



SLOVENSKI STANDARD SIST EN ISO 13349:2010

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Nadomešča:
SIST EN ISO 13349:2009

Ventilatorji - Slovar in definicije kategorij (ISO 13349:2010)

Fans - Vocabulary and definitions of categories (ISO 13349:2010)

Einführendes Element - Haupt-Element - Ergänzendes Element (ISO 13349:2010)

Ventilateurs industriels - Vocabulaire et définitions des catégories (ISO 13349:2010)
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| 01.040.23 | Tekočinski sistemi in sestavni deli za splošno rabo (Slovarji) | Fluid systems and components for general use (Vocabularies) |
| 23.120 | Zračniki. Vetrniki. Klimatske naprave | Ventilators. Fans. Air-conditioners |

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EUROPÄISCHE NORM

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July 2010

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Supersedes EN ISO 13349:2008

English Version

Fans - Vocabulary and definitions of categories (ISO 13349:2010)

Ventilateurs - Vocabulaire et définitions des catégories
(ISO 13349:2010)

This European Standard was approved by CEN on 9 June 2010.

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Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN ISO 13349:2010) has been prepared by Technical Committee ISO/TC 117 "Fans" in collaboration with Technical Committee CEN/TC 156 "Ventilation for buildings" the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2011, and conflicting national standards shall be withdrawn at the latest by January 2011.

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

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INTERNATIONAL
STANDARD

ISO
13349

Second edition
2010-07-01

**Fans — Vocabulary and definitions
of categories**

Ventilateurs — Vocabulaire et définitions des catégories

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Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
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ISO 13349:2010(E)**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.

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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*

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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 kg/m³, the fan pressure does not exceed 1,2 × 25 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 aperturbances

See ISO 12759.

ISO 13349:2010(E)**3.1.3****driven fan**

impeller fitted to or connected to a motor, with or without a drive mechanism, a housing or a means of variable speed drive

See ISO 12759.

3.2**air**

abbreviated term for the expression “air or other gas”

3.3**standard air**

by convention, air with a density of 1,2 kg/m³

3.4 Fan installation categories according to the arrangement of ducting

See Figure 1.

3.4.1**installation category A**

installation with free inlet and free outlet with a partition

See ISO 5801 and ISO 5802.

3.4.2**installation category B**

installation with free inlet and ducted outlet

See ISO 5801 and ISO 5802.

3.4.3**installation category C**

installation with ducted inlet and free outlet

See ISO 5801 and ISO 5802.

3.4.4**installation category D**

installation with ducted inlet and ducted outlet

See ISO 5801 and ISO 5802.

3.4.5**installation category E**

installation with free inlet and free outlet without a partition

3.5 Types of fan according to their function**3.5.1****ducted fan**

fan used for moving air within a duct

NOTE This fan can be arranged in installation category B, C or D (see Figures 2, 3, 4 and 5).

3.5.2**partition fan**

fan used for moving air from one free space to another, separated from the first by a partition having an aperture in which or on which the fan is installed

NOTE This fan can be arranged in installation category A (see Figure 6).

3.5.3**jet fan**

fan used for producing a jet of air in a space and unconnected to any ducting

See Figure 7.

NOTE The air jet can be used, for example, for adding momentum to the air within a duct, a tunnel or other space, or for intensifying the heat transfer in a determined zone.

3.5.4**circulating fan**

fan used for moving air within a space which is unconnected to any ducting and is usually without a housing

See Figure 8.

3.5.5**air curtain unit**

air moving device which produces an air curtain

See Figure 30.

3.5.5.1**air curtain**

airstream

directionally controlled airstream, moving across the entire height and width of an opening, which can reduce the infiltration or transfer of air from one side of the opening to the other, and inhibits insects, dust or debris from passing through

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3.6 Types of fan according to the fluid path within the impeller

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3.6.1**centrifugal fan**

fan in which the air enters the impeller with an essentially axial direction and leaves it in a direction perpendicular to this axis

See Figure 2.

NOTE 1 The centrifugal fan is also known as a radial-flow fan.

NOTE 2 The impeller can have one or two inlet(s) and might include a shroud and/or a backplate (centreplate) (see Figure 16).

NOTE 3 The impeller is defined as “backward-curved or inclined”, “radial” or “forward-curved”, depending on whether the outward direction of the blade at the periphery is backward, radial or forward relative to the direction of the rotation (see Figures 9 and 16).

NOTE 4 A centrifugal fan can be of the low-, medium- or high-pressure type, according to the aspect ratio of fan inlet diameter to outside diameter of the impeller. These terms indicate that the pressure generated at a given flow rate is low, medium or high.

NOTE 5 Figure 9 shows a cross-section through a family of impellers having the same inlet diameter. Fans with ratios of fan inlet/outside impeller diameter of greater than approximately 0,63 mm are considered “low aspect ratio”, and lower than approximately 0,4 mm are considered “high aspect ratio”. Medium aspect ratio centrifugal fans are intermediate between these two.

NOTE 6 The impeller diameter and the casing scroll radii increase with the pressure range for which the fan is designed.

NOTE 7 These categories are also affected by the ability to run at the necessary peripheral speed (see 5.2 and Table 1).