SLOVENSKI STANDARD
oSIST prEN 16798-3:2023

01-januar-2023

Energijske lastnosti stavb - Prezračevanje stavb - 3. del: Prezračevanje nestanovanjskih stavb - Zahtevane lastnosti za sisteme prezračevanja in klimatizacije prostorov (modula M5-1, M5-4)

Energy performance of buildings - Ventilation for buildings - Part 3: For non-residential buildings - Performance requirements for ventilation and room-conditioning systems (Modules M5-1, M5-4)

Energetische Bewertung von Gebäuden - Lüftung von Gebäuden - Teil 3: Lüftung von Nichtwohngebäuden -Leistungsanforderungen an Lüftungs- und Klimaanlagen und Raumkühlsysteme (Module M5-1, M5-4)

Performance énergétique des bâtiments - Ventilation des bâtiments - Partie 3: Pour bâtiments non résidentiels - Exigences de performances pour les systèmes de ventilation et de climatisation (Modules M5-1, M5-4)

Ta slovenski standard je istoveten z: **prEN 16798-3**

ICS:

91.140.30	Prezračevalni in klimatski sistemi	Ventilation and air-conditioning systems

oSIST prEN 16798-3:2023 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

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ICS 91.120.10; 91.140.30

Will supersede EN 16798-3:2017

English Version

Energy performance of buildings - Ventilation for buildings - Part 3: For non-residential buildings - Performance requirements for ventilation and room-conditioning systems (Modules M5-1, M5-4)

Performance énergétique des bâtiments - Ventilation des bâtiments - Partie 3: Pour bâtiments non résidentiels - Exigences de performances pour les systèmes de ventilation et de climatisation (Modules M5-1, M5-4)

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This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 156.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (prEN 16798-3:2022) has been prepared by Technical Committee CEN/TC 156 "Ventilation for buildings", the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 16798-3:2017.

This document has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association.

In comparison with the previous edition, the following changes have been made:

— New structure to clarify designing and calculation aspects;

— Update of filtration aspects;

— Update of heat recovery aspects and leakages in these systems;

— Aspects of energy performance have been updated;

— Update of definitions of systems;

— Update of SPF definitions and links to EU 327/2014 Regulation;

— An informative Annex C was added for additional design aspects which has been shifted from CEN/TR 16798-4;

— The standard allows a normative national annex.

EN 16798-3:2017 was produced to meet the requirements of Directive 2002/91/EC 16 December 2002 on energy performance of buildings referred to as "EPBD".

This document has been produced to meet the requirements of Directive 2010/31/EU 19 May 2010 on the energy performance of buildings (recast), referred to as "recast EPDB".

For the convenience of Standards users CEN/TC 156, together with responsible Working Group Conveners, have prepared a simple Table below relating, where appropriate, the relationship between the 'EPBD' and 'recast EPBD' standard numbers prepared by Technical Committee CEN/TC 156 "Ventilation for buildings".

