

Annex A (normative)

Input and method selection data sheet — Template

A.1 General

The template in Annex A of this document shall be used to specify the choices between methods, the required input data and references to other documents.

NOTE 1 Following this template is not enough to guarantee consistency of data.

NOTE 2 Informative default choices are provided in Annex B. Alternative values and choices can be imposed by national/regional regulations. If the default values and choices of Annex B are not adopted because of the national/regional regulations, policies or national traditions, it is expected that:

- national or regional authorities prepare data sheets containing the national or regional values and choices, in line with the template in Annex A; or
- by default, the national standards body will add or include a national annex (Annex NA) to this document, in line with the template in Annex A, giving national or regional values and choices in accordance with their legal documents.

NOTE 3 The template in Annex A is applicable to different applications (e.g., the design of a new building, certification of a new building, renovation of an existing building and certification of an existing building) and for different types of buildings (e.g., small or simple buildings and large or complex buildings). A distinction in values and choices for different applications or building types could be made:

- by adding columns or rows (one for each application), if the template allows;
- by including more than one version of a table (one for each application), numbered consecutively as a, b, c, ... For example: Table NA.3a, Table NA.3b;
- by developing different national/regional data sheets for the same standard. In case of a national annex to the standard these will be consecutively numbered (Annex NA, Annex NB, Annex NC, ...).

NOTE 4 In the section “Introduction” of a national/regional data sheet information can be added, for example about the applicable national/regional regulations.

NOTE 5 For certain input values to be acquired by the user, a data sheet following the template of Annex A, could contain a reference to national procedures for assessing the needed input data. For instance, reference to a national assessment protocol comprising decision trees, tables and pre-calculations.

The shaded fields in the tables are part of the template and consequently not open for input.

Specific information concerning Annex A and Annex B in this document

Although the tables in Annex A cover most EPB requirements that currently apply in various countries, they are of course not necessarily exhaustive, also in view of possible new developments in the future. Still other variables can possibly be considered for setting regulatory EPB requirements and the tables have been conceived flexibly to allow to report such other choices.

Table A.1/B.1 provides a table to specify the modular references.

Table A.2/B.2 provides a table for regulators to report in a uniform manner the chosen mix of partial EPB features for which regulatory requirements are set, in as far as they fall within the scope of this document. Extra features can be added at the bottom of the table. The table shall be seen in conjunction with all other overall and partial EPB requirements (which are beyond the scope of this document, e.g. concerning technical building systems); see also the relevant standard under EPB module M1-4.

Tables A.3/B.3 to A.14/B.14 provide tables to report in a uniform manner, for each of the partial EPB features selected for setting requirements, as reported in Table A.2/B.2, the numeric indicator that is chosen to express the quantitative requirement. An X-mark shall be set in the second column corresponding to the row of the chosen indicator. Still other numeric indicators can be added at the bottom of each of the tables. For partial EPB features that are not subjected to a requirement, the corresponding table will of course remain empty. If requirements are set for extra EPB features, as reported in additional rows in Table A.2/B.2, then the format of generic Table A.14/B.14 shall be used for reporting the corresponding indicators that are used.

Due to their open-endedness, all the reporting tables allow full freedom of choice by the regulators.

Typically, different choices will be made according to the type of work, notably for new constructions (or equivalent) on the one hand and works on existing buildings on the other hand. Furthermore, there may be differentiations according to other criteria, such as between residential and non-residential buildings. Each different application area will thus have its own set of tables if different choices are made (see Note 3 above). The application domain of every set shall be clearly specified.

A.2 References

The references, identified by the module code number, are given in Table A.1.

Table A.1 — References

Reference	Reference document	
	Number	Title
M1-4	No. 63	Regulation no 63, adopted on 11.12.2018, 'Minimum requirements for energy performance of buildings', (määrus nr 63, "Hoone energiatõhususe miinimumnõuded", https://www.riigiteataja.ee/akt/107072020011)
M1-6		
M1-13		
M2-2		
M2-5.1	No. 58	Regulation no 58, adopted on 05.06.2015, 'Methodology for calculating energy efficiency of buildings' (määrus nr 58, "Hoone energiatõhususe arvutamise meetodika", https://www.riigiteataja.ee/akt/107072020012?leiaKehtiv)
M2-5.2		
M2-5.3		
M2-8.1		
M2-8.2	No. 36	Regulation no 36, adopted on 30.04.2015, 'Requirements for issuing an energy performance certificate and for energy performance certificate', (määrus nr 36, "Nõuded energiamärgise andmisele ja energiamärgisele", https://www.riigiteataja.ee/akt/107072020013?leiaKehtiv)
M5-8		
M9-1		
		'The Building Code', adopted 11.02.2015 ("Ehitusseadustik", vastu võetud 11.02.2015, https://www.riigiteataja.ee/akt/129062022005?leiaKehtiv)

