Irish Standard Recommendation
S.R. CEN/TR 15378-4:2017

Energy performance of buildings - Heating systems and DHW in buildings - Part 4: Explanation and justification of EN 15378-3, Module M3-10, M8-10

S.R. CEN/TR 15378-4:2017

Incorporating amendments/corrigenda/National Annexes issued since publication:

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This document is based on:	*Published:*
CEN/TR 15378-4:2017	2017-05-03

This document was published under the authority of the NSAI and comes into effect on:	ICS number:
2017-05-21	91.120.10 91.140.10 NOTE: If blank see CEN/CENELEC cover page

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National Foreword

S.R. CEN/TR 15378-4:2017 is the adopted Irish version of the European Document CEN/TR 15378-4:2017, Energy performance of buildings - Heating systems and DHW in buildings - Part 4: Explanation and justification of EN 15378-3, Module M3-10, M8-10

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TECHNICAL REPORT

RAPPORT TECHNIQUE

TECHNISCHER BERICHT

CEN/TR 15378-4

May 2017

ICS 91.120.10; 91.140.10

English Version

Energy performance of buildings - Heating systems and DHW in buildings - Part 4: Explanation and justification of EN 15378-3, Module M3-10, M8-10

Performance énergétique des bâtiments - Performance énergétique mesurée - Partie 4: Explication et justification de l'EN 15378-3, Modules M3-10, M8-10

Heizungsanlagen und Wasserbasierte Kühlanlagen in Gebäuden - Heizungsanlagen und Trinkwarmwasseranlagen in Gebäuden - Teil 4: Begleitender TR zur EN 15378-3 (Messungen der Energieeffizienz)

This Technical Report was approved by CEN on 27 February 2017. It has been drawn up by the Technical Committee CEN/TC 228.

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Ref. No. CEN/TR 15378-4:2017 E

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European foreword

This document (CEN/TR 15378-4:2017) 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.

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

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* [1];

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* [2];

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 a 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-standards follows the basic principles and the detailed technical rules and relates to the overarching EPB-standard, EN ISO 52000-1:2017.

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 high 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 contents are recorded and made available for users to properly understand, apply and nationally 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 [2]),

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

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

— to facilitate understanding of the set of EPB standards.

This was also one of the main recommendations from the European CENSE project [4] that laid the foundation for the preparation of the set of EPB standards.

This Technical Report:

This Technical Report accompanies the standard EN 15378-3:2017 on the assessment of measure measured delivered energy for space heating and domestic hot water preparation.

The first part of this Technical Report, up to Clause 13 and all annexes up to Annex D have the same numbering as EN 15378-3:2017. Each clause in this CEN/TR 15378-4 is related to the same clause in EN 15378-3:2017.

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

Accompanying spreadsheet(s):

Concerning the accompanied standard EN 15378-3:2017, the following spreadsheets were produced:

— one spreadsheet on space heating measured delivered energy assessment using the seasonal data interpolation method (see 6.8);

— one spreadsheet on space heating measured delivered energy assessment using the energy signature method (see 6.9);

— one spreadsheet on domestic hot water measured delivered energy assessment;

— one spreadsheet on boiler efficiency assessment, both combustion efficiency and seasonal efficiency.

In this Technical Report, two examples of space heating measured delivered energy assessment are included.

History of this Technical Report and the accompanied standard:

EN 15378-3:2017 is the first edition of a standard on measured energy performance. It includes provisions already included in several previous standards like EN 15603:2008 (energy signature method) and EN 15378:2007 (measurement of combustion efficiency and estimation of boiler seasonal efficiency) and others.

This Technical Report has been drafted as part of Mandate 480 of the EC to CEN.

References in the text of the standard are given as module codes that are detailed in the annex. This enables flexible references (e.g. to national documents where necessary for local application) and use outside the CEN environment.

1 Scope

This Technical Report refers to EN 15378-3:2017, *Energy performance of buildings — Heating and DHW systems in buildings — Part 3: Measured energy performance, Module M3-10, M8-10*.

It contains information to support the correct understanding, use and national adaptation of EN 15378-3:2017.

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.

CEN/TR 15378-2:2017, *Energy performance of buildings — Heating systems and DHW in buildings — Part 2: Explanation and justification of EN 15378-1, Module M3-11 and M8-11*

EN 15378-3:2017, *Energy performance of buildings — Heating and DHW systems in buildings — Part 3: Measured energy performance, Module M3-10, M8-10*

EN ISO 7345:1995, *Thermal insulation — Physical quantities and definitions (ISO 7345:1987)*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 7345:1995, EN ISO 52000-1:2017 and EN 15378-3:2017 apply.

NOTE There are no new terms in this Technical Report.

Most terms used in EN 15378–3:2017, such as:

— space heating;

— gross and net calorific value;

— external temperature;

— energy carrier;

— delivered energy;

and others are already defined in EN ISO 52000-1:2017 and are not repeated.

The definitions of assessment period, measurement interval and measurement period have been repeated because they are fundamental for the correct understanding of this standard.