EPBD EN Number	Recast EPBD EN Number	Title
EN 15251	EN 16798-1	*Energy performance of buildings — Ventilation for buildings — Part 1: Indoor environmental input parameters for design and assessment of energy performance of buildings addressing indoor air quality, thermal environment, lighting and acoustics (Module M1-6)*
N/A	CEN/TR 16798-2	*Energy performance of buildings — Ventilation for buildings — Part 2: Interpretation of the requirements in EN 16798-1 — Indoor environmental input parameters for design and assessment of energy performance of buildings addressing indoor air quality, thermal environment, lighting and acoustics (Module M1-6)*
EN 13779	EN 16798-3	*Energy performance of buildings — Ventilation for buildings — Part 3: For non-residential buildings — Performance requirements for ventilation and room-conditioning systems (Modules M5-1, M5-4)*
N/A	CEN/TR 16798-4	*Energy performance of buildings — Ventilation for buildings — Part 4: Interpretation of the requirements in EN 16798-3 — For non-residential buildings — Performance requirements for ventilation and room-conditioning systems(Modules M5-1, M5-4)*
EN 15241	EN 16798-5-1	*Energy performance of buildings — Ventilation for buildings — Part 5-1: Calculation methods for energy requirements of ventilation and air conditioning systems (Modules M5-6, M5-8, M6-5, M6-8, M7-5, M7-8) — Method 1: Distribution and generation*
EN 15241	EN 16798-5-2	*Energy performance of buildings — Ventilation for buildings — Part 5-2: Calculation methods for energy requirements of ventilation systems (Modules M5-6.2, M5-8.2) — Method 2: Distribution and generation*
N/A	CEN/TR 16798-6	*Energy performance of buildings — Ventilation for buildings — Part 6: Interpretation of the requirements in EN 16798-5-1 and EN 16798-5-2 — Calculation methods for energy requirements of ventilation and air conditioning systems (Modules M5-6, M5-8, M6-5, M6-8 , M7-5, M7-8)*
EN 15242	EN 16798-7	*Energy performance of buildings — Ventilation for buildings — Part 7: Calculation methods for the determination of air flow rates in buildings including infiltration (Module M5-5)*
N/A	CEN/TR 16798-8	*Energy performance of buildings — Ventilation for buildings — Part 8: Interpretation of the requirements in EN 16798-7 — Calculation methods for the determination of air flow rates in buildings including infiltration — (Module M5-5)*
EN 15243	EN 16798-9	*Energy performance of buildings — Ventilation for buildings — Part 9: Calculation methods for energy requirements of cooling systems (Modules M4-1, M4-4, M4-9) — General*

EPBD EN Number	Recast EPBD EN Number	Title
N/A	CEN/TR 16798-10	*Energy performance of buildings — Ventilation for buildings — Part 10: Interpretation of the requirements in EN 16798-9 — Calculation methods for energy requirements of cooling systems (Module M4-1,M4-4, M4-9) — General*
EN 15243	EN 16798-13	*Energy performance of buildings — Ventilation for buildings — Part 13: Calculation of cooling systems (Module M4-8) — Generation*
EN 15243	CEN/TR 16798-14	*Energy performance of buildings — Ventilation for buildings — Part 14: Interpretation of the requirements in EN 16798-13 — Calculation of cooling systems (Module M4-8) — Generation*
N/A	EN 16798-15	*Energy performance of buildings — Ventilation for buildings — Part 15: Calculation of cooling systems (Module M4-7) — Storage*
N/A	CEN/TR 16798-16	*Energy performance of buildings – Ventilation for buildings – Part 16: Interpretation of the requirements in EN 16798-15 — Calculation of cooling systems (Module M4-7) – Storage*
EN 15239 and EN 15240	EN 16798-17	*Energy performance of buildings — Ventilation for buildings — Part 17: Guidelines for inspection of ventilation and air-conditioning systems (Module M4-11, M5-11, M6-11, M7-11)*
N/A	CEN/TR 16798-18	*Energy performance of buildings — Ventilation for buildings — Part 18: Interpretation of the requirements in EN 16798-17 — Guidelines for inspection of ventilation and air-conditioning systems (Module M4-11, M5-11, M6-11, M7--11)*

Introduction

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

The set of EPB standards follow specific rules to ensure overall consistency, unambiguity and transparency.

The set of 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 template for national default choices in Annex A and with informative default choices in Annex B.

For the correct use of this document, a normative template is given in Annex A to specify these choices. Informative default choices are provided in Annex B.

The main target groups of this document are all the users of the set of EPB standards (e.g. architects, engineers, regulators).

Use by or for regulators: 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. These choices (either the informative default choices from Annex B or choices adapted to national/regional needs, but in any case following the template of this Annex A) can be made available as national Annex or as separate (e.g. legal) document (national data sheet).

NOTE So in this case:

- the regulators will specify the choices;
- the individual user will apply the standard to assess the energy performance of a building, and thereby use the choices made by the regulators.

