Fans - Vocabulary and definitions of categories

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 13349:2010 sisaldab Euroopa standardi EN ISO 13349:2010 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 13349:2010 consists of the English text of the European standard EN ISO 13349:2010.
Standard on kinnitatud Eesti Standardikeskuse 30.09.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 30.09.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 01.07.2010.	Date of Availability of the European standard text 01.07.2010.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

ICS 01.040.23, 23.120

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 13349

July 2010

ICS 01.040.23; 23.120

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.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN ISO 13349:2010: E

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.

This document supersedes EN ISO 13349:2008.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of ISO 13349:2010 has been approved by CEN as a EN ISO 13349:2010 without any modification.

Contents

Page

Foreword iv

Introduction v

1 Scope 1

2 Normative references 1

3 Terms and definitions 1
3.1 Fans — General 1
3.2 Fan installation categories according to the arrangement of ducting 2
3.3 Types of fan according to their function 2
3.4 Fan types according to the fluid path within the impeller 3
3.5 Types of fan according to operating conditions 5
3.6 Fan elements 7

4 Symbols and units 8
4.1 Multiples of primary units 9
4.2 Units of time 9
4.3 Temperature of air or gas 9

5 Fan categories 9
5.1 General 9
5.2 Suitability for the fan pressure 9
5.3 Suitability of construction 10
5.4 Drive arrangements 12
5.5 Inlet and outlet conditions 16
5.6 Method of fan control 16
5.7 Designation of direction of rotation and position of parts of the fan assembly 17
5.8 Characteristic dimensions and component parts 18

Annex A (informative) **Examples** 41

Bibliography 43

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.

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 kg/m^3, the fan pressure does not exceed $1{,}2 \times 25$ 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 apperturbances

See ISO 12759.