A.3 Mix of partial energy performance requirements

A.3.1 General

See Clause 6.

The table based on the template in Table A.2 shall be filled out as follows.

- The first column lists the partial EPB features that can be considered for setting requirements. The motivation for the mix that is chosen shall be reported below the table. If needed, still other partial EPB features can be added at the bottom of the table. By means of a numbered reference, a precise

description of each additional EPB feature will then be given below the table. If possible, the description of the extra feature shall be taken from an EPB standard. Also, for each extra partial EPB feature, the motivation shall be described in a clear manner.

- In the second column, an X-mark is placed at each of the features that is chosen to set a requirement.
- In the third column, for each exception, a numbered reference is made to a full, detailed and clear explanation below the table, including the motivation for the exception. For some types of (detailed) requirements (e.g. on element level, such as thermal insulation), it may be easier to explain the exceptions in conjunction with the detailed description of the actual requirements. In these instances, it suffices to give here the general synthesis, the motivation and a precise reference to the regulatory texts where the requirements and exceptions are described.

A.3.2 Application: ...

This subclause may be repeated for different applications.

Table NA.2a — Choices with respect to the partial EPB requirements related to thermal energy balance and fabric features (see Clause 6)

Application: New constructions			
Partial energy performance feature	Requirement?	Exceptions*?	Details in
Summer thermal comfort	X		Table A.3/B.3
Winter thermal comfort	X		Table A.4/B.4
Energy “need” for heating: give further specifications (a)*	-		Table A.5/B.5
Energy “need” for cooling: give further specifications (b)*	-		Table A.6/B.6
Combined energy “need” for heating and cooling (and possibly still other quantities): define precisely*	-		Table A.7/B.7
Overall thermal insulation of the envelope	-		Table A.8/B.8
Thermal insulation of individual elements of the thermal envelope	-		Table A.9/B.9
Thermal bridges	-		Table A.10/B.10
Window energy performance	-		Table A.11/B.11
Airtightness of the thermal envelope: mandatory measurement: give further specifications*	X		Table A.12/B.12
Airtightness of the thermal envelope: quantitative requirement: give further specifications*	X**		Table A.12/B.12
Solar control	-		Table A.13/B.13
<free text> Other requirement 1; define*)			Table A.14/B.14
<free text> Other requirement 2; define*)			Table A.14/B.14
...			Table A.14/B.14
<p>* The columns or cells that are marked with an asterisk (i.e. any cell involving a specific national/regional element) shall be marked with a numbered reference. A clear explanation and motivation shall be given for each of these new elements below the table.</p> <p>** The air leakage number (q₅₀) of the building envelope can be a maximum of 1.5 m³/h m². This needs to be demonstrated by measurement.</p> <p>Explanation:</p> <p>(a) If applicable, specify for the energy “need” for heating:</p> <ul style="list-style-type: none"> — with the real or with a predefined fictitious ventilation system; — including/excluding the amount of heat needed for active preheating of the incoming hygienic ventilation air (if present); — including/excluding the latent heat need (i.e. the sensible heat need only or not); 			

- still other aspects.
- (b) If applicable, specify for the energy “need” for cooling:
 - with the real or with a predefined fictitious ventilation system;
 - including/excluding the amount of cold needed for active precooling of the incoming hygienic ventilation air (if present);
 - including/excluding the latent cold need (i.e. the sensible cold need only or not);
 - still other aspects.

Specifications according to each of the numbered references:

** The air leakage number (q50) of the building envelope can be a maximum of 1.5 m³/h m². This needs to be demonstrated by measurement.

