

# SVENSK STANDARD

## SS-EN 16798-5-2:2017

Fastställt/Approved: 2017-08-22  
Publicerad/Published: 2017-08-22  
Utgåva/Edition: 1  
Språk/Language: engelska/English  
ICS: 91.120.10; 91.140.30

---

### **Byggnaders energiprestanda – Modul M5-6, M5-8 – Ventilation för byggnader -Beräkningsmetoder för energikrav av ventilationssystem – Del 5-2: Fördelning och framställning – metod 2**

**Energy performance of buildings — Modules M5-6, M5-8 —  
Ventilation for buildings — Calculation methods for energy  
requirements of ventilation systems —  
Part 5-2: Distribution and generation (revision of EN 15241) —  
method 2**

This preview is downloaded from [www.sis.se](http://www.sis.se). Buy the entire standard via <https://www.sis.se/std-8028044>

# Standarder får världen att fungera

*SIS (Swedish Standards Institute) är en fristående ideell förening med medlemmar från både privat och offentlig sektor. Vi är en del av det europeiska och globala nätverk som utarbetar internationella standarder. Standarder är dokumenterad kunskap utvecklad av framstående aktörer inom industri, näringsliv och samhälle och befrämjar handel över gränser, bidrar till att processer och produkter blir säkrare samt effektiviserar din verksamhet.*

## Delta och påverka

Som medlem i SIS har du möjlighet att påverka framtida standarder inom ditt område på nationell, europeisk och global nivå. Du får samtidigt tillgång till tidig information om utvecklingen inom din bransch.

## Ta del av det färdiga arbetet

Vi erbjuder våra kunder allt som rör standarder och deras tillämpning. Hos oss kan du köpa alla publikationer du behöver – allt från enskilda standarder, tekniska rapporter och standardpaket till handböcker och onlinetjänster. Genom vår webbtjänst e-nav får du tillgång till ett lättnavigerat bibliotek där alla standarder som är aktuella för ditt företag finns tillgängliga. Standarder och handböcker är källor till kunskap. Vi säljer dem.

## Utveckla din kompetens och lyckas bättre i ditt arbete

Hos SIS kan du gå öppna eller företagsinterna utbildningar kring innehåll och tillämpning av standarder. Genom vår närhet till den internationella utvecklingen och ISO får du rätt kunskap i rätt tid, direkt från källan. Med vår kunskap om standarders möjligheter hjälper vi våra kunder att skapa verklig nytta och lönsamhet i sina verksamheter.

**Vill du veta mer om SIS eller hur standarder kan effektivisera din verksamhet är du välkommen in på [www.sis.se](http://www.sis.se) eller ta kontakt med oss på tel 08-555 523 00.**



# Standards make the world go round

*SIS (Swedish Standards Institute) is an independent non-profit organisation with members from both the private and public sectors. We are part of the European and global network that draws up international standards. Standards consist of documented knowledge developed by prominent actors within the industry, business world and society. They promote cross-border trade, they help to make processes and products safer and they streamline your organisation.*

## Take part and have influence

As a member of SIS you will have the possibility to participate in standardization activities on national, European and global level. The membership in SIS will give you the opportunity to influence future standards and gain access to early stage information about developments within your field.

## Get to know the finished work

We offer our customers everything in connection with standards and their application. You can purchase all the publications you need from us - everything from individual standards, technical reports and standard packages through to manuals and online services. Our web service e-nav gives you access to an easy-to-navigate library where all standards that are relevant to your company are available. Standards and manuals are sources of knowledge. We sell them.

## Increase understanding and improve perception

With SIS you can undergo either shared or in-house training in the content and application of standards. Thanks to our proximity to international development and ISO you receive the right knowledge at the right time, direct from the source. With our knowledge about the potential of standards, we assist our customers in creating tangible benefit and profitability in their organisations.

**If you want to know more about SIS, or how standards can streamline your organisation, please visit [www.sis.se](http://www.sis.se) or contact us on phone +46 (0)8-555 523 00**



Europastandarden EN 16798-5-2 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN 16798-5-2.

Denna standard ersätter SS-EN 15241:2007, utgåva 1 och SS-EN 15241:2007/AC:2011, utgåva 1.

The European Standard EN 16798-5-2 has the status of a Swedish Standard. This document contains the official version of EN 16798-5-2.

This standard supersedes the Swedish Standard SS-EN 15241:2007, edition 1 and SS-EN 15241:2007/AC:2011, edition 1.

© Copyright/Upphovsrätten till denna produkt tillhör SIS, Swedish Standards Institute, Stockholm, Sverige. Användningen av denna produkt regleras av slutanvändarlicensen som återfinns i denna produkt, se standardens sista sidor.

© Copyright SIS, Swedish Standards Institute, Stockholm, Sweden. All rights reserved. The use of this product is governed by the end-user licence for this product. You will find the licence in the end of this document.

*Uppllysningar om sakinnehållet i standarden lämnas av SIS, Swedish Standards Institute, telefon 08-555 520 00. Standarder kan beställas hos SIS Förlag AB som även lämnar allmänna uppllysningar om svensk och utländsk standard.*

*Information about the content of the standard is available from the Swedish Standards Institute (SIS), telephone +46 8 555 520 00. Standards may be ordered from SIS Förlag AB, who can also provide general information about Swedish and foreign standards.*

Denna standard är framtagen av kommittén för Ventilation, SIS/TK 170/AG 03.

Har du synpunkter på innehållet i den här standarden, vill du delta i ett kommande revideringsarbete eller vara med och ta fram andra standarder inom området? Gå in på [www.sis.se](http://www.sis.se) - där hittar du mer information.



