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## Fans — Vocabulary and definitions of categories

*Ventilateurs — Vocabulaire et définitions des catégories*



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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 13349 was prepared by Technical Committee ISO/TC 117, *Fans*.

This second edition cancels and replaces the first edition (ISO 13349:1999), which has been technically revised.

## Introduction

This International Standard reflects the importance of a standardized approach to the terminology of fans.

The need for an International Standard has been evident for some considerable time. To take just one example, the coding of driving arrangements differs from manufacturer to manufacturer. What one currently calls arrangement no. 1 can be known by another as arrangement no. 3. The confusion for the customer is only too apparent. For similar reasons, it is essential to use standardized nomenclature to identify particular parts of a fan.

Wherever possible, in the interests of international comprehension, this International Standard is in agreement with similar documents produced by Eurovent, AMCA, VDMA (Germany), AFNOR (France) and UNI (Italy). They have, however, been built on where the need for amplification was apparent.

Use of this International Standard will lead to greater understanding among all parts of the air-moving industry. This International Standard is intended for use by manufacturers, consultants and contractors.

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# Fans — Vocabulary and definitions of categories

## 1 Scope

This International Standard defines terms and categories in the field of fans used for all purposes.

It is not applicable to electrical safety.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 5167-1, *Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full — Part 1: General principles and requirements*

ISO 5801:2007, *Industrial fans — Performance testing using standardized airways*

ISO 5802:2001, *Industrial fans — Performance testing in situ*

ISO 13351, *Fans — Dimensions*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5167-1 and ISO 5801 and the following apply

### 3.1 Fans

#### 3.1.1

##### **fan**

rotary-bladed machine that receives mechanical energy and utilizes it by means of one or more impellers fitted with blades to maintain a continuous flow of air or other gas passing through it and whose work per unit mass does not normally exceed 25 kJ/kg

NOTE 1 The term “fan” is taken to mean the fan as supplied, without any addition to the inlet or outlet, except where such addition is specified.

NOTE 2 Fans are defined according to their installation category, function, fluid path and operating conditions.

NOTE 3 If the work per unit mass exceeds a value of 25 kJ/kg, the machine is termed a turbocompressor. This means that, for a mean stagnation density through the fan of  $1,2 \text{ kg/m}^3$ , the fan pressure does not exceed  $1,2 \times 25 \text{ kJ/kg}$ , i.e. 30 kPa, and the pressure ratio does not exceed 1,30 since atmospheric pressure is approximately 100 kPa.

#### 3.1.2

##### **bare shaft fan**

fan without drives, attachments or apperturbances

See ISO 12759.