

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.

A.2 References

The references, identified by the module code number, are given in a table complying with the format given in Table A.1 (a template).

Table A.1 — References (See Clause 2)

Reference	Reference document	
	Number	Title
M1-2	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)
M1-3		
M1-4		
M1-5, M1-7	No. 58	Regulation no 58, adopted on 05.06.2015, ‘Methodology for calculating energy efficiency of buildings’ (määrus nr 58, “Hoone energiatõhususe
M1-8, M1-9		
M1-10		
M1-6, M2-7		

Reference	Reference document	
	Number	Title
M1-11	No. 36	arvutamise metoodika”, https://www.riigiteataja.ee/akt/107072020012?leiaKehtiv)
M1-13		
M1-14		
M2-2		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)
M2-3		
M2-4		
M2-5		
M2-6		
M2-7		
M2-8		‘The Building Code’, adopted 11.02.2015 (“Ehitusseadustik”, vastu võetud 11.02.2015, https://www.riigiteataja.ee/akt/129062022005?leiaKehtiv)
M3-1		
M3-2		
M3-3		
M3-4		
M3-5		
M3-6		
M3-7		
M3-8		
M3-9		
M3-10		
M3-11		
M3-12		
M4-1		
M4-2		
M4-3		
M4-4		
M4-5		
M4-6		
M4-7		
M4-8		
M4-9		
M4-10		
M4-11		
M4-12		
M5-1		
M5-2		
M5-3		
M5-4		
M5-5		
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M6-9		
M6-10		
M6-11		
M7-1		
M7-2		

Reference	Reference document	
	Number	Title
M7-3		
M7-4		
M7-5		
M7-6		
M7-7		
M7-8		
M7-9		
M7-10		
M7-11		
M8-1		
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M10-8		
M10-11		
M10-12		
M11-1		
M11-4		
M11-8		

A.3 Overarching preparation steps

Table A.2 — Energy performance assessment types according to building category and application (See 5.3)

Application	Building category	Assessment type	Conditions
Energy performance certificate (EPC) for new buildings and major renovations	All categories	Calculated	-
EPC for existing buildings	All categories	Based on measured energy use	-
Building permit	All categories	Design type	-
Permit to use	All categories	As built type	-
Energy audit	All categories	Tailored type	**

NOTE Add rows in case of more assessment purposes.

* Building Code (Ehitusseadustik - <https://www.riigiteataja.ee/akt/105032015001?leiaKehtiv>)

* 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>)

**Regulation no 28, adopted on 08.04.2015 'Requirements for energy audit of residential building' (Määrus nr 28, "Elamu energiaauditile esitatavad nõuded" <https://www.riigiteataja.ee/akt/122082019003>)

Table A.3 — Object types (See Clause 6 and 10.1)

EPB_OBJECT_TYPE			
Type ^a	Description	Subset ^b	Comments
< unique identifier in capitals >	One row per type	1	
EPB_OBJECT_BLDNG_TOT	Whole building	1	
EPB_OBJECT_BLDNG_UNIT	Building unit	1	
EPB_OBJECT_BLDNG_PART	Part of a building (lacking one or more features of a complete building or building unit)	2	
EPB_OBJECT_LCYCLE_NEW.DESIGN	New building design	2	
EPB_OBJECT_LCYCLE_AS.BUILT	Existing building as built (without long term use data)	2	
EPB_OBJECT_LCYCLE_EXIST.RENOV	Existing building after renovation (without long term use data)	2	
EPB_OBJECT_LCYCLE_EXIST.EXTENS	Existing building extension (without long term use data)	2	
EPB_OBJECT_LCYCLE_EXIST.IN.USE	Existing building in use	2	
EPB_OBJECT_CAT_RES	Residential building	3	
EPB_OBJECT_CAT_NRES	Non-residential building	3	
EPB_OBJECT_USER_L.PUBL	Large public building	4	
EPB_OBJECT_USER_OTHER	Other	4	
NOTE The type of object may have an effect on the choices in this overarching document and in the other EPB standards. This property is therefore inherited by the other EPB standards, where relevant.			
^a One choice is possible per subset.			
^b Definition of the calculation case, one selection shall be done for each subset.			

