Oggetto:

Progetto	**Allegato nazionale alla UNI EN 52000-1**
Codice WI	-
Revisione	**2019.10.14**
Stato	
Titolo ITA	**Formato per selezione degli input e del metodo – Valori e scelte nazionali**
Titolo ENG	**Input and method selection data sheet - National values and choices**
Sommario ITA	-
Sommario ENG	-
Note	Le parti evidenziate in giallo verranno aggiornate prima della pubblicazione in funzione delle altre norme in lavorazione. Per facilitare la comprensione in raccordo con la relativa norma, l'allegato è redatto in gran parte in lingua inglese. Esso verrà tradotto in italiano solo dopo la sua approvazione definitiva.

ABOUT THIS DOCUMENT

The following is a sample text showing how to compile a national application document of an EN-EPB standard (mandate M/480).

Each EN-EPB standard requires a national application document that provides the data listed in normative annex A by confirming or replacing default data given in informative annex B.

The following text has been taken from a draft produced during the editing process of the application document for EN 52.XXX being developed in Italy. It is not the final document and it is neither intended to represent the Italian position nor to give any preference and/or support to any option. It only shows a possible approach on how prepare such national annexes.

It is distributed on request of EPB-Center because it is deemed useful to give an example of the possible contents of a national application document.

The document was released without any comment and/or rationale of the choices.

Any comment and/or explanation added shall be clearly identified as not being part of the original text.

Annex NA
(normative)

Input and method selection data sheet
- National values and choices

NA.1 General

This Annex NA gives national values and choices for the application of the EN ISO 52000-1 according to the building type and the purpose of the application (e.g. energy performance certificate, building permit, etc.).

Values and choices are provided in accordance with the Italian national legal documents[1]. For other purposes, outside the scope of national legal documents, other values and choices are allowed.

For more information about the application of this standard in Italy see the UNI/TS XXX.

This annex complies with the template given in Annex A.

NA.2 References

The references, identified by the module code number, are given in a table Table NA.1 .

[1] At the date of publication of this annex the Legislative Decree 192/05 is in force with its subsequent amendments and additions and its application decrees (DM 26 June 2015)

Table NA.1 — References (See Clause 2)

Reference	Reference document	
	Number	Title
M1–1	UNI EN ISO 52000-1	This standard
M1–2		See M1–1
M1–3		See M1–1
M1–4	UNI EN ISO 52003-1	*Energy performance of buildings – Indicators, requirements and certification – Part 1: General aspects and application to the overall energy performance*
M1–5, M1–7		See M1–1
M1–8, M1–9		See M1–1
M1–10		
M1–6, M2–7	UNI EN ISO 17772-1	*Energy performance of buildings – Indoor environmental quality – Part 1: Indoor environmental input parameters for the design and assessment of energy performance of buildings*
	UNI EN 16798–1 or UNI EN 15251	*Energy performance of buildings – Part 1: Indoor environmental input parameters for design and assessment of energy performance of build- ings addressing indoor air quality, thermal environment, lighting and acoustics* –Module M1–6; (revision of EN 15251)
M1–11		See M1–6
M1–13	UNI EN ISO 52010-1	*Energy performance of buildings – Overarching assessment pro- cedures of external environment conditions – Part 1: Calculation procedures*
M1–14	UNI EN 15459–1	*Economic evaluation procedure for energy systems in buildings*
M2–2	UNI EN ISO 52016-1	*Energy performance of buildings – Calculation of the energy needs for heating and cooling, internal temperatures and heating and cooling load in a building or building zone – Part 1: Calculation procedures*
M2–3	UNI EN ISO 52017-1	*Energy performance of buildings – Calculation of the dynamic ther- mal balance in a building or building zone – Part 1: Generic calcula- tion procedure*
M2–4	UNI EN ISO 52018-1	*Energy performance of buildings – Indicators for partial EPB require- ments related to thermal energy balance and fabric features – Part 1: Overview of options*
M2–5.1	UNI EN ISO 13789	*Thermal performance of buildings – Transmission and ventilation heat transfer coefficients – Calculation method*
M2–5.2	UNI EN ISO 13370	*Thermal performance of buildings – Heat transfer via the ground – Calculation methods*
M2–5.3	UNI EN ISO 6946	*Building components and building elements – Thermal resistance and thermal transmittance – Calculation method*
M2–5.4	UNI EN ISO 10211	*Thermal bridges in building construction – Heat flows and surface temperatures – Detailed calculations*
M2–5.5	UNI EN ISO 14683	*Thermal bridges in building construction – Linear thermal transmit- tance – Simplified methods and default values*
M2–5.6	UNI EN ISO 10077-1	*Thermal performance of windows, doors and shutters – Calculation of thermal transmittance – Part 1: General*
M2–5.7	UNI EN ISO 10077-2	*Thermal performance of windows, doors and shutters – Calculation of thermal transmittance – Part 2: Numerical method for frames*
M2–5.8	UNI EN ISO 12631	*Thermal performance of curtain walling – Calculation of thermal transmittance*
M2–9	UNI EN ISO 13786	*Thermal performance of building components – Dynamic thermal characteristics – Calculation methods*

