PD CEN/TS 16629:2014

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Energy Performance of Buildings — Detailed Technical Rules for the set of EPB-standards

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National foreword

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

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Energy Performance of Buildings - Detailed Technical Rules for the set of EPB-standards

Performance énergétique des bâtiments - Règles techniques détaillées pour la série de normes sur la performance énergétique des bâtiments

Energieeffizienz von Gebäuden - Detaillierte technische Regeln für das EPB-Normenpaket

This Technical Specification (CEN/TS) was approved by CEN on 10 May 2014 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (CEN/TS 16629:2014) has been prepared by Technical Committee CEN/TC 371 "Energy Performance of Buildings Project Group", the secretariat of which is held by NEN.

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 (Mandate M/480, [2]).

This document supports requirements of EU Directive 2010/31/EC on the energy performance of buildings (EPBD). It forms part of a series of standards aimed at European harmonization of the methodology for the calculation of the energy performance of buildings.

Directive 2010/31/EU recasting the Directive 2002/91/EC on energy performance of buildings (EPBD) [1] promotes the improvement of the energy performance of buildings within the European Union, taking into account all types of energy uses (heating, lighting, cooling, air conditioning, ventilation) and outdoor climatic and local conditions, as well as indoor climate requirements and cost effectiveness (Article 1).

The Directive requires Member States to adopt measures and tools to achieve the prudent and rational use of energy resources. In order to achieve those goals, the EPBD requires increasing energy efficiency and the enhanced use of renewable energies in both new and existing buildings. One tool for this is the application by Member States of minimum requirements on the energy performance of new buildings and for existing buildings that are subject to major renovation, as well as for minimum performance requirements for the building envelope if energy-relevant parts are replaced or retrofitted. Other tools are energy certification of buildings, inspection of boilers and air-conditioning systems.

NOTE The use of European Standards increases the accessibility, transparency and objectivity of the energy performance assessment in the Member States facilitating the comparison of best practices and supporting the internal market for construction products. The use of EPB-standards for calculating energy performance, as well as for energy performance certification and the inspection of heating systems and boilers, ventilation and air-conditioning systems will reduce costs compared to developing different standards at national level.

The first mandate to CEN to develop a set of standards to support the EPBD (M/343) resulted in the successful publication of several EPBD related CEN standards in 2007-2008. The second mandate to CEN (M/480, [2]) was issued to review the Mandate M/343 as the recast of the EPBD raises the need to revisit the standards and reformulate and add standards so that they become on the one hand unambiguous and compatible, and on the other hand a clear and explicit overview of the choices, boundary conditions and input data that need to be defined at national or regional level. Such national or regional choices remain necessary, due to differences in climate, culture and building tradition, policy and legal frameworks. Consequently, the current set of EPBD related standards had to be improved and expanded on the basis of the recast of the EPBD. EPB-standards should be flexible enough to allow for necessary national and regional differentiation and facilitate Member States implementation and the setting of requirements by the Member States.

The set of EBP-standards should consist of a comprehensive package of Technical Specifications and European Standards that are manageable and user-friendly for regulators, product Technical Specification drafters, drafters of European Technical Approval Guidelines/Common Understanding Assessment Procedures (ETAGs/CUAPs), producers, notified bodies and users.

The set-up of a coherent set EPB-standards under Mandate M/480 was split into two phases:

— the development of (and agreement on) the underlying basic principles and detailed technical rules for drafting EPB-standards providing a coherent modular structure and an overarching EPB-standard following these rules and principles;

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— on the basis of the results of phase 1: the preparation/revision of the complete set of EPB- standards.

The basic principles and technical rules were developed to ensure the necessary overall consistency in terminology, approach, input/output relations and formats in all EPB-standards In these rules and specifications requirements from competent national legal authorities of EU and EFTA Member States (aggregated by the CAP-EDMC liaison committee) were taken into account.

It is anticipated that during phase 2 additions or modifications of the overarching EPB-standard and/or basic principles and detailed technical rules might be needed.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this Technical Specification: 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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Introduction

This Technical Specification has been developed to guide the revisions under M/480 phase 2 as well as all future work on EPB-standards. In order to facilitate coordination, consistency and coherence of EPB-standards, the following tools are available:

a) a Technical Specification on the basic principles to be followed in drafting EPB-standards;

b) a Technical Specification on the detailed technical rules to be followed in drafting EPB-standards (this document);

c) in addition, the following TC/371 documents are available;

   1) a template for the EPB-standards, including reminders of applicable rules in the relevant clauses;

   2) a template for the EPB Technical Reports that shall accompany each EPB standard;

   3) a spread sheet template to be used to demonstrate the correctness of the standardized calculation procedures.

All work on (intended) EPB-standards will follow the basic principles and the detailed technical rules and relate to the overarching EPB-standard, (FprEN 15603).

