SLOVENSKI STANDARD
SIST-TP CEN ISO/TR 52000-2:2018

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Nadomešča:
SIST-TP CEN/TR 15615:2008

Energijske lastnosti stavb - Krovni standard za ocenjevanje energijskih lastnosti stavb - 2. del: Razlaga in utemeljitev ISO 52000-1 (ISO/TR 52000-2:2017)

Energy performance of buildings - Overarching EPB assessment - Part 2: Explanation and justification of ISO 52000-1 (ISO/TR 52000-2:2017)

Erläuterung der allgemeinen Zusammenhänge zwischen verschiedenen Europäischen Normen und der europäischen Richtlinie über die Gesamtenergieeffizienz von Gebäuden (EPBD) - Übergreifendes Dokument (ISO/TR 52000-2:2017)

Performance énergétique des bâtiments - Évaluation globale de la PEB - Partie 2: Explication et justification de l'ISO 52000-1 (ISO/TR 52000-2:2017)

Ta slovenski standard je istoveten z: **CEN ISO/TR 52000-2:2017**

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91.120.10	Toplotna izolacija stavb	Thermal insulation of buildings

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English Version

Energy performance of buildings - Overarching EPB assessment - Part 2: Explanation and justification of ISO 52000-1 (ISO/TR 52000-2:2017)

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This Technical Report was approved by CEN on 24 February 2017. It has been drawn up by the Technical Committee CEN/TC 371.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (CEN ISO/TR 52000-2:2017) has been prepared by Technical Committee CEN/TC 371 “Energy Performance of Buildings project group", the secretariat of which is held by NEN, in collaboration with Technical Committee ISO/TC 163 " Thermal performance and energy use in the built environment".

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 CEN/TR 15615:2008.

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

Endorsement notice

The text of ISO/TR 52000-2:2017 has been approved by CEN as CEN ISO/TR 52000-2:2017 without any modification.

TECHNICAL REPORT

ISO/TR 52000-2

First edition
2017-06

Energy performance of buildings — Overarching EPB assessment —

Part 2: Explanation and justification of ISO 52000-1

Performance énergétique des bâtiments — Évaluation globale de la PEB —
Partie 2: Explication et justification de l'ISO 52000-1

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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).

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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 voluntary nature of standards, 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.

ISO/TR 52000-2 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 371, *Energy Performance of Buildings project group*, in collaboration with ISO Technical Committees TC 163, *Thermal performance and energy use in the built environment*, and TC 205, *Building environment design*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

A list of all parts in the ISO 52000 series can be found on the ISO website.

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 16628:2014, Energy Performance of Buildings - Basic Principles for the set of EPB standards[13];

b) a document with detailed technical rules to be followed in drafting EPB-standards; CEN/TS 16629:2014, Energy Performance of Buildings - Detailed Technical Rules for the set of EPB-standards[14];

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 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 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, ISO 52000-1[1].

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 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[14]):

— 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[5] that laid the foundation for the preparation of the set of EPB standards.

This document

This document accompanies the overarching EPB standard (ISO 52000-1) that addresses the overarching principles for EPB-standards. The overarching EPB standard, contains the common terms, definitions and overall energy performance assessment procedures, as a basis for a systematic, clear and comprehensive set of EPB standards. It forms part of a set of standards related to the evaluation of the energy performance of buildings (EPB).

The role and the positioning of ISO 52000-1 in the set of EPB standards is defined in the Introduction to the standard.

Accompanying spreadsheets

Spreadsheets are produced through the implementation of ISO 52000-1. These spreadsheets (including possible updated versions) are available at www.epb.center. In this document, examples of each of these calculation sheets are included.

Background and history of this document, ISO 52000-1 **and the set of EPB standards**[1]:

Boosting energy efficiency of buildings

Since buildings burn 40 % of all the energy consumed, designing better buildings and retrofitting existing ones will help to reduce the energy demand and to create significant job opportunities world-wide.

The building sector has a great potential to reduce the greenhouse gas emissions, in line with the climate targets set at the Paris climate conference (COP21) in December 2015. Helping to decarbonize the building sector is the goal of the new holistic approach, the set of EPB standards (ISO 52000-series; see below under "Road ahead") being developed for the energy performance of buildings (EPB).

Holistic approach

The set of EPB standards …	
take into account	**and include:**
• indoor climate	• needs
• thermal properties (of walls, windows, etc.)	• use
• heating	• calculation
• cooling and air conditioning	• measurement
• domestic hot water	• inspection
• ventilation	• building design
• lighting	• new and existing buildings
• (de)humidification	• certification/labelling
• building automation and control (BAC/BMS)	• simple and complex buildings
• renewable energy sources	

Why is the holistic approach important for the energy performance of buildings (EPB) ?

In the past, energy performance requirements were set at component level – minimum thermal insulation levels and minimum efficiencies of products. This, however, leads to sub-optimal solutions and creates a barrier to the necessary technology transitions.

The holistic approach to assessing the overall energy performance of buildings and the built environment, provided by the set of EPB standards, is a key tool to overcome these barriers.

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1) The references [26] to [43] (see bibliography) contain more extensive background information on the set of EPB standards.

The set of EPB standards enable to assess the overall energy performance of a building. This means that any combination of technologies can be used to reach the intended energy performance level, at the lowest cost.

Due to this 'competition' between different technologies, the holistic approach is a key driver for technological innovation and change. Countries using the approach for several years – take, for instance, the Netherlands – have experienced large scale implementation and cost savings on a variety of new technologies.

And there is the economic benefit: Energy expenditures account for a substantial part of a building's total operating costs.

Who are the potential users of the EPB set of standards, and what should they be aware of ?

The energy assessment of buildings is carried out for various purposes, such as:

— judging compliance with building regulations expressed in terms of limited energy use or a related quantity,

— increasing transparency in real-estate transactions through an energy performance certification and/or display of the level of energy,

— monitoring the energy efficiency of the building and its technical building systems,

— helping to plan retrofit measures through predicting energy savings that would result from various actions.

In general, the holistic approach means that the energy performance is assessed as the total energy used for heating, cooling, lighting, ventilation, domestic hot water, and, in some cases, appliances. It ensures that all technologies are treated equally and balanced.

With the EPB set of standards**:**

— **Policy makers** acquire an instrumentation that enables them to take measures in the built environment and to quantify how much these measures would reduce the energy consumed in buildings.

— **Building industry, engineers and designers** can improve the energy-efficiency of their designs, building products and systems. The set of standards take these current and future products, systems and designs into account. Due to the holistic approach the risk of suboptimum solutions at component level is minimized. This way industry knows in what direction to innovate.

— **Building owners and occupants** can benchmark against other buildings and predict the energy saving potential of improvements.

First editions: European standards

The set of standards and accompanying technical reports on the energy performance of buildings have been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association (Mandate M/480[4])

Directive 2010/31/EU recasting the Directive 2002/91/EC on energy performance of buildings (EPBD[2]) 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 first mandate to CEN to develop a set of CEN EPBD standards (M/343[3],), to support the first edition of the EPBD[2] resulted in the successful publication of all EPBD related CEN standards in 2007-2008.

The mandate M/480 was issued to review the previous mandate M/343 as the recast of the EPBD raised the need to revisit the standards and reformulate and add standards so that they become on the one