Table A.4 — Building categories (See Clauses 6 and 9)

BLDNGCAT_TYPE		
Type	Description	Comments
< unique identifier in capitals > <i>Not applicable</i>	One row per type	
	1. Detached house with heated floor area < 120 m ²	Väikeelamu köetava pinaga < 120 m ²
	2. Detached house with heated floor area 120 – 220 m ² and row houses	Väikeelamu köetava pinnaga < 120 – 220 m ² ja ridaelamu
	3. Detached house with heated floor area > 220 m ²	Väikeelamu köetava pinnaga >220 m ²
	4. Apartment building	Korterelamu
	5. Military barrack	Kasarmu
	6. Office building	Kontorihoone
	7. Hotel	Majutushoone
	8. Commercial building (incl. restaurant)	Ärihoone
	9. Public building	Avalik hoone
	10. Shopping center and terminal	Kaubandushoone ja terminal
	11. Educational building (school)	Haridushoone
	12. Daycare center	Koolieelse lasteasutuse hoone
	13. Health care building	Ravihoone
	14. Warehouse	Laohoone

	15. Industrial building	Tööstushoone
	16. Building with a high energy consumption	Suure energiatarbega hoone
NOTE The building category may have an effect on the choices in this overarching document and in the other EPB standards. This property is therefore inherited by the other EPB standards, where relevant.		
Note: In Estonia, buildings are divided into categories by numbers (1...16) and the building category types such as <i>BLNDGCAT_TYPE_XXX</i> are not used.		
Regulation no 63, adopted on 11.12.2018, 'Minimum requirements for energy performance of buildings', (https://www.riigiteataja.ee/akt/107072020011)		
Annex 2 – 'Limit values of energy efficiency figures for buildings' (määrus nr 63 Lisa 2 'Hoonete energiatarbuse piirväärtused' (https://www.riigiteataja.ee/aktilisa/1070/7202/0011/MKM_m63_lisa2.pdf#))		

Table A.5 — Which building categories are included in EPB assessment (See 6.2.2)

Building categories	Identifier	Included in EPB assessment ^a Yes/No
1)	Detached house with heated floor area < 120 m ²	Yes
2)	Detached house with heated floor area 120 – 220 m ² and row houses	Yes
3)	Detached house with heated floor area > 220 m ²	Yes
4)	Apartment building	Yes
5)	Military barrack	Yes
6)	Office building	Yes
7)	Hotel	Yes
8)	Commercial building (incl. restaurant)	Yes
9)	Public building	Yes
10)	Shopping center and terminal	Yes
11)	Educational building (school)	Yes
12)	Daycare center	Yes
13)	Health care building	Yes
14)	Warehouse	Yes
15)	Industrial building	Yes
16)	Building with a high energy consumption	Yes
^a Building category for which this document applies, e.g., because there is an EPB requirement for this building category. Note: In Estonia, buildings are divided into categories by numbers (1...16) and the building category types such as <i>BLNDGCAT_TYPE_XXX</i> are not used.		

Table A.6 — Differentiation of space categories (See Clauses 6, 9 and 10.1)

Choice		
Type	Choice	Comments
Differentiation of space categories in a building	No	<i>Average values for heated floor area are used in all building categories.</i>

In case of differentiation Table A.7 has to be completed. Otherwise the list of space categories is equal to the list of building categories: (SPACECAT_X = BLDNGCAT_X).

Table A.7 — Space categories (See Clauses 6 and 9)

SPACECAT_TYPE		
Type	Description	Comments
< unique identifier in capitals >	One row per type	Not applicable
NOTE 1 Each space category requires a set of conditions of use (temperature settings, ventilation, and lighting requirements, domestic hot water needs, etc.).		
NOTE 2 The space category may have an effect on the choices in this overarching document and in the other EPB standards. This property is therefore inherited by the other EPB standards, where relevant.		

Table A.8 — Application types (See Clauses 6 and 9)

EPB_APPLIC_TYPE		
Type	Description	Comments
<i>EPB_APPLIC_REQ</i>	To check compliance with energy performance requirements	-
<i>EPB_APPLIC_CERTIF</i>	Energy performance certification	-
<i>EPB_APPLIC_PERMIT_BLD</i>	To obtain building permit	-
<i>EPB_APPLIC_USE</i>	To obtain permit to use	-
<i>EPB_APPLIC_AUDIT</i>	Energy audit (tailored)	-
NOTE The type of application may have an effect on the choices in this overarching document and in the other EPB standards. This property is therefore inherited by the other EPB standards, where relevant.		