Table NA.1 *(continued)*

Reference	Reference document

	Number	Title
M2–7		See M2–5
M2–8	UNI EN ISO 52022-3	*Energy performance of buildings – Thermal, solar and daylight properties of building components and elements – Part 3: Detailed calculation method of the solar and daylight characteristics for solar protection devices combined with glazing*
	UNI EN ISO 52022-1	*Energy performance of buildings – Thermal, solar and daylight properties of building components and elements – Part 1: Simplified calculation method of the solar and daylight characteristics for solar protection devices combined with glazing*
M3–1	UNI EN 15316–1	*Heating systems and water based cooling systems in buildings — Method for calculation of system energy requirements and system efficiencies — Part 1: General and Energy performance expression*
M3–2		See M3–1
M3–3	UNI EN 12831–1	*Heating systems in buildings — Method for calculation of the design heat load - Heating systems and water based cooling systems in buildings - Method for calculation of the design heat load - Part 1: Space heating load*
M3–4	UNI EN 15316–1	See M3–1
M3–5	UNI/TS 11300-2-1	*Heating systems and water based cooling systems in buildings - Method for calculation of system energy requirements and system efficiencies: Space emission systems (heating and cooling)*
M3–6	UNI/TS 11300-2-2	*Heating systems and water based cooling systems in buildings - Method for calculation of system energy requirements and system efficiencies: Space distribution systems (DHW, heating and cooling)*
M3–7	UNI/TS 11300-2-3	*Heating systems and water based cooling systems in buildings - Meth- od for calculation of system energy requirements and system efficien- cies - Part 5: Space heating and DHW storage systems (not cooling)*
M3–8	UNI EN 15316–4-1	*Heating systems and water based cooling systems in buildings — Method for calculation of system energy requirements and system ef- ficiencies — Part 4–1: M 3–8-1 and M 8–8-1 Space heating and DHW generation systems, combustion systems (boilers, biomass)*
	UNI/TS 11300-4-1	*Heating systems and water based cooling systems in buildings — Method for calculation of system energy requirements and system efficiencies: Space heating generation systems, heat pump systems*
	UNI EN 15316–4-3	*Heating systems and water based cooling systems in buildings - Method for calculation of system energy requirements and system efficiencies - Part 4–3: Heat generation systems, thermal solar and photovoltaic systems*
	UNI/TS 11300-4-2	*Heating systems and water based cooling systems in buildings - Method for calculation of system energy requirements and system efficiencies: Heat generation systems, building-integrated cogeneration systems*
	UNI EN 15316–4-5	*Heating systems and water based cooling systems in buildings - Method for calculation of system energy requirements and system efficiencies - Part 4–5: District heating and cooling*
	UNI EN 15316–4-8	*Heating systems and water based cooling systems in buildings -Method for calculation of system energy requirements and system efficiencies - Part 4–8: Space heating generation systems, air heating and overhead radiant heating systems, including stoves (local)*

