

Hoonete küttesüsteemid. Hoonete energiasüsteemide, kaasa arvatud taastuvad energiaallikad, standardse majandusliku hinnangu koostamiseks vajalikud andmed

Energy performance of buildings - Economic evaluation procedure for energy systems in buildings

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 15459:2007 sisaldab Euroopa standardi EN 15459:2007 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 18.12.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 15459:2007 consists of the English text of the European standard EN 15459:2007.</p> <p>This document is endorsed on 18.12.2007 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>Käsitlusala:</p> <p>This standard provides a calculation method for the economical issues of heating systems and other systems that are involved in the energy demand and energy consumption of the building. This standard applies to all types of buildings. The fundamental principles and terminology are explained in this standard. The main items of the standard are: - definitions and structure of the types of costs, which shall be taken into account for calculation of the economical efficiency of saving options in buildings; - data needed for definition of costs related to systems under consideration; - calculation method(s); - expression of the result of the economic calculation; - informative annexes indicating default values of e.g. lifetime, costs for repair, costs for maintenance, in order to introduce default values for calculations. This standard is applicable to calculation of economic performance of energy saving options in buildings (e.g. insulation, better performing generators and distribution systems, efficient lighting, renewable sources, combined heat and power).</p>	<p>Scope:</p> <p>This standard provides a calculation method for the economical issues of heating systems and other systems that are involved in the energy demand and energy consumption of the building. This standard applies to all types of buildings. The fundamental principles and terminology are explained in this standard. The main items of the standard are: - definitions and structure of the types of costs, which shall be taken into account for calculation of the economical efficiency of saving options in buildings; - data needed for definition of costs related to systems under consideration; - calculation method(s); - expression of the result of the economic calculation; - informative annexes indicating default values of e.g. lifetime, costs for repair, costs for maintenance, in order to introduce default values for calculations. This standard is applicable to calculation of economic performance of energy saving options in buildings (e.g. insulation, better performing generators and distribution systems, efficient lighting, renewable sources, combined heat and power).</p>
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English Version

Energy performance of buildings - Economic evaluation
procedure for energy systems in buildings

Performance énergétique des bâtiments - Procédure
d'évaluation économique des systèmes énergétiques des
bâtiments

Energieeffizienz von Gebäuden -
Wirtschaftlichkeitsberechnungen für Energiesysteme in
Gebäuden

This European Standard was approved by CEN on 11 August 2007.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document (EN 15459:2007) has been prepared by Technical Committee CEN/TC 228 "Heating systems in buildings", the secretariat of which is held by DS.

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 May 2008, and conflicting national standards shall be withdrawn at the latest by May 2008.

This document 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 calculation of the energy performance of buildings. An overview of the whole set of standards is given in prCEN/TR 15615.

The subjects covered by CEN/TC 228 are the following:

- design of heating systems (water based, electrical etc.);
- installation of heating systems;
- commissioning of heating systems;
- instructions for operation, maintenance and use of heating systems;
- methods for calculation of the design heat loss and heat loads;
- methods for calculation of the energy performance of heating systems.

Heating systems also include the effect of attached systems such as hot water production systems.

All these standards are systems standards, i.e. they are based on requirements addressed to the system as a whole and not dealing with requirements to the products within the system.

Where possible, reference is made to other European or International Standards, a.o. product standards. However, use of products complying with relevant product standards is no guarantee of compliance with the system requirements.

The requirements are mainly expressed as functional requirements, i.e. requirements dealing with the function of the system and not specifying shape, material, dimensions or the like.

The guidelines describe ways to meet the requirements, but other ways to fulfil the functional requirements might be used if fulfilment can be proved.

Heating systems differ among the member countries due to climate, traditions and national regulations. In some cases requirements are given as classes so national or individual needs may be accommodated.

In cases where the standards contradict with national regulations, the latter should be followed.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to: 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

This standard presents a method for economic calculation of the heating systems, relying on data from other systems that may influence the energy demand of the heating system.

This method can be used, fully or partly, for the following applications:

- consider economic feasibility of energy saving options in buildings;
- compare different solutions of energy saving options in buildings (e.g. plant types, fuels);
- evaluate economic performance of an overall design of the building (e.g. trade-off between energy demand and energy efficiency of heating systems);
- assess the effect of possible energy conservation measures on an existing heating system, by economic calculation of the cost of energy use with and without the energy conservation measure.

The user shall refer to other European Standards or to national documents for input data and detailed calculation procedures not provided by this standard, especially regarding dynamic economical calculations, which are not detailed in this standard. The methods to calculate the building heating energy demand are provided by CEN/TC 89 (EN 832, EN ISO 13790) and CEN/TC 228 (EN 15316 series of standards) related to the EPBD (see prCEN/TR 15615).

1 Scope

This standard provides a calculation method for the economical issues of heating systems and other systems that are involved in the energy demand and energy consumption of the building. This standard applies to all types of buildings.

The fundamental principles and terminology are explained in this standard.

The main items of the standard are:

- definitions and structure of the types of costs, which shall be taken into account for calculation of the economical efficiency of saving options in buildings;
- data needed for definition of costs related to systems under consideration;
- calculation method(s);
- expression of the result of the economic calculation;
- informative annexes indicating default values of e.g. lifetime, costs for repair, costs for maintenance, in order to introduce default values for calculations.

This standard is applicable to calculation of economic performance of energy saving options in buildings (e.g. insulation, better performing generators and distribution systems, efficient lighting, renewable sources, combined heat and power).

The scope of this standard is to standardise:

- required inputs;
- calculation methods;
- required outputs

for economic calculations of energy systems related to the energy performance of buildings.

NOTE Sensitivity of results increases with the number of parameters under consideration (e.g. lifetime, interest rates, development of different types of costs). The more parameters one changes when comparing different solutions, the more difficult it is to draw conclusions from the economic results of the calculations.

Economical results are closely related to the specific project under consideration, and no general conclusions should be drawn from any such results.

2 Normative references

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

Not applicable.