SLOVENSKI STANDARD
kSIST-TP FprCEN ISO/TR 52018-2:2017

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Energetska učinkovitost stavb - Indikatorji delnih zahtev EPB, povezanih z bilanco toplotne energije in lastnostmi stavbnega tkiva - 2. del: Obrazložitev in utemeljitev ISO 52018-1 (ISO/DTR 52018-2:2016)

Energy performance of buildings - Indicators for partial EPB requirements related to thermal energy balance and fabric features - Part 2: Explanation and justification of ISO 52018-1 (ISO/DTR 52018-2:2016)

Performance énergétique des bâtiments - Indicateurs et exigences de PEB partielle liées aux éléments du bilan énergétique thermique et aux éléments d'enveloppe - Partie 2: Explication et justification de l'ISO 52018-1 (ISO/DTR 52018-2:2016)

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TECHNICAL REPORT

ISO/TR 52018-2

First edition

Energy performance of buildings — Indicators for partial EPB requirements related to thermal energy balance and fabric features —

Part 2: Explanation and justification of ISO 52018-1

Performance énergétique des bâtiments — Indicateurs et exigences de PEB partielle liées aux éléments du bilan énergétique thermique et aux éléments d'enveloppe —

Partie 2: Explication et justification de l'ISO 52018-1

PROOF/ÉPREUVE

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 163, *Thermal performance and energy use in the built environment*, Subcommittee SC 2, *Calculation methods*.

A list of all parts in the ISO 52018 series, published under the general title *Energy performance of buildings — Indicators for partial EPB requirements related to thermal energy balance and fabric features*, can be found on the ISO website.

Introduction

To fully understand document, it should be read in close conjunction, clause by clause, with ISO 52018-1[1)][1]. Essential information provided in ISO 52018-1 is not repeated in this document. References to a clause refer to the combined content of that clause in both ISO 52018-1 and this document.

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[2];

b) a document with detailed technical rules to be followed in drafting EPB-standards; CEN/TS 16629[3];

c) 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 (calculation) 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, ISO 52000-1[1)][4].

One of the main purposes of the revision of the EPB standards has been 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 contents 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[3]):

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

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

1) To be published.

— to facilitate understanding of the set of EPB standards.

This was also one of the main recommendations from the European CENSE project[17] that laid the foundation for the preparation of the set of EPB standards.

This technical report

This technical report accompanies ISO 52018-1,[1] which forms part of the set EPB standards.

The role and the positioning of the accompanied standard in the set of EPB standards is defined in the Introduction to ISO 52018-1.

General aspects of EPB indicators, requirements, ratings and certificates and application to the overall energy performance of buildings can be found in ISO 52003-1[2)][6] and ISO/TR 52003-2.[2)][7] A brief article on the subject can be found in[20].

Accompanying spreadsheet

Because no calculation procedures are defined in ISO 52018-1, there is no accompanying calculation spreadsheet for this document.

2) To be published.

Energy performance of buildings — Indicators for partial EPB requirements related to thermal energy balance and fabric features —

Part 2:
Explanation and justification of ISO 52018-1

1 Scope

This document refers to ISO 52018-1.

ISO 52018-1 gives a succinct enumeration of possible requirements related to thermal energy balance features and to fabric features. It also provides tables for regulators to report their choices in a uniform manner. This document provides many background considerations that can help both private actors and public authorities, and all stakeholders involved, to take informed decisions.

This document does not contain any normative provision.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

There are no normative references in this document.

More information on the use of EPB module numbers, in all EPB standards, for normative references to other EPB standards is given in ISO/TR 52000-2[5].

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 52018-1,[1] apply.

More information on some key EPB terms and definitions is given in ISO/TR 52000-2[5].

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

4 Symbols and subscripts

For the purposes of this document, the symbols and subscripts given in ISO 52018-1,[1] apply.

More information on key EPB symbols and subscripts is given in ISO/TR 52000-2[5].

5 General aspects

This document is fully complementary to ISO 52018-1. For a good comprehension, before reading a clause in this document, the corresponding (succinct) clause in ISO 52018-1 should be read, as this document does not repeat the content of ISO 52018-1, but only provides additional information.

This document contains many straightforward considerations with which many readers may already be familiar. In order for the text to also provide full support to novices in the field, such basic considerations have nevertheless been included. On the other hand, commonly circulating argumentations that could not withstand the test of critical, rational analysis have been omitted. It is self-evident, by the very nature of the topic, that the treatment can never be fully exhaustive; many additional motivations, for instance influenced by specific local conditions, may influence the final choice of the mix of energy features and indicators for which requirements are set.

For each of the partial EPB features enumerated in ISO 52018-1, this document formulates background considerations with respect to the following aspects (in as far as applicable):

— possible motivations,

— possible indicators,

— comparable economic strictness of the requirements,

— practical points of attention,

— testing,

— new construction and renovation issues,

— exceptions,

— other.

Achieving a good indoor environmental quality is one of the major objectives when designing buildings (first and foremost for the people in the building, but also for the proper preservation of any –specific– goods in the building). The topic of indoor environment is thematically and technically closely related to the energy efficiency of buildings, and both aspects are therefore logically considered in an integrated manner when building regulations are established. All the partial EPB features discussed in ISO 52018-1 and in this document are listed in Table 1 together with an indication whether indoor environment and/or energy efficiency is (are) usually the main motivation(s). (There may of course still be other possible reasons for setting a requirement, such as fabric preservation, but such other reasons are not visualized in the summary table.) Requirements on most EPB features may to a greater or lesser extent serve both purposes. The nuances are further discussed in each of the clauses.

Table 1 — Overview of the different partial EPB features

Clause	Partial EPB feature	Indoor environment	Energy efficiency
6	summer thermal comfort	X	(X)
7	winter thermal comfort	X	(X)
8	energy “need” for heating, or variants	(X)	X
9	energy “need” for cooling, or variants	(X)	X
10	combination of “needs”		X
11	overall thermal insulation of the envelope		X
12	thermal insulation of individual envelope elements	X	X
13	thermal bridges	X	X