Motivation for the chosen requirement mix:

Table NA.2b — Choices with respect to the partial EPB requirements related to thermal energy balance and fabric features (see Clause 6)

Application: Works on existing buildings			
Partial energy performance feature	Requirement?	Exceptions*?	Details in
Summer thermal comfort	X		Table A.3/B.3
Winter thermal comfort	X		Table A.4/B.4
Energy “need” for heating: give further specifications (a)*	-	-	Table A.5/B.5
Energy “need” for cooling: give further specifications (b)*	-	-	Table A.6/B.6
Combined energy “need” for heating and cooling (and possibly still other quantities): define precisely*	-		Table A.7/B.7
Overall thermal insulation of the envelope	-	-	Table A.8/B.8
Thermal insulation of individual elements of the thermal envelope	-	-	Table A.9/B.9
Thermal bridges	-	-	Table A.10/B.10
Window energy performance	-	-	Table A.11/B.11
Airtightness of the thermal envelope: mandatory measurement: give further specifications*	-	-	Table A.12/B.12
Airtightness of the thermal envelope: quantitative requirement: give further specifications*	-	-	Table A.12/B.12
Solar control	-		Table A.13/B.13
<free text> Other requirement 1; define*)	-		Table A.14/B.14
<free text> Other requirement 2; define*)	-		Table A.14/B.14
* The columns or cells that are marked with an asterisk (i.e. any cell involving a specific national/regional element) shall be marked with a numbered reference. A clear explanation and motivation shall be given for each of these new elements below the table.			
Explanation:			
(a) If applicable, specify for the energy “need” for heating: <ul style="list-style-type: none"> — with the real or with a predefined fictitious ventilation system; — including/excluding the amount of heat needed for active preheating of the incoming hygienic ventilation air (if present); — including/excluding the latent heat need (i.e. the sensible heat need only or not); — still other aspects. 			
(b) If applicable, specify for the energy “need” for cooling: <ul style="list-style-type: none"> — with the real or with a predefined fictitious ventilation system; — including/excluding the amount of cold needed for active precooling of the incoming hygienic ventilation air (if present); — including/excluding the latent cold need (i.e. the sensible cold need only or not); — still other aspects. 			
Specifications according to each of the numbered references:			
-			
Motivation for the chosen requirement mix:			

A.3.3 Application: ...

This subclause may be repeated for different applications.

A.4 Partial energy performance requirements

A.4.1 Application: ...

This subclause may be repeated for different applications.

Table A.3 is only applicable if a requirement is set in Table A.2/B.2 for this EPB feature.

Table A.3 — Numeric indicator used for the requirement on the summer thermal comfort (see Clause 7)

Application: New constructions	
Numeric indicator	Choice
Time above a fixed reference temperate [h]	
Temperature weighted time above a fixed reference temperature [K·h]	X
<free text> Other indicator; define*)	Not applicable
...	
* If another indicator is used, it shall be clearly described below. And precise reference shall be made to its definition and its assessment method:	
Reference: Regulation no 63. § 11. Requirement on the summer thermal comfort (Suvised ruumitemperatuuri nõuded). https://www.riigiteataja.ee/akt/107072020011	
Description in case of other indicator:	
Not applicable	

Table A.4 is only applicable if a requirement is set in Table A.2/B.2 for this EPB feature.

Table A.4 — Numeric indicator used for the requirement on the winter thermal comfort (see Clause 8)

Application: New constructions	
Numeric indicator	Choice
Time below a fixed reference temperate [h]	-
Temperature weighted time below a fixed reference temperature [K·h]	-
Target values	
...	
* If another indicator is used, it shall be clearly described below. And precise reference shall be made to its definition and its assessment method:	
Description in case of other indicator:	
Regulation no 63. Annex 1 'The requirements to the flow rate of the ventilation air and the design values of the room temperatures used in the energy calculation' ('Ventilatsiooni välisõhu vooluhulgale ja energiaarvutuses kasutatavate ruumitemperatuuride seadeväärtustele kehtivad nõuded'). MKM_m63_lisa1.pdf (riigiteataja.ee)	

Table A.5 is only applicable if a requirement is set in Table A.2/B.2 for this EPB feature.

