

Hoonete küttesüsteemid. Süsteemide energiavajaduse ja süsteemide tõhususe arvutusmeetod. Osa 3.1: Soojaveevarustuse süsteemid hoonetes, vajaduste iseloomustamine

Heating systems in buildings - Method for calculation of system energy requirements and system efficiencies - Part 3.1 Domestic hot water systems, characterisation of needs (tapping requirements)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 15316-3-1:2007 sisaldab Euroopa standardi EN 15316-3-1:2007 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 22.11.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 15316-3-1:2007 consists of the English text of the European standard EN 15316-3-1:2007.</p> <p>This document is endorsed on 22.11.2007 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: This European Standard is part of a set of standards covering methods for calculation of system energy requirements and system efficiencies of heating systems in buildings. In particular this European Standard is one of a number of standards dealing with domestic hot water systems. The scope of this specific part is to standardise the methods for determining the energy needs for domestic hot water. This European Standard covers the domestic hot water needs in buildings. The calculation of the energy needs for domestic hot water applies to a dwelling, a building or a zone of a building. In order to be coherent with calculation methods for space heating systems, emission losses representing taps and control should be taken into account.</p>	<p>Scope: This European Standard is part of a set of standards covering methods for calculation of system energy requirements and system efficiencies of heating systems in buildings. In particular this European Standard is one of a number of standards dealing with domestic hot water systems. The scope of this specific part is to standardise the methods for determining the energy needs for domestic hot water. This European Standard covers the domestic hot water needs in buildings. The calculation of the energy needs for domestic hot water applies to a dwelling, a building or a zone of a building. In order to be coherent with calculation methods for space heating systems, emission losses representing taps and control should be taken into account.</p>
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English Version

Heating systems in buildings - Method for calculation of system energy requirements and system efficiencies - Part 3-1: Domestic hot water systems, characterisation of needs (tapping requirements)

Systèmes de chauffage dans les bâtiments - Méthode de calcul des besoins énergétiques et des rendements des systèmes - Partie 3-1 : Systèmes de production d'eau chaude sanitaire, caractérisation des besoins (exigences relatives au puisage)

Heizungsanlagen in Gebäuden - Verfahren zur Berechnung der Energieanforderungen und Nutzungsgrade der Anlagen - Teil 3-1: Trinkwassererwärmung, Charakterisierung des Bedarfs (Zapfprogramm)

This European Standard was approved by CEN on 18 August 2007.

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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, 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.



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Foreword

This document (EN 15316-3-1:2007) 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 April 2008, and conflicting national standards shall be withdrawn at the latest by April 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.

EN 15316 *Heating systems in buildings — Method for calculation of system energy requirements and system efficiencies* consists of the following parts:

Part 1: General

Part 2-1: Space heating emission systems

Part 2-3: Space heating distribution systems

Part 3-1: Domestic hot water systems, characterisation of needs (tapping requirements)

Part 3-2: Domestic hot water systems, distribution

Part 3-3: Domestic hot water systems, generation

Part 4-1: Space heating generation systems, combustion systems (boilers)

Part 4-2: Space heating generation systems, heat pump systems

Part 4-3: Heat generation systems, thermal solar systems

Part 4-4: Heat generation systems, building-integrated cogeneration systems

Part 4-5: Space heating generation systems, the performance and quality of district heating and large volume systems

Part 4-6: Heat generation systems, photovoltaic systems

Part 4-7: Space heating generation systems, biomass combustion systems

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

This European Standard is one of a number of standards that together describe methods for calculation of system energy requirements and system efficiencies related to domestic hot water systems. In particular this European Standard describes methods for calculation of the energy needs for domestic hot water.

The user needs to refer to other European Standards or to national documents for input data and detailed calculation procedures not provided by this European Standard.

Only the calculation methods are normative. Values necessary to complete the calculations should be given in a national annex. Informative values are given in informative Annex A.

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1 Scope

This European Standard is part of a set of standards covering methods for calculation of system energy requirements and system efficiencies of heating systems in buildings. In particular this European Standard is one of a number of standards dealing with domestic hot water systems.

The scope of this specific part is to standardise the methods for determining the energy needs for domestic hot water. This European Standard covers the domestic hot water needs in buildings.

The calculation of the energy needs for domestic hot water applies to a dwelling, a building or a zone of a building.

In order to be coherent with calculation methods for space heating systems, emission losses representing taps and control should be taken into account.

2 Normative references

Not applicable.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1 auxiliary energy
electrical energy used by technical building systems for heating, cooling, ventilation and/or domestic hot water to support energy transformation to satisfy energy needs

NOTE 1 This includes energy for fans, pumps, electronics etc. Electrical energy input to a ventilation system for air transport and heat recovery is not considered as auxiliary energy, but as energy use for ventilation.

NOTE 2 In EN ISO 9488, the energy used for pumps and valves is called "parasitic energy".

3.2 building
construction as a whole, including its envelope and all technical building systems, for which energy is used to condition the indoor climate, to provide domestic hot water and illumination and other services related to the use of the building

NOTE The term can refer to the building as a whole or to parts thereof that have been designed or altered to be used separately.

3.3 building services
services provided by technical building systems and by appliances to provide indoor climate conditions, domestic hot water, illumination levels and other services related to the use of the building

3.4 calculated energy rating
energy rating based on calculations of the weighted delivered and exported energy of a building for heating, cooling, ventilation, domestic hot water and lighting

NOTE National bodies decide whether other energy uses resulting from occupants' activities such as cooking, production, laundering etc. are included or not. If included, standard input data shall be provided for the various types of building and uses. Lighting is always included except (by decision of national bodies) for residential buildings.