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STN	**Energetická hospodárnosť budov Metóda výpočtu energetických požiadaviek systému a účinnosti systému Časť 5: Akumulačné systémy vykurovania a prípravy teplej vody (bez chladenia), Modul M3-7, M8-7**	**STN EN 15316-5 06 0237**

Energy performance of buildings - Method for calculation of system energy requirements and system efficiencies - Part 5: Space heating and DHW storage systems (not cooling), Module M3-7, M8-7

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 11/25

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English Version

Energy performance of buildings - Method for calculation of system energy requirements and system efficiencies - Part 5: Space heating and DHW storage systems (not cooling), Module M3-7, M8-7

Performance énergétique des bâtiments - Méthode de calcul des besoins énergétiques et des rendements des systèmes - Partie 5 : Systèmes de stockage pour le chauffage et l'eau chaude sanitaire (sans refroidissement), Module M3-7, M8-7

Energetische Bewertung von Gebäuden - Verfahren zur Berechnung der Energieanforderungen und Nutzungsgrade der Anlagen - Teil 5: Raumheizung und Speichersysteme für erwärmtes Trinkwasser (keine Kühlung), Modul M3-7, M8-7

This European Standard was approved by CEN on 6 July 2025.

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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-CENELEC Management Centre has the same status as the official versions.

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

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Ref. No. EN 15316-5:2025 E

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European foreword

This document (EN 15316-5:2025) has been prepared by Technical Committee CEN/TC 228 “Heating systems and water based cooling systems in buildings”, the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by March 2026, and conflicting national standards shall be withdrawn at the latest by March 2026.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 15316-5:2017.

The main changes compared to EN 15316-5:2017 are:

1) inclusion of simultaneous heating of the storage;

2) inclusion of arbitrary layer volume selection;

3) inclusion of additional heat losses due to the pipe internal circulation in storage connections;

4) calculation procedure for method A and B have been reviewed and several changes implemented;

5) Annex A contains a template for the data and parameters used in the standards and Annex B a set of default values. Default values given in Annex B may be overridden by a national annex;

6) the previous Annexes C and D have been withdrawn;

7) inclusion of calculation approach for solving the re-arranging the layer temperatures in method A in determined number of steps.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Introduction

This document is part of a series of standards aiming at international harmonization of the methodology for the assessment of the energy performance of buildings, called “set of EPB standards”.

All EPB standards follow specific rules to ensure overall consistency, unambiguity and transparency.

All EPB standards provide a certain flexibility with regard to the methods, the required input data and references to other EPB standards, by the introduction of a normative template in Annex A and Annex B with informative default choices.

EPB standards deal with energy performance calculation and other related aspects (like system sizing) to provide the building services considered in the EPBD.

CEN/TC 228 deals with water based heating and cooling systems in buildings. Subjects covered by CEN/TC 228 are:

— energy performance calculation for heating and cooling systems;

— inspection of heating systems;

— design of heating systems and water based cooling systems;

— installation and commissioning of heating systems.

This document specifies two methods to take into account the energy performance of storage systems for heating of domestic hot water and/or space heating coupled to generation system(s) producing hot water or using independent energy input to the storage unit. This document presents two methods applicable to the different types of water based storage system and related controls systems:

— method A applies when the hot water is thermally stratified;

— method B applies when the hot water contained in the storage unit(s) is thermally homogeneous.

For the correct use of this document, Annex A specifies the required choices and input data. Default choices and input data are presented in Annex B. In case the standard is used in the context of national or regional legal requirements, mandatory choices may be given at national or regional level for such specific applications, in particular for the application within the context of EU Directives transposed into national legal requirements. These choices can be made available as National Annex or as separate (e.g. legal) document. If the default values and choices in Annex A are not followed due to national regulations, policy or traditions, it is expected that:

— either the national standardization body will consider the possibility to add or include a National Annex in agreement with the template of Annex A;

— or the national or regional authorities will, in the building regulations, reference the standard and prepare data sheets containing the national or regional choices and values, in agreement with the template of Annex A.

This updated standard covers hourly calculation intervals (or shorter).

1 Scope

This document specifies energy performance calculation of water based storage sub-systems used for heating, for domestic hot water or for combination of these.

This document does not apply to sizing or inspection of such storage systems.

Table 1 shows the relative position of this document within the set of EPB standards in the context of the modular structure as set out in EN ISO 52000-1.