Table NA.1 *(continued)*

Reference	Reference document	
	Number	Title
M3–9		

M3–10	UNI EN 15378–3	*Energy performance of buildings – Module M3–10 and M8–10 – Heating and domestic hot water measured energy performance*
M3–11	UNI EN 15378–1	*Energy performance of buildings – Heating systems in buildings – Inspection of heating and domestic hot water systems*
M3–12		
M4–1	UNI EN 16798–9	*Energy performance of buildings – Part 9: Ventilation for buildings – Module M4–1 – Calculation methods for energy requirements of cooling systems – General*
M4–2		
M4–3	UNI EN 16798–11	*Energy performance of buildings – Part 11: Module M4–3 – Calculation of the design cooling load*
M4–4	UNI EN 16798–9	See M4–1
M4–5	UNI EN 15316–2	See M3–5
M4–6	UNI EN 15316–3	See M3–6
M4–7	UNI EN 16798 — 15	*Energy performance of buildings — Part 15: Module M4–7 – Calculation of cooling systems – Storage – General*
M4–8	UNI EN 16798–13	*Energy performance of buildings – Part 13: Module M4–8 – Calculation of cooling systems – Generation*
	UNI EN 15316–4-5	See M3–8
M4–9		
M4–10		
M4–11	UNI EN 16798–17	*Energy performance of buildings — Part 17: Ventilation for buildings - Module M4–11, M5–11, M6–11, M7–11 – Guidelines for inspection of ventilation and air conditioning systems*
M4–12		
M5–1	UNI EN 16798–3	*Energy performance of buildings – Part 3: Ventilation for non-residential buildings – Performance requirements for ventilation and room-conditioning systems*
M5–2		
M5–3		
M5–4	UNI EN 16798–3	See M5–1
M5–5	UNI EN 16798–7	*Energy performance of buildings – Module M5–5 – Ventilation for buildings – Calculation methods for energy requirements of ventilation and air conditioning systems – Part 7: Emission (determination of air flow rates)*
M5–6	UNI EN 16798–5	*Energy performance of buildings – Modules M5–6, M5–8, M6–5, M6–8, M7–5, M7–8 – Ventilation for buildings – Calculation methods for energy requirements of ventilation and air conditioning systems – Part 5–1: Distribution and generation: Method 1*
M5–7		
M5–8	UNI EN 16798–5	See M5–6
M5–9		
M5–10		
M5–11	UNI EN 16798–17	See M4–11
M6–1		See M5–1
M6–2		See M5–2

Table NA.1 *(continued)*

Reference	Reference document	
	Number	Title

M6–3		See M5–3
M6–4		See M5–4
M6–5	UNI EN 16798–5	See M5–6
M6–6		See M5–6
M6–7		See M5–7
M6–8	UNI EN 16798–5	See M5–6
M6–9		See M5–9
M6–10		See M5–10
M6–11	UNI EN 16798–17	See M5–11
M7–1		See M5–1
M7–2		See M5–2
M7–3		See M5–3
M7–4		See M5–4
M7–5	UNI EN 16798–5	See M5–6
M7–6		See M5–6
M7–7		See M5–7
M7–8	UNI EN 16798–5	See M5–6
M7–9		See M5–9
M7–10		See M5–10
M7–11	UNI EN 16798–17	See M5–11
M8–1	UNI EN 15316–1	See M3–1
M8–2	UNI EN 12831–3	*Domestic hot water systems heat load and characterization of needs*
M8–3	UNI EN 12831–3	See M8–2
M8–4	UNI EN 15316–1	See M8–1
M8–5		
M8–6	UNI EN 15316–3	See M3–6
M8–7	UNI EN 15316–5	See M3–7
M8–8	UNI EN 15316–4-1	See M3–8
	UNI EN 15316–4-3	See M3–8
	UNI EN 15316–4-4	See M3–8
	UNI EN 15316–4-5	See M3–8
	UNI EN 15316–4-8	See M3–8
M8–9		
M8–10	UNI EN 15378–3	See M3–10
M8–11	UNI EN 15378–1	See M3–11
M9–1	UNI EN 15193–1	*Energy performance of buildings – Module M9 – Energy requirements for lighting – Part 1: Specifications*
M9–2	UNI EN 15193–1	See M9–1
M9–3		
M9–4	UNI EN 15193–1	See M9–1
M9–5		
M9–6		
M9–8		

