



SLOVENSKI STANDARD SIST EN ISO 52120-1:2022

01-maj-2022

Nadomešča:
SIST EN 15232-1:2018

Energijske lastnosti stavb - Vpliv avtomatizacije, regulacije in upravljanja stavb - 1. del: Splošni okvir in postopki (ISO 52120-1:2021, popravljena različica 2022-09)

Energy performance of buildings - Contribution of building automation, controls and building management - Part 1: General framework and procedures (ISO 52120-1:2021, Corrected version 2022-09)

Energieeffizienz von Gebäuden - Einfluss von Gebäudeautomation und Gebäudemanagement - Teil 1: Allgemeiner Rahmen und Verfahren (ISO 52120-1:2021, korrigierte Fassung 2022-09)

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Performance énergétique des bâtiments - Contribution de l'automatisation, de la régulation et de la gestion technique des bâtiments - Partie 1: Cadre général et procédures (ISO 52120-1:2021, Version corrigée 2022-09)

Ta slovenski standard je istoveten z: EN ISO 52120-1:2022

ICS:

35.240.67	Uporabniške rešitve IT v gradbeništvu	IT applications in building and construction industry
91.120.10	Toplotna izolacija stavb	Thermal insulation of buildings
97.120	Avtomatske krmilne naprave za dom	Automatic controls for household use

SIST EN ISO 52120-1:2022

en,fr,de

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 52120-1

March 2022

ICS 91.120.10

Supersedes EN 15232-1:2017

English Version

Energy performance of buildings - Contribution of building automation, controls and building management - Part 1: General framework and procedures (ISO 52120-1:2021, Corrected version 2022-09)

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This European Standard was approved by CEN on 3 December 2021.

This European Standard was corrected and reissued by the CEN-CENELEC Management Centre on 28 September 2022.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN ISO 52120-1:2022) has been prepared by Technical Committee ISO/TC 205 "Building environment design" in collaboration with Technical Committee CEN/TC 247 "Building Automation, Controls and Building Management" the secretariat of which is held by SNV.

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of an identical text or by endorsement, at the latest by September 2022, and conflicting national standards shall be withdrawn at the latest by September 2022.

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 15232-1:2017.

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

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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[6cca2c968222](https://standards.iteh.ai/catalog/standards/sist/c50d7f23-59ad-4c34-ba6a-6cca2c968222)

Endorsement notice

The text of ISO 52120-1:2021, Corrected version 2022-09 has been approved by CEN as EN ISO 52120-1:2022 without any modification.

INTERNATIONAL
STANDARD

ISO
52120-1

First edition
2021-12

Corrected version
2022-09

**Energy performance of buildings —
Contribution of building automation,
controls and building management —**

**Part 1:
General framework and procedures**

*Performance énergétique des bâtiments — Contribution de
l'automatisation, de la régulation et de la gestion technique des
bâtiments —
Partie 1: Cadre général et procédures*

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Reference number
ISO 52120-1:2021(E)

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Published in Switzerland

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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 of 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 www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 205, *Building environment design*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 247, *Building Automation, Controls and Building Management*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

A list of all parts in the ISO 52120 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

This corrected version of ISO 52120-1:2021 incorporates the following corrections:

- [Figure C.12](#) has been replaced.

ISO 52120-1:2021(E)

Introduction

This document belongs to the family of standards aimed at international harmonization of the methodology for the assessment of the energy performance of buildings. Throughout, this group of standards is referred to as a set of called “EPB set of standards”.

All EPB standards follow specific rules to ensure overall consistency, unambiguity and transparency. This document is clearly identified in the modular structure developed to ensure a transparent and coherent set of EPB standards, as set out in ISO 52000-1, the overarching EPB standard. BAC (building automation and control) is identified in the modular structure as technical building system M10. However, other International Standards issued by ISO TC 205 deal with control accuracy, control functions and control strategies using standards communications protocol (these last standards do not belong to the set of EPB standards).

To avoid a duplication of calculation due to the BAC (avoid double impact), no calculation is done in a BAC EPB standard set, but in each underlying standard of the set of EPB standards (from M1 to M9 in the modular structure), an identifier developed and present in the M10 covered by this document is used where appropriate. This way of interaction is described in detail in ISO/TR 52000-2, the Technical Report accompanying ISO 52000-1. As consequence, the concept of a normative template for specific (national) choices in Annex A, and Annex B with informative default choices, as commonly used in the set of EPB standards is not applicable for this document.

The main target groups of this document are all the users of the set of EPB set of standards (e.g. architects, engineers, regulators).

Further target groups are 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 document (ISO/TR 52120-2^[5]).

NOTE 1 [Table 1](#) shows the relative position of this document within the set of EPB standards in the context of the modular structure as set out in ISO 52000-1.

NOTE 2 In 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 3 The modules represent EPB standards, although one EPB standard can cover more than one module and one module can 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](#).

Table 1 — Position of this document (in casu M10–4,5,6,7,8,9,10), within the modular structure of the set of EPB standards

Submodule	Over-arching	Building (as such)	Technical building system									
	Descriptions	Descriptions	Descriptions	Heating	Cooling	Ventilation	Humidification	Dehumidification	Domestic hot waters	Lighting	Building automation and control	PV, wind, etc.
sub1	M1	M2		M3	M4	M5	M6	M7	M8	M9	M10	M11
1	General	General	General									

^a The shaded modules are not applicable.

Table 1 (continued)

	Over-arching	Building (as such)	Technical building system									
Submodule	Descriptions	Descriptions	Descriptions	Heating	Cooling	Ventilation	Humidification	Dehumidification	Domestic hot waters	Lighting	Building automation and control	PV, wind, etc.
sub1	M1	M2		M3	M4	M5	M6	M7	M8	M9	M10	M11
2	Common terms and definitions; symbols, units and subscripts	Building energy needs	Needs									
3	Application	(Free) indoor conditions without systems	Maximum load and power									
4	Ways to express energy performance	Ways to express energy performance	Ways to express energy performance								x	
5	Building functions and building boundaries	Heat transfer by transmission	Emission and control								x	
6	Building occupancy and operating conditions	Heat transfer by infiltration and ventilation	Distribution and control								x	
7	Aggregation of energy services and energy carriers	Internal heat gains	Storage and control								x	
8	Building partitioning	Solar heat gains	Generation and control								x	
9	Calculated energy performance	Building dynamics (thermal mass)	Load dispatching and operating conditions								x	
10	Measured energy performance	Measured energy performance	Measured energy performance								x	
11	Inspection	Inspection	Inspection									
12	Ways to express indoor comfort		BMS									
13	External environment conditions											
14 ^a	Economic calculation											

^a The shaded modules are not applicable.

Energy performance of buildings — Contribution of building automation, controls and building management —

Part 1: General framework and procedures

1 Scope

This document specifies:

- a structured list of control, building automation and technical building management functions which contribute to the energy performance of buildings; functions have been categorized and structured according to building disciplines and building automation and control (BAC);
- a method to define minimum requirements or any specification regarding the control, building automation and technical building management functions contributing to energy efficiency of a building to be implemented in building of different complexities;
- a factor-based method to get a first estimation of the effect of these functions on typical buildings types and use profiles;
- detailed methods to assess the effect of these functions on a given building.

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.

ISO 50001:2018, *Energy management systems — Requirements with guidance for use*

ISO 52000-1:2017, *Energy performance of buildings — Overarching EPB assessment — Part 1: General framework and procedures*

ISO 7345:2018, *Thermal performance of buildings and building components — Physical quantities and definitions*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 7345:2018, ISO 52000-1:2017 and the following apply.

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

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>