Topics addressed in this document can be subject to public regulation. Public regulation on the same topics can override the default values in Annex B of this document. Public regulation on the same topics can even, for certain applications, override the use of this document. Legal requirements and choices are in general not published in standards but in legal documents. In order to avoid double publications and difficult updating of double documents, a national Annex may refer to the legal texts where national choices have been made by public authorities. Different national annexes or national data sheets are possible, for different applications.

It is expected, if the default values, choices and references to other EPB standards in Annex B are not followed due to national regulations, policy or traditions, that:

- national or regional authorities prepare data sheets containing the choices and national or regional values, according to the model in Annex A. In this case the national Annex (e.g. NA) refers to this text;
- or, by default, the national standards body will consider the possibility to add or include a national Annex in agreement with the template of Annex A, in accordance to the legal documents that give national or regional values and choices.

Further target groups are parties wanting to motivate their assumptions by classifying the building energy performance for a dedicated building stock.

This document also provides specifications especially for designers, installers, manufacturers, building owners and users, on fan assisted ventilation (see Figure 1), air-conditioning and room-conditioning systems in order to achieve a comfortable and healthy indoor environment in all seasons with acceptable installation and running costs. This document focuses on the system-aspects for typical applications and covers the following:

- aspects important to achieve and maintain a good energy performance in the systems without any negative impact on the quality of the indoor environment;
- definitions of design and performances data.

More information is provided in the Technical Report accompanying this standard (CEN/TR 16798-4).

For the designing use of this document, an informative default Annex providing additional design parameters is given with Annex C. CEN Members are free to use Annex C or supplement this document with their national design parameters in a national foreword.

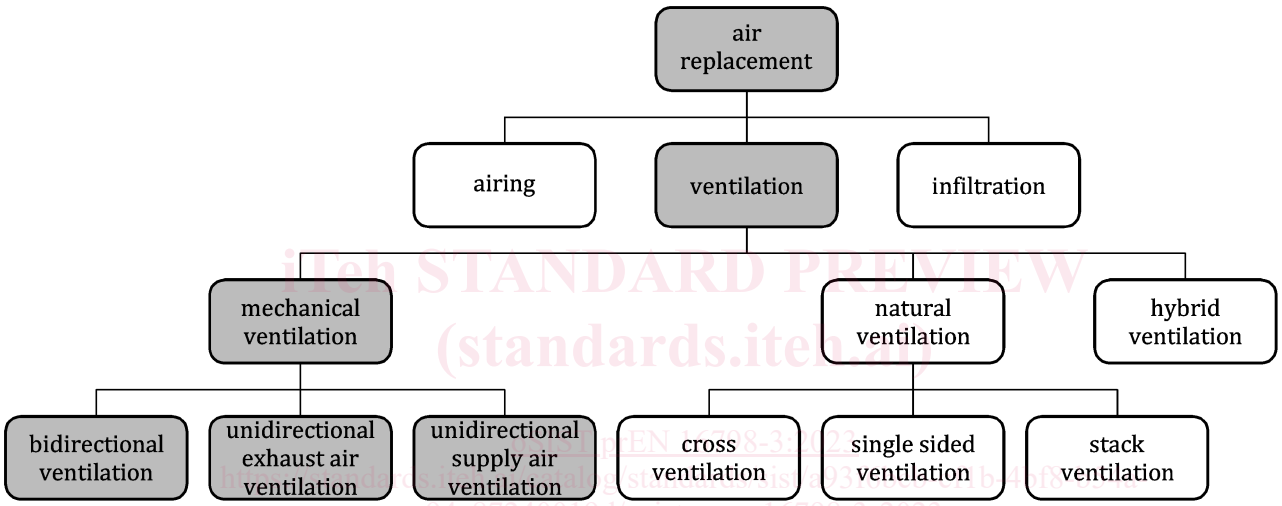

Figure 1 — Generic concept relation of air replacement

1 Scope

This document applies to the design, energy performance of buildings and implementation of ventilation, air conditioning and room conditioning systems for non-residential buildings subject to human occupancy, excluding applications like industrial processes. It focuses on the definitions of the various parameters that are relevant for such systems.