Table NA.1 *(continued)*

Reference	Reference document

	Number	Title
M9–10	UNI EN 15193–1	See M9–1
M9–11	UNI EN 15193–1	See M9–1
M10–1	UNI EN 15232	*Energy performance of buildings – Contribution of Building Automation, Controls and Building Management*
M10–2		
M10–3		
M10–4		
M10–5	UNI EN 15232	See M10–1
M10–6	UNI EN 15232	See M10–1
M10–7	UNI EN 15232	See M10–1
M10–8	UNI EN 15232	See M10–1
M10–11		*Energy Performance of Buildings – Inspection for Building Automation and Control*
M10–12		*Energy Performance of Buildings – Building Management system*
M11–1		
M11–4		
M11–8	UNI EN 15316–4-3	See M3–8
	UNI EN 15316–4-4	See M3–8
	UNI EN 15316–4-5	See M3–8
	UNI EN 15316–4-10	Heating systems and water based cooling systems in buildings - Method for calculation of system energy requirements and system efficiencies - Part 4–10: Wind power generation systems
M12-1	UNI/TS 11300-6	Energy performance of buildings - Evaluation of energy need for lifts, escalators and moving walkways, Module 12-1
M13-1	UNI/TS 11300-7	Energy performance of buildings - Method for calculation of system energy requirements and system efficiencies – Electrical energy storage, Module M13-1

NA.3 Overarching preparation steps

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

Application	Building category	Assessment type	Conditions
Energy performance certificate	All categories	As built	- Existing building - New building (after costruction) - Renovation
Energy performance certificate	All categories	Design	- New building (before costruction) - Renovation (before costruction)
Building permit	All categories	Design	-
Permit to use	All categories	As built	-
Energy audit	All categories	Tailored	-

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

EPB_OBJECT_TYPE			
Type [a]	**Description**	**Subset [b]**	**Comments**
EPB_OBJECT_BLDNG_TOT	Whole building	1	For the energy performance certificate only when the whole building is a single unit For other assessment it is possible to consider the whole building
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)	1	For possible partial energy requirements
EPB_OBJECT_USER_PUBL	Public building	1	For possible different energy requirements
EPB_OBJECT_USER_HIST	Historic building	1	For possible different energy requirements

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

BLDNGCAT_TYPE		
Type	**Description**	**Comments** [a]
BLDNGCAT_RES_SINGLE	Single-family houses of different types	E.1.(1)
BLDNGCAT_RES_APPBLOCK	Apartment blocks	E.1.(1)
BLDNGCAT_RES_ELDER	Homes for elderly and disabled people	E.3
BLDNGCAT_RES_COLL	Residence for collective use	E.1.(1)
BLDNGCAT_RES_MOBIL	Mobile home	E.1.(1)
BLDNGCAT_RES_HOL	Holiday home	E.1.(2)
BLDNGCAT_OFF	Offices	E.2
BLDNGCAT_EDUC	Educational	E.7
BLDNGCAT_HOSP	Hospitals	E.3
BLDNGCAT_HOTEL	Hotels	E.1.(3)
BLDNGCAT_REST	Restaurants and bar	E.4.(3)
BLDNGCAT_SPORT	Sports facilities	E.6
BLDNGCAT_RETAIL	Wholesale and retail trade services	E.5
BLDNGCAT_DATA_CENTER	Data centre	E.8
BLDNGCAT_INDUS	Industrial	E.8
BLDNGCAT_WAREH	Warehouse	E.8
BLDNGCAT_WORKS	Workshops	E.8
BLDNGCAT_AGRIC	Non-residential agricultural	E.8
BLDNGCAT_SPORT	Sport building	E.6
BLDNGCAT_AMUSM	Cinema, theatres and amusement buildings	E.4.(1) E.4.(3)
BLDNGCAT_REL	Religious buildings	E.4.(2)
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. [a] With reference to the building categories of the DPR 412/93		

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

Building categories	**Identifier**	**Included in EPB assessment** [a] **Yes/No**
Residential buildings:		
Single family houses of different types	*BLDNGCAT_RES_SINGLE*	YES
Apartment block	*BLDNGCAT_RES_APPBLOCK*	YES
Homes for elderly and disabled people	*BLDNGCAT_RES_ELDER*	YES
Residence for collective use	*BLDNGCAT_RES_COLL*	YES
Mobile home	*BLDNGCAT_RES_MOBIL*	YES
Holiday home	*BLDNGCAT_RES_HOL*	YES
Non-residential buildings:		
Offices	*BLDNGCAT_OFF*	YES