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1 Scope

This Technical Specification provides guidance in the form of detailed technical rules based on the basic principles, both for the overarching standard and for each standard within the set of EPB-standards.

These detailed technical rules give practical rules on the following subjects for EPB-standards:

— the standardization process, including collaborations and consultations;

— the application range of the standards;

— common general organization of each standard and the national implementation;

— the overarching structure for the energy performance assessment;

— common model(s) and editorial rules for each standard;

— common quality aspects for each 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.

FprEN 15603:2014, *Energy Performance of Buildings – Overarching standard EPB*

CEN/TS 16628, *Energy Performance of Buildings – Basic Principles for the set of EPB-standards*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in FprEN 15603:2014 and the following apply.

3.1
EPB-standard
standard being part of a set of standards providing a coherent methodology for assessing the energy performance of buildings using a holistic approach

Note 1 to entry: EPB-standards are developed and/or revised in accordance with and have to comply with the basic principles and detailed technical rules developed by CEN/TC 371 under Mandate M/480 following the Energy Performance of Buildings Directive (2010/31/EU, EPBD recast). The term EPB-standard may apply to either EN standards or to EN ISO standards.

Note 2 to entry: EPB-standards are drafted on the basis of relevant existing International, European and National standards and the work of the CEN-CENELEC Product TCs. They have to take into account EU Directives (other than the EPBD), such as the Construction Products Directive (89/106/EEC), the revised Labelling Directive 2010/30/EU, the Energy related Products Directive 2009/125/EC, the Energy End Use Efficiency and Energy Services Directive (2006/32/EC), the INSPIRE Directive (2007/2/EC) and Mandate M324 and the Boiler Efficiency Directive(92/42/EC).

4 Symbols, units and subscripts

For the purposes of this document, all symbols, units and subscripts provided in the overarching EPB-standard FprEN 15603:2014 apply.

NOTE No specific symbols are used in this Technical Specification.

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5 General

Any standard which is intended to be part of the set of EPB-standards shall comply with CEN drafting rules and with the additional requirements given in the Technical Specification.

Each EPB-standard shall be accompanied by:

— a Technical Report in accordance with 10.2;

— a spreadsheet complying with requirements given in 10.3.

There shall be a clear distinction between normative text and informative text:

— the text of any assessment related CEN EPB-standard shall contain only the assessment procedures and all related provisions (i.e. source of data, calculation options);

— all explanations, informative text, validation results and examples shall be given in the accompanying Technical Report.

The checklist given in Annex A shall be used to give evidence of the fulfilment of the requirements given in this CEN Technical Specification.

This CEN Technical Specification includes both editorial rules and technical rules about the contents of each standard in the CEN EPB package.

The detailed rules specified in this document apply to both new EPB-standards and the revision of already existing standards to be included into the set of EPB-standards.

6 Standardization process

6.1 General

NOTE CEN/TS 16628:2014, 6.1, gives an overview of the coordination process to safeguard coherence when developing EPB-standards.

This Technical Specification deals with aspects of the standardization process that are specific for EPB-standards.

All EPB-standards shall be developed following the common standardization procedures, comply with CEN/CENELEC and ISO/IEC drafting rules [6] [7] and the additional requirements set by CEN/TS 16628 and stated in this Technical Specification (CEN/TS 16629).

For each work item, the responsible Working Group shall deliver a package consisting of:

— the specific standard to be included in the EPB-standards package;

— an accompanying Technical Report with informative text essential for the correct understanding and application of the standard;

— the accompanying spread sheet;

— the checklist given in Annex A, completed to give evidence of implementation of CEN/TS 16628 and CEN/TS 16629 rules.

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6.2 Coordination of EPB-standards

6.2.1 General

EPB-standards are required for technologies specified in the Technical Report accompanying FprEN 15603. These standards have to be set up/maintained by respective competent TCs.

The modular structure defined in the overarching EPB-standard (FprEN 15603) shall be used to identify these standards. Each individual EPB-standard may cover one module, part of it or a number of modules defined in FprEN 15603:2014, Clause 6.

In order to maintain coherence between EPB-standards, coordination considering the use of terms, symbols, and time steps is essential. For this, standard developers should contact CEN/TC 371 prior to publishing the draft EPB-standard for public enquiry. CEN/TC 371 is the horizontal TC responsible for the coherence of EPB-standards. In order to safeguard whether the terms for accepting a standard within the EPB-standard package, checking by CEN/TC 371 is essential.

In order to safeguard the coherence between EPB-standards, coordination between the competent TC(s) and CEN/TC 371 is required if one of the calculation procedures in the set of EPB-standards requires one of the following:

— data that is not defined by a product standard;

— data for which no standardized measurement procedure is available;

— data that is not consistent with requirements from related EU Directives [1)].

6.2.2 Coordination with product standards

In defining calculation procedures, product data already defined in the relevant CEN/TC shall be used whenever appropriate. Each WG shall check the availability of appropriate input data in the relevant EN product standards.

