

# SVENSK STANDARD

## SS-EN ISO 9972:2015



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### **Byggnaders termiska egenskaper – Bestämning av byggnaders lufttäthet – Tryckprovningmetod (ISO 9972:2015)**

### **Thermal performance of buildings – Determination of air permeability of buildings – Fan pressurization method (ISO 9972:2015)**

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Denna standard ersätter SS-EN 13829, utgåva 1.

The European Standard EN ISO 9972:2015 has the status of a Swedish Standard. This document contains the official English version of EN ISO 9972:2015.

This standard supersedes the Swedish Standard SS-EN 13829, edition 1.

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EUROPEAN STANDARD

**EN ISO 9972**

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2015

ICS 91.120.10

Supersedes EN 13829:2000

English Version

## Thermal performance of buildings - Determination of air permeability of buildings - Fan pressurization method (ISO 9972:2015)

Performance thermique des bâtiments - Détermination de la perméabilité à l'air des bâtiments - Méthode de pressurisation par ventilateur (ISO 9972:2015)

Wärmetechnisches Verhalten von Gebäuden - Bestimmung der Luftdurchlässigkeit von Gebäuden - Differenzdruckverfahren (ISO 9972:2015)

This European Standard was approved by CEN on 20 June 2015.

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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**



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## **European foreword**

This document (EN ISO 9972:2015) has been prepared by Technical Committee ISO/TC 163 "Thermal performance and energy use in the built environment" in collaboration with Technical Committee CEN/TC 89 "Thermal performance of buildings and building components" the secretariat of which is held by SIS.

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of an identical text or by endorsement, at the latest by March 2016, and conflicting national standards shall be withdrawn at the latest by March 2016.

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 13829:2000.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

### **Endorsement notice**

The text of ISO 9972:2015 has been approved by CEN as EN ISO 9972:2015 without any modification.

## Introduction

The fan-pressurization method is intended to characterize the air permeability of the building envelope or parts thereof. It can be used, for example,

- a) to measure the air permeability of a building or part thereof for compliance with a design air-tightness specification,
- b) to compare the relative air permeability of several similar buildings or parts of buildings, and
- c) to determine the air-leakage reduction resulting from individual retrofit measures applied incrementally to an existing building or part of building.

The fan pressurization method does not measure the air infiltration rate of a building. The results of this method can be used to estimate the air infiltration rate and resulted heat load by means of calculation.

Other methods, like tracer gas, are applicable when it is desired to obtain a direct measurement of the air infiltration rate. A single tracer gas measurement, however, gives limited information on the performance of ventilation and infiltration of buildings.

The fan-pressurization method applies to measurements of air flow through the construction from outside to inside or vice versa. It does not apply to air flow measurements from outside through the construction and back to outside.

The proper use of this International Standard requires knowledge of the principles of air flow and pressure measurements. Ideal conditions for the test described in this International Standard are small temperature differences and low wind speeds. For tests conducted in the field, it needs to be recognized that field conditions can be less than ideal. Nevertheless, strong winds and large indoor-outdoor temperature differences are to be avoided.

# Thermal performance of buildings — Determination of air permeability of buildings — Fan pressurization method

## 1 Scope

This International Standard is intended for the measurement of the air permeability of buildings or parts of buildings in the field. It specifies the use of mechanical pressurization or depressurization of a building or part of a building. It describes the measurement of the resulting air flow rates over a range of indoor-outdoor static pressure differences.

This International Standard is intended for the measurement of the air leakage of building envelopes of single-zone buildings. For the purpose of this International Standard, many multi-zone buildings can be treated as single-zone buildings by opening interior doors or by inducing equal pressures in adjacent zones.

International Standard does not address evaluation of air permeability of individual components.

## 2 Normative references

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

ISO 7345, *Thermal insulation — Physical quantities and definitions*

## 3 Terms, definitions, and symbols

### 3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 7345 and the following apply.

#### 3.1.1

##### **air leakage rate**

air flow rate across the building envelope

Note 1 to entry: This movement includes flow through joints, cracks, and porous surfaces, or a combination thereof, induced by the air-moving equipment used in this International Standard (see [Clause 4](#)).

#### 3.1.2

##### **building envelope**

boundary or barrier separating the inside of the building or part of the building subject to the test from the outside environment or another building or another part of the building

#### 3.1.3

##### **air change rate**

air leakage rate per internal volume across the building envelope

#### 3.1.4

##### **air permeability**

air leakage rate per the envelope area across the building envelope