Educational buildings	*BLDNGCAT_EDUC*	YES
Hospitals	*BLDNGCAT_HOSP*	YES
Hotels	*BLDNGCAT_HOTEL*	YES
Restaurants and bar	*BLDNGCAT_REST*	YES
Sports facilities	*BLDNGCAT_SPORT*	YES
Wholesale and retail trade services	*BLDNGCAT_RETAIL*	YES
Data centre	*BLDNGCAT_DATA_CENTER*	NO
Industrial sites	*BLDNGCAT_INDUS*	YES [b)]
Warehouse	*BLDNGCAT_WAREH*	NO
Workshops	*BLDNGCAT_WORKS*	YES
Non-residential agricultural	*BLDNGCAT_AGRIC*	NO
Sport building	*BLDNGCAT_SPORT*	YES
Cinema, theatres and amusement buildings	*BLDNGCAT_AMUSM*	YES
Religious buildings	*BLDNGCAT_REL*	NO

[a] In questa colonna sono indicate le categorie di edifici che, al momento della pubblicazione della presente versione della norma, sono incluse dal campo di applicazione del D.Lgs 192/05 e successive modificazioni e integrazioni. Per finalità e ambiti diversi da quelli del D.Lgs 192/05 e successive modificazioni e integrazioni la valutazione delle prestazioni energetiche dell'edificio può essere effettuata o meno anche per tutte le altre categorie, adottando opportuni dati di input e accorgimenti di calcolo.

[b] Al momento della pubblicazione della presente versione della norma, sono esclusi dal campo di applicazione del D.Lgs 192/05 e successive modificazioni e integrazioni gli edifici industriali e artigianali quando gli ambienti sono riscaldati per esigenze del processo produttivo o utilizzando reflui energetici del processo produttivo non altrimenti utilizzabili

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

Choice		
Type	**Choice**	**Comments**
Differentiation of space categories in a building	Yes	-

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 NA.7a — Space categories (See Clauses 6 and 9) – Residential Buildings

SPACECAT_TYPE_RES [a]		
Type	**Description**	**Comments**
SPACECAT_RES_LIV	Residential living space, study	-
SPACECAT_RES_KITC	Kitchen	-
SPACECAT_RES_BATH	Bath room or toilet	-
SPACECAT_RES_BED	Bed room	-
SPACECAT_RES _OTHER	Hall, corridor, staircase and similar	-

NOTA 1
Per una migliore modellizzazione dell'edificio, qualora se ne ravvisi la necessità, è possibile assegnare allo spazio una tipologia specifica di altre destinazioni d'uso, previa verifica della compatibilità dei profili di occupazione, di uso dei servizi e dei parametri di input

Table NA.7b — Space categories (See Clauses 6 and 9) – Non Residential Buildings

SPACECAT_TYPE_NRES		
Type	**Description**	**Comments**
SPACECAT_NRES_BATH	Bath room or toilet	-
SPACECAT_OFF_SINGLE	Office space (single office)	-
SPACECAT_OFF_OPENSPACE	Office space (open space)	-
SPACECAT_EDUC	Educational space	-
SPACECAT_HOSP_BED	Hospital bed room	-
SPACECAT_HOTEL	Hotels room	-
SPACECAT_REST	Restaurant space	-
SPACECAT_REST_KITCH	Restaurant kitchen	-
SPACECAT_MEET	Meeting or seminar space	-
SPACECAT_AUDIT	Auditorium, lecture room	-
SPACECAT_THEAT	Theatre or cinema space	-
SPACECAT_SERVER	Server or computer room	-
SPACECAT_SPORT	Sport facilities	-
SPACECAT_RETAIL	Wholesale and retail trade services space (shop)	-
SPACECAT_SPA	Spa area with sauna shower and/or relaxing area	-
SPACECAT_SWIMM	Space with indoor swimming pool	-
SPACECAT_STOR	Storage space	-
SPACECAT ENGINE	Engine room	-
SPACECAT_REL	Religious space	-
SPACECAT_NRES_OTHER	Hall, corridor, staircase and similar	-