Table A.9 — EPB assessment types (See Clauses 6 and 9)

EPB_ASSESS_TYPE (see Table 3)		
Type	Description	Comments
<i>EPB_ASSESS_CALC_DESIGN</i>	Calculated, design	
<i>EPB_ASSESS_CALC_ASBUILT</i>	Calculated, as built	
<i>EPB_ASSESS_CALC_ACTUAL</i>	Calculated, actual	Not applicable
<i>EPB_ASSESS_CALC_TAILORED</i>	Calculated, tailored	Not applicable
<i>EPBD_ASSESS_MEAS_ACTUAL</i>	Measured, actual	
<i>EPBD_ASSESS_MEAS_CORR_CLIM</i>	Measured, corrected for climate	
<i>EPBD_ASSESS_MEAS_CORR_USE</i>	Measured, corrected for use	Not applicable
<i>EPBD_ASSESS_MEAS_STAND</i>	Measured, standards (corrected for climate and use)	Not applicable
NOTE 1 The type may be different for different object types, building or space categories.		
NOTE 2 The type of assessment may have an effect on the choices in this overarching document and in the other EPB standards. This property is therefore inherited by the other EPB standards, where relevant.		

Table A.10 — Combination of services types (See Clauses 6 and 9)

EPB_LISTSERVICES_TYPE		
Type	Description	Comments
<i>EPB_LISTSERVICES_RES</i>	Services included for the EPB assessment of residential buildings	EPB uses and lighting and appliances
<i>EPB_LISTSERVICES_NRES</i>	Services included for the EPB assessment of non-residential buildings	EPB uses and appliances
NOTE 1 The combination may be different for different building or space categories.		
NOTE 2 The type of service mix may have an effect on the choices in this overarching document and in the other EPB standards. This property is therefore inherited by the other EPB standards, where relevant.		

A.4 Method

Table A.11 — Electricity use types (See 7.3.3.4.)

Electric energy use type	Identifier
Main input to a generator	EL_USE_MAIN
Auxiliary energy	EL_USE_AUX
Direct heating (Joule effect)	EL_USE_JOULE
Non EPB uses	EL_USE_NEPB

Table A.12 — Electricity generation types (See 7.3.3.6 and 9.6.6.2.4)

Electric energy generation type	Identifier
Photovoltaic	EL_PROD_PV
Wind turbine	EL_PROD_WIND
Cogeneration	EL_PROD_CHP

Table A.13 — Gross calorific value of some common solid fuels (See 7.3.4 and 9.6.2)

Kütus	Fuel	Gross calorific value kWh/kg
Halupuit (niiskussisaldus* ≤20%)	Fire wood	4,1
Puitbrikett (niiskussisaldus* ≤12%)	Wood briquette	4,6
Puitpellet (niiskussisaldus* ≤20%)	Wood pellets	4,6
Turbabrikett (niiskussisaldus* ≤12%)	Peat briquette	4,2
Tükkturvas (niiskussisaldus* ≤40%)	Sod peat	3,4
Freeturvas (niiskussisaldus* ≤50%)	Milled peat	2,8
Kivisüsi / coal	Coal	7,0

^a Add the rows of the energy carriers.
* Moisture content in mass percent

Regulation no 58, adopted on 05.06.2015, 'Methodology for calculating energy efficiency of buildings', Annex 5 - 'Lower calorific values of fuels'. https://www.riigiteataja.ee/aktiisa/1070/7202/0012/MKM_m58_lisa5.pdf#

Table A.14 — Gross calorific value of some common liquid fuels (See 7.3.4 and 9.6.2)

Kütus	Fuel	Density kg/l	Gross calorific value kWh/kg
Põlevkiviõli	Oil shale		10,8
Kerge kütteõli	Light fuel oil		11,7
Diislikütus	Diesel fuel		11,7
Masuut	Mazut (heavy fuel oil)		11,3
Vedelgaas (propaan+butaan)	Liquified gas (propoane + butane)		12,8

^a Add the rows of the energy carriers.
Regulation no 58, adopted on 05.06.2015, 'Methodology for calculating energy efficiency of buildings', Annex 5 - 'Lower calorific values of fuels'. https://www.riigiteataja.ee/aktiisa/1070/7202/0012/MKM_m58_lisa5.pdf#

Table A.15 — Gross calorific values of some gaseous energy carriers (See 7.3.4 and 9.6.2)

Kütus	Fuel	Density kg/m ³	Gross calorific value kWh/m ³
Biogaas*	Biogas*		6
Maagaas	Natural gas		9,3

^a Add the rows of the energy carriers.
* Approximate value, actual value varies from heavy commodity.
Regulation no 58, adopted on 05.06.2015, 'Methodology for calculating energy efficiency of buildings', Annex 5 - 'Lower calorific values of fuels'. https://www.riigiteataja.ee/aktiisa/1070/7202/0012/MKM_m58_lisa5.pdf#