Table A.5 — Numeric indicator used for the requirement on the energy "need" for heating (see Clause 9)

Application: New Constructions	
Numeric indicator	Choice
Total "need" [kWh]	-
"Need" per useful floor area [kWh/m ²]	-
Ratio; define*)	
<free text> Other indicator; define*)	
...	
* If a ratio or another indicator is used, it shall be clearly described below. And precise reference shall be made to its definition and its assessment method	
Description in case of ratio or other indicator:	
<free text>	

Table A.6 is only applicable if a requirement is set in Table A.2/B.2 for this EPB feature.

Table A.6 — Numeric indicator used for the requirement on the energy “need” for cooling (see Clause 10)

Application: New constructions/buildings	
Numeric indicator	Choice Not applicable
Total “need” [kWh]	
“Need” per useful floor area [kWh/m ²]	
Ratio; define*)	
<free text> Other indicator; define*)	
...	
* If a ratio or another indicator is used, it shall be clearly described below. And precise reference shall be made to its definition and its assessment method: Description in case of ratio or other indicator: No national requirement for cooling energy consumption	

Table A.7 is only applicable if a requirement is set in Table A.2/B.2 for this EPB feature.

Table A.7 — Numeric indicator used for the requirement on the combined energy “need” for heating and cooling (and possibly still other quantities) (see Clause 11)

Application: ...	
Numeric indicator	Choice Not applicable
Total “need” [kWh]	
“Need” per useful floor area [kWh/m ²]	
Ratio; define*)	
<free text> Other indicator; define*)	
...	
* If a ratio or another indicator is used, it shall be clearly described below. And precise reference shall be made to its definition and its assessment method: Description in case of ratio or other indicator: <free text>	

Table A.8 is only applicable if a requirement is set in Table A.2/B.2 for this EPB feature.

Table A.8 — Numeric indicator used for the requirement on the overall thermal insulation of the thermal envelope (see Clause 12)

Application: ...	
Numeric indicator	Choice Not applicable
Overall transmission heat transfer coefficient H_{tr} [W/K]	
Mean thermal transmittance U_{mn} [W/(m ² ·K)]	
Ratio; define*)	
<free text> Other indicator; define*)	
...	
* If a ratio or another indicator is used, it shall be clearly described below. And precise reference shall be made to its definition and its assessment method: Description in case of a ratio or other indicator: <free text>	

Table A.9 is only applicable if a requirement is set in Table A.2/B.2 for this EPB feature.

Table NA.9a — Numeric indicator used for the requirement on the thermal insulation of individual elements of the thermal envelope (see Clause 13)

Application: New constructions	
Numeric indicator	Choice
Minimum temperature factor f_{Rsi} [-]	Not applicable
Thermal transmittance U [W/(m ² ·K)]	Not applicable
Total thermal resistance R_{tot} [m ² K/W]	Not applicable
Intrinsic element thermal resistance $R_{c,op}$ [m ² K/W]	Not applicable
<free text> Other indicator; define*)	
* If another indicator is used, it shall be clearly described below. And precise reference shall be made to its definition and its assessment method: Description in case of other indicator: <free text>	

Table NA.9b — Numeric indicator used for the requirement on the thermal insulation of individual elements of the thermal envelope (see Clause 13)

Application: Works on existing buildings	
Numeric indicator	Choice
Minimum temperature factor f_{Rsi} [-]	Not applicable
Thermal transmittance U [W/(m ² ·K)]	Not applicable
Total thermal resistance R_{tot} [m ² K/W]	Not applicable
Intrinsic element thermal resistance $R_{c,op}$ [m ² K/W]	Not applicable
<free text> Other indicator; define*)	
* If another indicator is used, it shall be clearly described below. And precise reference shall be made to its definition and its assessment method: Description in case of other indicator: Not applicable.	

Table A.10 is only applicable if a requirement is set in Table A.2/B.2 for this EPB feature.

Table A.10 — Numeric indicator used for the requirement on the thermal bridges (see Clause 14)

Application: New constructions	
Numeric indicator	Choice
Minimum temperature factor f_{Rsi} [-]	X
Linear thermal transmittance Ψ [W/(m·K)], possibly differentiated per type of junction	Not applicable
Point thermal transmittance χ [W/K], possibly differentiated per type of three dimensional thermal bridge	Not applicable
Relative importance of thermal bridges compared to the overall heat transfer coefficient [-] $(\sum\Psi l + \sum\chi)/H_{tr}$	Not applicable
<free text> Other indicator; define*)	
...	
* If another indicator is used, it shall be clearly described below. And precise reference shall be made to its definition and its assessment method: Description in case of other indicator: <free text>	

Table A.11 is only applicable if a requirement is set in Table A.2/B.2 for this EPB feature.