6.2.3 Coordination between CEN and ISO

NOTE 1 See CEN/TS 16628 for the basic principles for developing EN ISO EPB standards.

Having different CEN and ISO standards would harm both CEN and ISO as well as the users of the standards. Therefore, the utmost will have to be done to solve problems and difficulties that might be at hand, instead of taking the easy way out and going separate ways.

Practical solutions for taking into account divergences between ISO and CEN (if unavoidable) within one combined EN ISO standard are for instance:

— Where necessary, different options can be given in a standard, such as an option required by “Europe” and an option required by another country or region. In the annex intended to specify the options chosen by national or regional authorities, the CEN option can be prescribed for use within the CEN area.

NOTE 2 However, it is likely that the majority of such choices will be needed to satisfy different needs within Europe and maybe not many extra options will be needed to satisfy different needs between Europe and the rest of the world.

[1]) Such as the Construction Products Directive (89/106/EEC), the revised Labelling Directive 2010/30/EU, the Energy related Products Directive 2009/125/EC, the Energy End Use Efficiency & Energy Services Directive (2006/32/EC), the INSPIRE Directive (2007/2/EC) and the Boiler Efficiency Directive(92/42/EC).

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— In case of a combined EN ISO standard, there may be a need for specific parallel routes in referring to other EN and respectively ISO standards, in order to take into account existing European and legal environments while maintaining global relevance. For this purpose, a normative annex can be provided with a tabulated list of the references for the “CEN area”, containing references to specific CEN standards and a parallel list of references applicable outside the “CEN area”, containing references to ISO standards (if different from CEN), or to national standards where ISO standards are not (yet) available.

NOTE 3 EN ISO 13790:2008, Annex A, already contains such a normative annex.

NOTE 4 CEN/TS 16628:2014, Annex A, contains an outline for such a normative annex.

6.2.4 Dynamic interaction with national authorities

NOTE See CEN/TS 16628:2014, 6.2.

It is expected that during phase 2 of the preparation of the EPB-standards, adjustments of the overarching standard and basic principles and technical rules might be necessary as result of the experiences with the preparation of the individual standards. This may again affect the Member States expectations.

A regular information exchange will be maintained between the CEN/TC 371 team and representatives from the EU and EFTA Member States.

7 Application range

7.1 General

NOTE The application range provided below follows the requirements set by the EPBD recast.

Each standard shall include specifications on the intended application range of the described methods.

Each standard shall include specifications on optional procedures and/or data set according to the application range.

The type of data required (i.e. rated by manufacturer, average, maximum, minimum, worst case, …) as an input or given as an output shall be specified according to the intended application range.

The following application range shall be taken into account when drafting EPB-standards:

— energy performance check;

— energy certification;

— inspection;

— recommendations and energy auditing;

— system design and optimization (using tailored rating), including sizing.

Further details about application range are given in CEN/TS 16628:2014, Clause 7

7.2 Energy performance requirements

NOTE See CEN/TS 16628:2014, 7.3.

The standard shall not include any explicit or implicit energy performance requirements.

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Numerical indicators intended to be referenced by regulations to set legal requirements shall be clearly identified in a dedicated chapter or normative annex of each standard.

The standard shall define boundary conditions, required data, application options and possible reduced procedure required for the practical use of the identified values as a stand-alone legal requirement.

The accompanying Technical Report shall include explanations on the reason for the options and on the effect of the possible choices.

Indicators and options already used by EU Member States shall be considered.

7.3 Energy certification

NOTE See CEN/TS 16628:2014, 7.3.

An evaluation of the time and expertise required to collect the necessary data and to perform the energy performance calculation shall be included in the accompanying Technical Report.

Each EPB-standard shall include an annex with a list of items that shall be inspected on site to provide data for energy performance assessment.

7.4 System inspection

NOTE See CEN/TS 16628:2014, 7.7.2.2.

Inspection standards and calculation options for inspection purpose shall consider the availability and the time needed to acquire and/or measure required data.

Each inspection EPB-standard shall include an annex with a list of items that shall be inspected on site to provide data for energy performance calculation.

Each inspection EPB-standard shall include the method and information to produce lists of default values for repetitive items, to be adapted on a national basis.

An evaluation of the time and expertise required to get the necessary data during inspection shall be included in the Technical Report.

7.5 Recommendations and energy auditing

Where appropriate, EPB-standards shall include the option of using available actual data (measured or determined on site) to support energy recommendations and energy auditing (tailored rating options).

7.6 System sizing

Specific data set to be used for sizing purpose shall be clearly separated from other data set used for energy performance calculation.

7.7 Different levels of complexities

NOTE See CEN/TS 16628:2014, 7.6.

In writing the standards, the specification of the applicability of the individual methods and data set shall take into account building complexity and type. The reason for the choices shall be stated in the accompanying Technical Report.

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