



BSI Standards Publication

Energy performance of buildings — Heating systems and DHW in buildings

Part 1: Inspection of boilers, heating systems and DHW, Module M3-11, M8-11

National foreword

This British Standard is the UK implementation of EN 15378-1:2017. It supersedes BS EN 15378:2007, which is withdrawn.

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A list of organizations represented on this committee can be obtained on request to its secretary.

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European foreword

This document (EN 15378-1:2017) 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.

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of an identical text or by endorsement, at the latest by November 2017, and conflicting national standards shall be withdrawn at the latest by November 2017.

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

This document supersedes EN 15378:2007.

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

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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 group of this standard 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 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.

Further target groups are users of the voluntary common European Union certification scheme for the energy performance of non-residential buildings (EPBD art.11.9) and any other Pan EU parties wanting to motivate their assumptions by classifying the building energy performance for a dedicated building stock

More information is provided in the Technical Report accompanying this standard (CEN/TR 15378-2).

This document specifies procedures to be used for the inspection and assessment of energy performance and sizing of heat generators and accessible parts of heating systems to provide advice to

users on the replacement of heat generators, other modifications to the heating system and on alternative solutions as required by article 14 of Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings (recast).

This standard includes, either in the normative text or in the informative annexes:

- inspection procedures;
- calculation procedures;
- sample reports;
- advice criteria.

Procedures and methodologies defined in this standard are not intended to provide a full energy audit of the heating system. They are intended to:

- support identification of areas of possible improvements;
- define criteria to produce reliable advice on possible improvements of the energy performance of heat generators and heating systems through replacement of components or other measures;
- support advice on the sizing of the boiler and heating system.

Any replacement of appliances or modification of the heating system following advice should be designed according to appropriate methodologies. This may require additional input and investigation for detailed design and final check of economical effectiveness.

Clauses 6 and 7 describe separately the inspection procedures related to:

- inspection of the heat generators;
- inspection of the entire heating systems

Clause 7 should be applied to comply with requirements of article 14 of Directive 2010/31/EU of the European Parliament.

This standard introduces inspection levels by which different levels of inspection accuracy and detailed inspection requirements can be determined, because:

- the same inspection procedure and level of details cannot reasonably be required for any kind and/or any size of heat generators and heating systems;
- there are currently significant differences among EU Member States with respect to:
 - heating systems typologies;
 - legal and/or standard requirements;
 - maintenance and inspection practices.

Alternative and/or optional partial inspection procedures and measurement methods for heat generators and heating system parts are described in the accompanying Technical Report.

Inclusion/omission/alternatives of individual inspection items as well as border lines between levels are specified through tables compiled according to the template given in normative Annex A. If no specific national specification is available, a default specification of inspection levels is given in informative Annex B. Specifications given nationally may refer either to methodologies given in the

accompanying technical report to this standard or to suitable existing national standards and procedures.

This standard has been drafted to support inspection required by Directive 2010/31/EU of the European Parliament and of the council of 19 May 2010 on the energy performance of buildings (recast) that is *“a regular inspection of the accessible parts of systems used for heating buildings, such as the heat generator, control system and circulation pump(s), with boilers of an effective rated output for space heating purposes of more than 20 kW”*.

This does not exclude the possibility to use this standard for other types of generation devices (e.g. warm air heaters, heat pumps, thermal solar, CHP, etc.) and to domestic hot water systems if appropriate additional levels are defined.

Detailed information on each clause of this standard, the rationale of the default and suggested choices and all other supporting information (such as examples) are included in CEN/TR 15378-2.

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 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).

1 Scope

This document specifies inspection procedures for the assessment of energy performance of existing boilers and heating systems.

Heat generators types covered by this standard are:

- boilers for heating, domestic hot water or both;
- gas, liquid, solid fuel fired combustion boilers;
- electrically driven and gas driven heat pumps;
- thermal solar systems for domestic hot water, heating or both;
- other heat generators types, such as cogeneration units.

Parts of heating systems covered by this standard are:

- heat generators, including generation control;
- heating distribution network, including associated components and controls;
- heating emitters, including components and controls;
- space heating control system;
- heat storage and associated components;
- domestic hot water production system.

This standard covers issues related to energy conservation and environmental performance.

Table 1 shows the relative position of this standard within the set of EPB standards in the context of the modular structure as set out in EN ISO 52000-1.

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