and speed of the same type of fan;
- e) prediction of sound pressure level in application of the fan;
- f) engineering work to assist in developing machinery and equipment with lower sound emissions.