Table A.16 — Weighting factors (based on gross or net calorific value) (See 7.3.5, 9.5.1, 9.6.2, 9.6.5 and 9.6.6.3)

	Energy carrier	f_{Pnren}	f_{Pren}	f_{Ptot}	^a
	Delivered from distant				
1	Fossil fuels	Solid	1,0	-	-
2		Liquid	1,0	-	-
3		Gaseous	1,0	-	-
4	Bio fuels	Solid	0,65	-	-
5		Liquid	0,65	-	-
6		Gaseous	0,65	-	-
7	Electricity	2,0	-	-	-
	Delivered from nearby				
8	District heating / effective DH	0,9 / 0,65	-	-	-
9	District cooling / effective DC	0,4 / 0,2	-	-	-
	Delivered from on-site				
10	Solar	PV electricity	0	-	-
11		Thermal	0	-	-

Energy carrier		f_{Pnren}	f_{Pren}	f_{Ptot}	^a
12	Wind	0	-	-	-
13	Environment	Geo-, aero-, hydrothermal	0	-	-
Exported					
14	Electricity	To the grid	0	-	-
15		To non-EPB uses	2,0	-	-

^a Add a column in case of other requirements, e.g., CO₂ requirement.
^b Add the rows of the energy carriers.
Regulation no 63, § 9. Weighing factors of energy carriers. <https://www.riigiteataja.ee/akt/107072020011>

Table A.17 — k_{exp} -factor (See 7.3.5 and 11.6.2.1)

Description	Value
k_{exp} factor that is used to control which part of the exported energy is included in the energy performance of the building	0

Table A.18 — Building services considered in the energy performance calculation (See 8.2 and 8.5)

Combination of services type	Choice: included in the energy performance calculation < one column per listservices type, see Table A.10 >	
Building service ^a	<i>EPB_LISTSERVICES_RES</i>	<i>EPB_LISTSERVICES_NRES</i>
Heating	Yes	Yes
Cooling	Yes	Yes
Ventilation	Yes	Yes
Humidification	No	No
Dehumidification	Yes	Yes
Domestic hot water	Yes	Yes
Lighting	Yes	Yes
External lighting	No	No
People transport (e.g., elevators, escalators)	No	No
Other services consuming electricity (e.g., appliances)	Yes	Yes
Others (please specify)	Lighting and appliances	Appliances

^a Add rows or edit the lines in case of other/more differentiated services.

Table A.19 — Principle assumed presence of systems (See 9.2)

Method	Choice Yes/No ^a
1 Principle "Assumed system"	NO
2 Principle "Presence of system"	YES
3 Other principle	NO
In case of method 3:	
Reference to procedure:	< reference >

^a Only one choice possible; choice may be differentiated per service.
NOTE Consistency with the conditions of use (module M1-6) is required.

Table A.20 — Specification of the useful floor area (See 9.3)

Specification and/or reference to document with more information
Net heated floor area (m ²)

Table A.21 — Type or types of metric for the building size (See 9.3 and 9.4)

Quantity	Unit	Specification and/or reference to document with more information
Reference floor area	m ²	Net heated floor area (m ²)

NOTE Add rows for each metric.

Table A.22 — Which space categories are contributing to the reference size (See 9.4)

Space categories	Contributing?	If YES: (Optional) fraction of size contributing to ref. size ($f_{ref,cat.}$) Default value = 1 ^a
All space categories belonging to heated area	YES	1
^a The choices in this table are choices that actually cannot be made without the holistic view on all EPB standards. The categorization of spaces is directly related to the assumed conditions of use for each space category and to the specific rules for combining spaces into zones. For instance, a fine subdivision into different space categories, with for each space category different conditions of use (such as temperature settings, ventilation rates, lighting levels, etc.) could easily lead to unwanted complexities in the assessment.		

Table A.23 — Perimeter specification (9.5.1 and 9.6.1)

Energy carrier	Specification of nearby perimeter (see 3.4.24)
Bio fuels	Solid
	Liquid
	Gaseous
Electricity	Nearby RE production needs to have cable connection to the building
District heating	Distant
District cooling	Distant

Table A.24 — Perimeter choice (See 9.5.1 and 9.7)

Perimeter choice	Choice - RER calculation (renewable energy)	Choice - RER calculation (total energy)	Choice - EPB calculation (delivered energy)
On-site	Not applicable	Not applicable	Yes
Nearby	Not applicable	Not applicable	Yes
Distant	Not applicable	Not applicable	Yes

Table A.25 — Conversion factors for net to gross calorific values for energy carriers (See 9.6.2)

Energy carrier ^a	Conversion factor $f_{GCV/NCV}$
Oil	Not applicable
Gas	Not applicable
LPG	Not applicable
Coal	Not applicable
Lignite	Not applicable
Wood	Not applicable
^a Add the rows of the energy carriers. Note: No official primary energy gross/net conversion factors are used in Estonia.	