Table A.11 — Numeric indicator used for the requirement on the window energy performance (see Clause 15)

Application: New constructions	
Numeric indicator	Choice
Heating energy performance $P_{E,H,w}$ [kWh/m ²]	Not applicable
Cooling energy performance $P_{E,C,w}$ [kWh/m ²]	

Combination of heating and cooling energy performance $P_{E,H+C,w}$ [kWh/m ²]	
For glazing only: energy balance value E [W/(m ² ·K)]	
Minimal window area in certain types of rooms: specify*	
<free text> Other indicator; define*)	
* If another indicator is used, it shall be clearly described below. And precise reference shall be made to its definition and its assessment method: Description in case of other indicator: <free text>	

Table A.12 is only applicable if a requirement is set in Table A.2/B.2 for this EPB feature.

Table A.12 — Numeric indicator used for the requirement on the thermal envelope air tightness (see Clause 16)

Application: New constructions	
Numeric indicator	Choice
Specific leakage rate per thermal envelope area q_{Epr} [m ³ /h m ²]	X
Air change rate n_{pr} [h ⁻¹]	-
Specific leakage rate per useful floor area q_{Fpr} [m ³ /h/m ²]	-
<free text> Other indicator; define*)	-
Specify for the chosen method of the air tightness measurement: <ul style="list-style-type: none"> — the precise definition of the reference area or volume for the indicator used; — the reference pressure, p_r; — result of pressurization, depressurization or mean; — others, if needed. 	
Specification (if method 1, 2 or 3): Regulation no 63, § 2 (5) <i>The air leakage rate is an indicator characterizing the air tightness of the building's outer boundary (envelope). The unit of the air leakage number is the volume of air leakage in cubic meters per square meter of the outer wall surface per hour [m³/(h·m²)]. The air leakage number is determined by an air leakage test at a pressure difference of 50 pascal (Pa).</i>	
§ 12. Thermal envelope requirements (1) <i>The outer boundaries of the building must be sufficiently insulated to ensure compliance with the requirements of energy efficiency and thermal comfort of the room.</i> (2) <i>If the heat transfer of the outer boundary exceeds 0.65 watts per square meter and degree, then the thermal comfort of the room is ensured during the design with an additional heating solution for the corresponding purpose or other technical solution.</i> (3) <i>The actual average air leakage number of the building's outer boundary must not exceed the value used in the energy calculation. The actual average air leakage number of the building's outer boundary is verified by a measurement carried out by an independent expert or by a declaration method.</i> Hoone energiätõhususe miinimumnõuded–Riigi Teataja	
* If another indicator is used, it shall be clearly described below. And precise reference shall be made to its definition and its assessment method: Description in case of other indicator: <free text>	

Table A.13 is only applicable if a requirement is set in Table A.2/B.2 for this EPB feature.

Table A.13 — Numeric indicator used for the requirement on the solar control (see Clause 17)

Application: Works on existing buildings	
Numeric indicator	Choice
Solar factor g or g_{tot} or F_{npss} [-]	Not applicable
<free text> Other indicator; define*)	
* If another indicator is used, it shall be clearly described below. And precise reference shall be made to its definition and its assessment method: Description in case of other indicator: Note: No numerical indicator	

If requirements on other EPB features within the scope of this document are set, as reported in

Table A.2/B.2, the indicators that are used are reported in Table A.14.

Table A.14 — Numeric indicator used for other requirements (see Table A.2/B.2)

Application: New constructions	
EPB feature	Numeric indicator
<free text> Other requirement 1; define*)	Not applicable
<free text> Other requirement 2; define*)	...
...	
* All EPB features and their corresponding indicator shall be clearly described and precise reference shall be made to their definition and their assessment method. The numbers (1), (2), ... refer to the numbers of other requirements in Table A.2/B.2.	
Specification:	
Other requirement 1: ... <free text>	
Other requirement 2: ...	
<free text>	

A.4.2 Application: ...

This subclause may be repeated for different applications.