NOTE 1 In CEN ISO/TR 52000-2, the same table can be found with, for each module, the numbers of the relevant EPB standards and accompanying Technical Reports that are published or in preparation.

NOTE 2 The modules represent EPB standards, although one EPB standard may cover more than one module and one module may be covered by more than one EPB standard, for instance a simplified and a detailed method respectively. See also Clause 2 and Tables A.1 and B.1.

Table 1 — Position of this document within the modular structure of the set of EPB standards

Overarching			**Building (as such)**		**Technical building systems**										
	Descriptions			**Descriptions**		**Descriptions**	**Heating**	**Cooling**	**Ventilation**	**Humidification**	**Dehumidification**	**Domestic hot water**	**Lighting**	**Building automation and control**	**Electricity production**
sub 1		**M1**	**sub 1**	**M2**	**sub 1**		**M3**	**M4**	**M5**	**M6**	**M7**	**M8**	**M9**	**M10**	**M11**
1	General		**1**	General	**1**	General									
2	Common terms and definitions; symbols, units and subscripts	—	**2**	Building energy needs	**2**	Needs	—	—	—	—	—	—	—		
3	Applications	—	**3**	(Free) Indoor conditions without systems	**3**	Maximum load and power	—	—	—	—	—	—	—		
4	Ways to express energy performance	—	**4**	Ways to express energy performance	**4**	Ways to express energy performance	—	—	—	—	—	—	—	—	—
5	Building functions and building boundaries	—	**5**	Heat transfer by transmission	**5**	Emission and control	—	—	—	—	—	—	—	—	
6	Building occupancy and operating conditions	—	**6**	Heat transfer by infiltration and ventilation	**6**	Distribution and control	—	—	—	—	—	—	—	—	—

Overarching			**Building (as such)**		**Technical building systems**										
	Descriptions			**Descriptions**		**Descriptions**	**Heating**	**Cooling**	**Ventilation**	**Humidification**	**Dehumidification**	**Domestic hot water**	**Lighting**	**Building automation and control**	**Electricity production**
sub 1		**M1**	**sub 1**	**M2**	**sub 1**		**M3**	**M4**	**M5**	**M6**	**M7**	**M8**	**M9**	**M10**	**M11**
7	Aggregation of energy services and energy carriers	—	**7**	Internal heat gains	**7**	Storage and control	**15316-5**	—	—			**15316-5**		—	—
8	Building partitioning	—	**8**	Solar heat gains	**8**	Generation	—	—	—	—	—	—	—	—	—
					8–1	Combustion boilers	—	—	—	—	—	—	—	—	—
					8–2	Heat pumps	—	—	—	—	—	—	—	—	—
					8–3	Thermal solar photovoltaics	—	—	—	—	—	—	—	—	—
					8–4	On-site cogeneration	—	—	—	—	—	—	—	—	—
					8–5	District heating and cooling	—	—	—	—	—	—	—	—	—
					8–6	Direct electrical heater	—	—	—	—	—	—	—	—	—
					8–7	Wind turbines	—	—	—	—	—	—	—	—	—
					8–8	Radiant heating, stoves	—	—	—	—	—	—	—	—	—
9	Calculated Energy Performance	—	**9**	Building dynamics (thermal mass)	**9**	Load dispatching and operating conditions	—	—	—			—		—	
10	Measured energy performance	—	**10**	Measured energy performance	**10**	Measured energy performance	15378-3	—	—	—	—	15378-3	—	—	—
11	Inspection	—	**11**	Inspection	**11**	Inspection	15378-1	—	—	—	—	15378-1	—	—	—
12	Ways to express indoor comfort	—	**12**	–	**12**	BMS								—	
13	External environment conditions	—													

Overarching			Building (as such)		Technical building systems										
	Descriptions			Descriptions		Descriptions	Heating	Cooling	Ventilation	Humidification	Dehumidification	Domestic hot water	Lighting	Building automation and control	Electricity production
sub 1		M1	sub 1	M2	sub 1		M3	M4	M5	M6	M7	M8	M9	M10	M11
14	Economic calculation	15459-1													
NOTE The shaded modules are not applicable.															

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.

EN ISO 7345:2018, *Thermal performance of buildings and building components — Physical quantities and definitions (ISO 7345:2018)*

EN ISO 52000-1:2017, *Energy performance of buildings — Overarching EPB assessment — Part 1: General framework and procedures (ISO 52000-1:2017)*