EUROPEAN STANDARD

EN 16798-5-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2017

ICS 91.120.10; 91.140.30

Supersedes EN 15241:2007

English Version

Energy performance of buildings - Ventilation for buildings  
- Part 5-2: Calculation methods for energy requirements of  
ventilation systems (Modules M5-6, M5-8, M6-5, M6-8,  
M7-5, M7-8) - Method 2: Distribution and generation

Performance énergétique des bâtiments - Ventilation  
des bâtiments - Partie 5-2 : Méthodes de calcul pour les  
besoins énergétiques des systèmes de ventilation  
(Modules M5-6, M5-8, M6-5, M6-8, M7-5, M7-8) -  
Méthode 2 : Distribution et génération

Energieeffizienz von Gebäuden - Modul M5-6.2, M5-8.2  
- Lüftung von Gebäuden - Berechnungsverfahren für  
den Energiebedarf von Lüftungssystemen - Teil 5-2:  
Verteilung und Erzeugung (Revision von EN 15241) -  
Methode 2

This European Standard was approved by CEN on 27 February 2017.

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

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

**SS-EN 16798-5-2:2017 (E)**

<b>Contents</b>	<b>Page</b>
<b>European foreword.....</b>	<b>4</b>
<b>Introduction .....</b>	<b>7</b>
<b>1 Scope.....</b>	<b>9</b>
<b>2 Normative references.....</b>	<b>12</b>
<b>3 Terms and definitions .....</b>	<b>13</b>
<b>4 Symbols, subscripts and abbreviations.....</b>	<b>14</b>
4.1 Symbols.....	14
4.2 Subscripts.....	14
4.3 Abbreviations .....	15
<b>5 Brief description of the method — Output of the method.....</b>	<b>15</b>
<b>6 Calculation method.....</b>	<b>16</b>
6.1 Output data.....	16
6.2 Calculation time interval and calculation period.....	17
6.2.1 Calculation interval .....	17
6.2.2 Calculation period.....	18
6.3 Input data.....	18
6.3.1 Source of data, general.....	18
6.3.2 Product data.....	18
6.3.3 System design data .....	21
6.3.4 Operating conditions .....	22
6.3.5 Constants and physical data.....	24
6.3.6 Input data from Annex A (Annex B) .....	24
6.4 Calculation procedure .....	24
6.4.1 Applicable time intervals .....	24
6.4.2 Operating conditions calculation .....	24
6.4.3 Energy calculation .....	29
<b>7 Quality control .....</b>	<b>39</b>
<b>8 Compliance check.....</b>	<b>39</b>
<b>Annex A (normative) Input and method selection data sheet — Template.....</b>	<b>40</b>
A.1 General.....	40
A.2 References .....	41
A.3 Input data.....	41
A.3.1 Product description data.....	41
A.3.2 Product technical data .....	42
A.3.3 System design data .....	44
<b>Annex B (informative) Input and method selection data sheet — Default choices.....</b>	<b>48</b>
B.1 General.....	48
B.2 References .....	49

<b>B.3</b>	<b>Input data .....</b>	<b>49</b>
<b>B.3.1</b>	<b>Product description data .....</b>	<b>49</b>
<b>B.3.2</b>	<b>Product technical data .....</b>	<b>50</b>
<b>B.3.3</b>	<b>System design data.....</b>	<b>52</b>
	<b>Bibliography .....</b>	<b>56</b>

**SS-EN 16798-5-2:2017 (E)**

**European foreword**

This document (EN 16798-5-2:2017) 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 February 2018, and conflicting national standards shall be withdrawn at the latest by February 2018.

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

This document supersedes EN 15241:2007.

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

Regarding the modifications that were made with regard to EN 15241:2007, these are listed in the last paragraph in the Introduction.

This standard 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 EPBD”.

EN 15241:2007 was produced to meet the requirements of Directive 2002/91/EC 16 December 2002 on energy performance of buildings referred to as “EPBD”.

For the convenience of Standards users CEN/TC 156, together with responsible Working Group Convenors, 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	FprEN 16798-1 <sup>1)</sup>	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 (revision of EN 15251)
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)

---

1) At voting stage by the time the present text is published.



**SS-EN 16798-5-2:2017 (E)**

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) (revision of EN 13779)
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 (revision of EN 15241)
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, M5-8, M6-5, M6-8, M7-5, M7-8) — Method 2: Distribution and generation (revision of EN 15241)
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 (Modules M5-5) (revision of EN 15242)
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 (revision of EN 15243)
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 (revision of EN 15243)

**SS-EN 16798-5-2:2017 (E)**

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 (revision of EN 15243)
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 (Modules M4-11, M5-11, M6-11, M7-11)

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, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## Introduction

This European Standard 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.

For the correct use of this standard, 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 standard are all the users of the set of EPB standards (e.g. engineers, regulators, programmers).

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 1 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 standard can be subject to public regulation. Public regulation on the same topics can override the default values in Annex B of this standard. Public regulation on the same topics can even, for certain applications, override the use of this standard. 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.

Default references to EPB standards other than EN ISO 52000-1 are identified by the EPB module code number and given in Table B.1. If alternative references are specified, this should be done in Table NA.1 of a National Annex, which should follow the template given in Table A.1.

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).

NOTE 3 The same module code numbering is bound to be used in other EPB standards. This will facilitate, in an individual country, the making of a consistent set of national annexes for each EPB standard and contribute to the overall consistency and transparency.