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NSAI Standards

Irish Standard Recommendation
S.R. CEN/TR 16798-10:2017

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

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National Foreword

S.R. CEN/TR 16798-10:2017 is the adopted Irish version of the European Document CEN/TR 16798-10:2017, 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

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TECHNICAL REPORT

RAPPORT TECHNIQUE

TECHNISCHER BERICHT

CEN/TR 16798-10

June 2017

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English Version

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

Performance énergétique des bâtiments - Ventilation des bâtiments - Partie 10 : Interprétation des exigences de la norme EN 16798-9 - Méthodes de calcul des besoins énergétique des systèmes de refroidissement (Modules M4-1,M4-4, M4-9) - Généralités

Energieeffizienz von Gebäuden - Lüftung von Gebäuden - Teil 10: Interpretation der Anforderungen der EN 16798-9 - Berechnungsmethoden für den Energiebedarf von Kühlsystemen (Module M4-1, M4-4, M4-9) - Allgemeines

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European foreword

This document (CEN/TR 16798-10:2017) has been prepared by Technical Committee CEN/TC 156 "Ventilation for buildings", the secretariat of which is held by BSI.

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

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 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	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)

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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, M 6-5, 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
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

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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)

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Introduction

The set of EPB standards, Technical Reports and supporting tools

In order to facilitate the necessary overall consistency and coherence, in terminology, approach, input/output relations and formats, for the whole set of EPB-standards, the following documents and tools are available:

a) a document with basic principles to be followed in drafting EPB-standards: CEN/TS 16628, *Energy Performance of Buildings — Basic Principles for the set of EPB standards* [3];

b) a document with detailed technical rules to be followed in drafting EPB-standards; CEN/TS 16629, *Energy Performance of Buildings — Detailed Technical Rules for the set of EPB-standards* [4];

c) the detailed technical rules are the basis for the following tools:

   1) a common template for each EPB-standard, including specific drafting instructions for the relevant clauses;

   2) a common template for each technical report that accompanies an EPB standard or a cluster of EPB standards, including specific drafting instructions for the relevant clauses;

   3) a common template for the spreadsheet that accompanies each EPB standard, to demonstrate the correctness of the EPB calculation procedures.

Each EPB-standard follows the basic principles and the detailed technical rules and relates to the overarching EPB-standard, EN ISO 52000-1.

One of the main purposes of the revision of the EPB-standards is to enable that laws and regulations directly refer to the EPB-standards and make compliance with them compulsory. This requires that the set of EPB-standards consists of a systematic, clear, comprehensive and unambiguous set of energy performance procedures. The number of options provided is kept as low as possible, taking into account national and regional differences in climate, culture and building tradition, policy and legal frameworks (subsidiarity principle). For each option, an informative default option is provided (Annex B).

Rationale behind the EPB technical reports

There is a risk that the purpose and limitations of the EPB standards will be misunderstood, unless the background and context to their contents – and the thinking behind them – is explained in some detail to readers of the standards. Consequently, various types of informative content are recorded and made available for users to properly understand, apply and nationally or regionally implement the EPB standards.

If this explanation would have been attempted in the standards themselves, the result is likely to be confusing and cumbersome, especially if the standards are implemented or referenced in national or regional building codes.

Therefore each EPB standard is accompanied by an informative technical report, like this one, where all informative content is collected, to ensure a clear separation between normative and informative contents (see CEN/TS 16629 [4]):

— to avoid flooding and confusing the actual normative part with informative content;

— to reduce the page count of the actual standard; and

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— to facilitate understanding of the set of EPB standards.

This was also one of the main recommendations from the European CENSE project [10] that laid the foundation for the preparation of the set of EPB standards.

This Technical Report

This Technical Report accompanies the EPB standard on the general part of the calculation of the energy performance of cooling systems. It relates to the standard EN 16798-9, which forms part of a set of standards related to the evaluation of the energy performance of buildings (EPB).

The role and the positioning of the accompanied standard in the set of EPB standards is defined in the Introduction to the standard.

Accompanying spreadsheet(s)

Concerning the accompanied standard EN 16798-9, the following spreadsheets were produced:

— on EN 16798-9, for the simplified method;

— on EN 16798-9, for the detailed method;

— on EN 16798-9, for the detailed method, as a master in combination with those on EN 15316-2, EN 15316-3, EN 16798-5-1, EN 16798-7, EN 16798-13 and EN 16798-15.

In this Technical Report, examples of each of these calculation sheets are included.

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1 Scope

This Technical Report refers to the standard EN 16798-9.

It contains information to support the correct understanding, use and national adaptation of this standard.

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.

NOTE More information on the use of EPB module numbers for normative references between EPB standards is given in CEN ISO/TR 52000-2.

EN 16798-9:2017, *Energy performance of buildings — Ventilation for buildings — Part 9: Calculation methods for energy requirements of cooling systems (Module M4-1, M4-4, M4-9) — General*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 16798-9:2017 apply.

NOTE More information on some key EPB terms and definitions is given in CEN ISO/TR 52000-2.

4 Symbols, subscripts and abbreviations

4.1 Symbols

For the purposes of this document, the symbols as mentioned and given in the accompanied EPB standard, EN 16798-9, apply.

More information on key EPB symbols is given in CEN ISO/TR 52000-2.

4.2 Subscripts

For the purposes of this document, the subscripts as mentioned and given in the accompanied EPB standard, EN 16798-9, apply.

More information on key EPB subscripts is given in CEN ISO/TR 52000-2.

4.3 Abbreviations

For the purposes of this document, the abbreviations as mentioned and given in the accompanied EPB standard, EN 16798-9, apply.

More information on key EPB abbreviations is given in CEN ISO/TR 52000-2.

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