

# **Hoonete ventilatsioon. Hoonete energiakasutus. Juhised ventilatsioonisüsteemide kontrollimiseks**

Ventilation for buildings - Energy performance of  
buildings - Guidelines for inspection of ventilation  
systems

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 15239:2007 sisaldab Euroopa standardi EN 15239:2007 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 21.06.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 15239:2007 consists of the English text of the European standard EN 15239:2007.</p> <p>This document is endorsed on 21.06.2007 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b></p> <p>This standard develops the methodology required for the inspection of mechanical and natural ventilation systems in relation to its energy consumption. This standard applies to both residential and non residential buildings. The inspection may include the following issues, in order to determine the energy performance of the building and its associated mechanical / electrical plant: - The system conformity related to the original and subsequent design modifications, actual requirements and the present building state. - Correct operation of the mechanical, electrical or pneumatic components. - Provision of an adequate and pure supply of ventilation air. - The functioning of all the controls involved. - Fan power absorbed and specific fan power. - Building air tightness.</p>	<p><b>Scope:</b></p> <p>This standard develops the methodology required for the inspection of mechanical and natural ventilation systems in relation to its energy consumption. This standard applies to both residential and non residential buildings. The inspection may include the following issues, in order to determine the energy performance of the building and its associated mechanical / electrical plant: - The system conformity related to the original and subsequent design modifications, actual requirements and the present building state. - Correct operation of the mechanical, electrical or pneumatic components. - Provision of an adequate and pure supply of ventilation air. - The functioning of all the controls involved. - Fan power absorbed and specific fan power. - Building air tightness.</p>
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English Version

Ventilation for buildings - Energy performance of buildings -  
Guidelines for inspection of ventilation systems

Ventilation des bâtiments - Performance énergétique des  
bâtiments - Lignes directrices pour l'inspection des  
systèmes de ventilation

Lüftung von Gebäuden - Gesamtenergieeffizienz von  
Gebäuden - Leitlinien für die Inspektion von  
Lüftungsanlagen

This European Standard was approved by CEN on 26 March 2007.

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.

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## Foreword

This document (EN 15239:2007) has been prepared by 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 November 2007, and conflicting national standards shall be withdrawn at the latest by November 2007.

The connections and relations to the different draft standards developed in the EPBD project are presented in the umbrella document of the CEN BT 173.

This standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association (Mandate M/343), and supports essential requirements of EU Directive 2002/91/EC on the energy performance of buildings (EPBD). It forms part of a series of standards aimed at European harmonisation of the methodology for the calculation of the energy performance of buildings. An overview of the whole set of standards is given in CEN/TR 15615, Explanation of the general relationship between various CEN standards and the Energy Performance of Buildings Directive (EPBD) ("Umbrella document").

Attention is drawn to the need for observance of all relevant EU Directives transposed into national legal requirements. Existing national regulations with or without reference to national standards, may restrict for the time being the implementation of the European Standards mentioned in this report.

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, 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.

## Introduction

Energy Performance of Buildings Directive (EPBD) identifies clearly ventilation, in article 2 “Definitions” and 3 “Adoption of a methodology” (for the calculation of the energy performance), as a component of the energy consumption of buildings, such as heating, cooling or lighting. EPBD also mentions in article 4, “Setting of energy performance requirements” that “requirements shall take account of general indoor climate conditions, in order to avoid negative effects such as inadequate ventilation”.

Considering the impact of ventilation on the energy consumption of the buildings, CEN has decided to also develop a methodology concerning the inspection of ventilation systems, as it is made for air conditioning and heating systems, following the requirements of the articles 3, 8 and 9 of EPBD.

The inspection described here, is therefore intended to include all types of ventilation systems mechanical, natural and hybrid (including mechanical and natural ventilation). Starting from the general points that may lead to excessive energy consumption, a list of the corresponding checks according to the nature of the ventilation system is given. Other specific points depending more from the typology of the ventilation system are then detailed. Indications on the frequency of inspection and on the improvements that may appear necessary depending on the results of the diagnostic are also given.

The possibility to introduce classes is given in this standard in order to leave Member States freedom to choose between different objectives and extent of inspection, within a harmonised framework.

All inspection activities undertaken should be subject to compliance with all health and safety requirements for the persons involved.

This standard also complements EN 15240 concerning the inspection of air conditioning systems for the inspection of the ventilation part that is to be performed in relation to 4.2 dealing with mechanical exhaust and/or supply ventilation systems.

## 1 Scope

This standard develops the methodology required for the inspection of mechanical and natural ventilation systems in relation to its energy consumption.

This standard applies to both residential and non residential buildings.

The inspection may include the following issues, in order to determine the energy performance of the building and its associated mechanical / electrical plant:

- The system conformity related to the original and subsequent design modifications, actual requirements and the present building state.
- Correct operation of the mechanical, electrical or pneumatic components.
- Provision of an adequate and pure supply of ventilation air.
- The functioning of all the controls involved.
- Fan power absorbed and specific fan power.
- Building air tightness.

It is not the intention of the standard to provide a full ventilation system audit. Its purpose is to assess its functioning and its impact on energy consumption. It includes recommendations on possible system improvements.

**NOTE** The inspection, performed by an independent person to assess the system performance relating to energy consumption, is different from the maintenance that is performed to the owner's requirements to maintain the optimum system performance.

## 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.

EN 12097, *Ventilation for Buildings — Ductwork — Requirements for ductwork components to facilitate maintenance of ductwork systems*

EN 12792:2003, *Ventilation for buildings — Symbols, terminology and graphical symbols*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12792:2003 and the following apply.

### 3.1

#### **centralised ventilation**

ventilation of a space or spaces within a building by means of supply ductwork, extract ductwork or a combination of both, from a centralized plant room