



NSAI
Standards

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

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National Foreword

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TECHNICAL REPORT

CEN/TR 15378-4

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**Energy performance of buildings - Heating systems and
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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)

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Contents		Page
European foreword		5
Introduction		6
1	Scope	8
2	Normative references	8
3	Terms and definitions	8
4	Symbols, subscripts and abbreviations	9
4.1	Symbols	9
4.2	Subscripts	9
4.3	Abbreviations	9
5	Description of the methods	9
5.1	Available procedures	9
5.2	Assessment of measured heating and domestic hot water delivered energy	9
5.2.1	Output of the method	9
5.2.2	Optional procedures	9
5.2.3	Validation of measured rating	10
5.2.4	Correction according to standard use and/or climate	10
5.3	Assessment of measured boiler combustion efficiency	11
5.4	Assessment of boiler seasonal efficiency	11
5.5	Domestic hot water system efficiency	11
5.6	Other measurement methods	11
6	Measured delivered energy for heating and domestic hot water	12
6.1	Rationale and output data	12
6.2	Assessment and measurement periods and intervals	14
6.3	Input data	15
6.3.1	Data on delivered energy carrier amount	15
6.3.2	Constants and physical data	15
6.4	Assessment of delivered and exported energy carriers amount	15
6.4.1	General	15
6.4.2	Metered energy carriers (electricity, gas, district heating and cooling)	16
6.4.3	Liquid fuels in tanks or small containers	16
6.4.4	Solid fuels	16
6.4.5	Fuel with hour counter	16
6.4.6	Electrical energy measurement	16
6.5	Data about boundary conditions	17
6.5.1	General	17
6.5.2	Climatic data	17
6.5.3	Building use schedule and internal temperature	17
6.5.4	Domestic hot water used	17
6.6	Converting to delivered and exported energy	17
6.7	Preparation of data	18
6.7.1	Reporting raw data	18
6.7.2	Validating raw data for measured delivered energy normalization	18
6.8	Interpolation of seasonal measurements	18
6.8.1	Data preparation	18

6.8.2	Separating uses and services.....	18
6.8.3	Space heating delivered energy correction for indoor temperature and climate	18
6.8.4	Seasonal values.....	19
6.8.5	Interpolation of seasonal delivered energy	19
6.8.6	Measured specific heat loss H_{meas}	20
6.8.7	Validation criteria	20
6.9	Energy signature method	20
6.9.1	Data preparation and rationale of the method.....	20
6.9.2	Linear regression in Heating mode.....	21
6.9.3	Linear regression in non-heating mode	21
6.9.4	Heating start external temperature.....	21
6.9.5	Estimated internal temperature during heating season	21
6.9.6	Standardized average power during the heating season.....	21
6.9.7	Standardized delivered energy during the heating season.....	21
6.9.8	Validation criteria	22
6.10	Special cases	22
6.10.1	Introduction.....	22
6.10.2	Multi-fuel installations	22
6.10.3	Heat meters are available.....	22
6.10.4	District heating.....	22
6.10.5	Variable heat generation efficiency	22
6.11	Plain reporting.....	23
6.12	Exported energy.....	23
6.13	Reporting.....	23
6.14	Limits of application	23
6.15	Linear regression sub procedure.....	23
6.16	Examples.....	23
7	Boiler combustion efficiency.....	24
7.1	Output data	24
7.2	Input data	24
7.3	Measuring procedure	24
7.4	Combustion efficiency calculation.....	24
7.4.1	General	24
7.4.2	Sensible heat loss factor $\alpha_{ch,on}$	24
7.4.3	Condensation latent heat recovery factor α_{cond}	24
7.5	Reporting.....	25
8	Assessment of measured heating generation efficiency	25
8.1	Output data	25
8.2	Input data	25
8.3	Available methods.....	26
8.3.1	Boiler cycling method	26
8.3.2	Total stand-by losses method	26
8.4	Boiler β_{cmb} (average load) determination	26
8.4.1	Introduction.....	26
8.4.2	Fuel use method	26
8.4.3	Operation hour counter method	26
8.5	Estimation of loss factors.....	26
8.5.1	Losses through the envelope (radiation losses).....	26
8.5.2	Losses through the chimney with burner off.....	26
8.5.3	Total stand-by losses	26
8.6	Reporting.....	27
9	Assessment of measured domestic hot water delivered energy and system efficiency	27

CEN/TR 15378-4:2017 (E)

9.1	Domestic hot water delivered energy	27
9.1.1	Domestic hot water volume measurement not available.....	27
9.1.2	With water measurement	27
9.2	Domestic hot water efficiency	27
9.3	Reporting	27
10	Assessment of measured heat pump efficiency	27
11	Assessment of the energy performance for other services.....	27
12	Quality control	27
13	Compliance check.....	28
14	Method selection	28
15	Worked out examples.....	28
16	Application range.....	28
16.1	Energy performance assessment	28
16.2	Inspection	28
16.3	Recommendations (tailored rating)	29
17	Regulation use.....	29
18	Information on the accompanying spreadsheet.....	29
19	Results of the validation tests.....	29
20	Quality issues.....	29
20.1	Assessment of measured delivered energy	29
20.2	Combustion efficiency	29
20.3	Seasonal efficiency estimation	29
Annex A	(informative) Template for choices, input data and references.....	30
Annex B	(informative) Default choices, input data and references	31
Annex C	(informative) Template for the input data preparation and presentation.....	32
Annex D	(informative) Calculation flowcharts	33
Annex E	(informative) Calculation examples.....	35
E.1	Seasonal data interpolation	35
E.1.1	General.....	35
E.1.2	Source data	35
E.1.3	Input data.....	39
E.1.4	Calculation	41
E.1.5	Output data.....	45
E.1.6	Regression plot	46
E.2	Energy signature method.....	47
E.2.1	General.....	47
E.2.2	Source data	47
E.2.3	Input data.....	47
E.2.4	Calculation	49
E.2.5	Output data.....	53
E.2.6	Regression plot	54
Annex F	(informative) History of this document	55
Bibliography	56

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.

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.

CEN/TR 15378-4:2017 (E)

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.

CEN/TR 15378-4:2017 (E)

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.

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