The guidance for design given in this document and accompanying CEN/TR 16798-4 are mainly applicable to mechanical supply and/or exhaust ventilation systems. Natural ventilation systems or natural parts of hybrid ventilation systems are not covered by this document. Reference is made to the WI 00156243 (under development).

Applications for residential ventilation are not covered in this document. Performance of ventilation systems in residential buildings are covered in EN 15665 and CEN/TR 14788.

The classification uses different categories. For some values, examples are given and, for requirements, typical ranges with default values are presented. The default values are given in Annex B and a template for national specification is given in Annex A. Classification should always be appropriate to the type of building and its intended use, and the basis of the classification should be explained if the examples given in the European Standard are not to be used.

NOTE 1 Different standards can express the categories for the same parameters in a different way, and also the category symbols can be different.

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 2 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 3 The modules represent EPB standards, although one EPB standard might cover more than one module and one module might be covered by more than one EPB standard, for instance a simplified and a detailed method respectively. See also Clause 2 and Table A.1 and Table B.1.

Table 1 — Position of this document (in casu M5-1, M5-4), 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	PV, wind, ...
sub 1	M1		sub 1	M2		sub 1		M3	M4	M5	M6	M7	M8	M9	M10	M11
1	General		1	General		1	General			EN 16798-3						
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			EN 16798-3						
5	Building Functions and Building Boundaries		5	Heat Transfer by Transmission		5	Emission 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	PV, wind, ...
sub 1	M1		sub 1	M2		sub 1		M3	M4	M5	M6	M7	M8	M9	M10	M11
6	Building Occupancy and Operating Conditions		6	Heat Transfer by Infiltration and Ventilation		6	Distribution and control									
7	Aggregation of Energy Services and Energy Carriers		7	Internal Heat Gains		7	Storage and control									
8	Building Partitioning		8	Solar Heat Gains		8	Generation and control									
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									
11	Inspection		11	Inspection		11	Inspection									

Overarching			Building (as such)			Technical Building Systems										
	Descriptions			**Descriptions**			**Descriptions**	**Heating**	**Cooling**	**Ventilation**	**Humidification**	**Dehumidification**	**Domestic Hot water**	**Lighting**	**Building automation and control**	**PV, wind, ..**
sub 1	M1		sub 1	M2		sub 1		M3	M4	M5	M6	M7	M8	M9	M10	M11
12	Ways to Express Indoor Comfort					12	BMS									
13	External Environment Conditions															
14	Economic Calculation															
NOTE The shaded modules are not applicable.																

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

NOTE 1 Default references to EPB standards other than EN ISO 52000-1 are identified by the EPB module code number and given in Annex A (normative template) and Annex B (informative default choice).

NOTE 2 Example of EPB module code number: M5-5, or M5-5.1 (if module M5-5 is subdivided), or M5-5/1 (if reference to a specific clause of the standard covering M5-5).

EN 308, *Heat exchangers - Test procedures for establishing performance of air to air heat recovery components*

EN 1822-1, *High efficiency air filters (EPA, HEPA and ULPA) - Part 1: Classification, performance testing, marking*

EN 1886, *Ventilation for buildings - Air handling units - Mechanical performance*

EN 15780, *Ventilation for buildings - Ductwork - Cleanliness of ventilation systems*

EN 12599, *Ventilation for buildings - Test procedures and measurement methods to hand over air conditioning and ventilation systems*

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

EN 13053:2019, *Ventilation for buildings - Air handling units - Rating and performance for units, components and sections*

EN 16798-1:2019, *Energy performance of buildings - Part 1: Indoor environmental input parameters for design and assessment of energy performance of buildings addressing indoor air quality, thermal environment, lighting and acoustics - Module M1-6*

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

EN ISO 7345:2018, *Thermal insulation - Physical quantities and definitions (ISO 7345:2018)*

EN ISO 16890 (all parts), *Air filters for general ventilation*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12792:2003, M1-6 and M1-9, EN ISO 7345:2018, EN ISO 52000-1, and the following apply.

The terms of EN ISO 52000-1 that are indispensable for the understanding of the underlying standard are repeated here.