Table A.26 — Overheads included in the primary energy and CO₂ emission factors (See 9.6.2 and 9.6.3)

Included overheads	Primary energy factors	CO ₂ emission coefficients
— Energy to extract the primary energy carrier	Yes	Not applicable
— Energy to refine and/or to transform the primary energy carrier	Yes	Not applicable
— Energy to transport the primary energy carrier	No	Not applicable
— Energy used for any other operations necessary for the delivery to the building (e.g., storage)	No	Not applicable
— Energy to build, operate and dismantle the refinery units and/or the transformation units	No	Not applicable
— Energy to build, operate and dismantle the transportation system	No	Not applicable

— Energy to clean up or dispose the wastes	No	Not applicable
— Energy embedded in materials	No	Not applicable
Other greenhouse gases than CO ₂ included ^a	n.a.	Not applicable
Applicable for ratings based on	net calorific value	Not applicable

^a It is possible to list the other greenhouse gases.

Table A.27 — Basis for energy performance of buildings (See 9.6.2)

Basis for the building energy performance	Choice	Application type (see Table A.8/B.8)
Total energy performance ($E_P = E_{Ptot}$) or non-renewable energy performance ($E_P = E_{Pnren}$)	$E_P = E_{Pnren}$	In all building categories
NOTE Add lines in case of more assessment purposes.		

Table A.28 — Priority for generation system, export (See 9.6.6.2.4)

Priority level to export <i>Not applicable</i>	Priority identifier <i>Not applicable</i>	Generation type identifier <i>Not applicable</i>
Priority level 1 (highest)	EL_EXP_PRIO_LEVEL_1	EL_PROD_PV
Priority level 2	EL_EXP_PRIO_LEVEL_2	EL_PROD_WIND
Priority level 3 (lowest)	EL_EXP_PRIO_LEVEL_3	EL_PROD_CHP
Note: No regulations on priorities.		

Table A.29 — Subdivision rules (see 10.5.1)

Type of zone or service area ^a	General rule	Specific rules (if any)
Thermal zone	Heated floor area weighted	-
Heating system service area	Heated floor area weighted	-
Cooling system service area	Heated floor area weighted	-
Ventilation service area	Heated floor area weighted	-
DHW service area	Heated floor area weighted	-
Lighting service area	Heated floor area weighted	-
^a Add lines in case of more service areas.		

Table A.30 — Energy flows taken into account in the building balance (See 11.6.2.1)

System or component	Counted as delivered energy? (Yes/No) ^a	Exported energy taken into account under Step B of the energy performance assessment (11.6.2.1) ^b (Yes/No)
Needs		
Passive renewable energy	No	Not applicable
On-site		
Technical building systems located “on-site” and producing energy from renewable sources	Yes	No
Solar energy captured by thermal solar panels	Yes	No
Free cooling as renewable energy	Yes	Not applicable
Free heating as renewable energy	Yes	Not applicable
Heat from environment captured by heat pumps	Yes	No
Electricity produced by wind power	Yes	No
Nearby	^c	
District heating	Yes	No

District cooling	Yes	No
Heat produced by biomass	Yes	No
Distant	^d	
Electricity production from renewable sources	Yes	No
<p>^a A “No” in the second column implies “not applicable” in the third column. ^b Only relevant if $k_{exp} > 0$, see Table A.29/B.29. ^c If choice of perimeter is “nearby” (see Table A.19). ^d If choice of perimeter is “distant” (see Table A.19). NOTE Rows may be deleted or added.</p>		

Table A.31 — Electrical uses not satisfied by on-site electricity production (See 11.6.2.4)

On-site electricity production type	Not allowed uses	Comment
All	None	Any EPB use of electricity can be satisfied by any type of on-site electricity production
<i>Electricity production type identifier</i>	<i>Electrical use identifier</i>	

Table A.32 — Matching factor of produced and used electricity (See 11.6.2.4)

Calculation interval	Case	Matching factor function and parameters
<i>Time interval description</i>	<i>Case description</i>	<i>Function to get the matching factor and parameters of the function</i>
Hourly	All building categories	$f_{match}=1$
Monthly Not applicable	All building categories	Not applicable