NOTA 1
Per una migliore modellizzazione dell'edificio, qualora se ne ravvisi la necessità, è possibile assegnare allo spazio una tipologia specifica di altre destinazioni d'uso, previa verifica della compatibilità dei profili di occupazione, di uso dei servizi e dei parametri di input

NOTE 2 Each space category requires a set of conditions of use (temperature settings, ventilation, and lighting requirements, domestic hot water needs, etc.), to be specified in M1–6. Qualora non sia specificato un set di condizioni d'uso di utilizzi quello della relativa destinazione d'uso (categoria di edificio)

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

EPB_APPLIC_TYPE		
Type	**Description**	**Comments**
EPB_APPLIC_REQ	To check compliance with energy performance requirements	-
EPB_APPLIC_CERTIF	Energy performance certification	-
EPB_APPLIC_PERMIT_BLD	To obtain building permit	-
EPB_APPLIC_PERMIT_USE	To obtain permit to use	-
EPB_APPLIC_AUDIT	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 NA.9 — EPB assessment types (See Clauses 6 and 9)

EPB_ASSESS_TYPE (see Table 3)		
Type	**Description**	**Comments**
EPB_ASSESS_CALC_DESIGN	Calculated, design	-
EPB_ASSESS_CALC_ASBUILT	Calculated, as built	-
EPB_ASSESS_CALC_ACTUAL	Calculated, actual	-
EPB_ASSESS_CALC_TAILORED	Calculated, tailored	-
EPB_ASSESS_MEAS_ACTUAL	Measured, actual	-
EPB_ASSESS_MEAS_ CORR_CLIM	Measured, corrected for climate	-
EPB_ASSESS_MEAS_ CORR_USE	Measured, corrected for use	-
EPB_ASSESS_MEAS_STAND	Measured, standard (corrected for climate and use)	-
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 NA.10 — Combination of services types (See Clauses 6 and 9)

EPB_LISTSERVICES_**TYPE**		
Type	**Description**	**Comments**
*EPB*_LISTSERVICES_*RES*	Services included for the EPB assessment of residential buildings	-
*EPB*_LISTSERVICES_*NRES*	Services included for the EPB assessment of non-residential buildings	-
NOTE 1 The combination may be different for different building or space categories. NOTE 2 The type of services combination 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.		

NA.4 Method

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

Electric energy use type	Identifier
Main input to a generator	EL_USE_MAIN
Input to the artificial lighting	EL_USE_LIGHT
Input to ventilation system	EL_USE_VEN
Input to elevators, escalators and moving walkways	EL_USE_TRAN
Auxiliary energy	EL_USE_AUX
Direct heating (Joule effect)	EL_USE_JOULE
Non EPB uses	EL_USE_NEPB

Table NA.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
Hydro turbine	EL_PROD_HYDRO
Cogeneration	EL_PROD_CHP
Fuel Cell	EL_PROD_FUELCELL

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

Fuel	Gross calorific value [a] kWh/kg
Anthracite	8,9 – 9,7
Bituminous coal	4,7–6,9
Charcoal	8,22
Coke	7,8 – 8,6
Lignite	4,2 – 8,3
Peat	3,6 – 5,6
Wood (dry)	3,9 – 4,7
Pellet	4,88

[a] In the case of a range of values, for the assessment types "as build" and "design", take the average value.

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

Fuel	Density kg/l	Gross calorific value [b] kWh/kg
Oil		
Heating oil, light	0,84 – 0,85	12,44
Heating oil, heavy	0,96	13,94 – 11,75
Liquid gas		
80 propane:20 butane	0,52	13,83
70 propane:30 butane	0,53	13,83
60 propane:40 butane	0,53	13,81
50 propane:50 butane	0,55	13,78
Commercial propane	0,51	13,89

[a] Confidence interval for liquid gas is about ± 0,1 MJ/kg.
[b] In the case of a range of values, for the assessment types "as build" and "design", take the average value.

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

Fuel	Density kg/m³	Gross calorific value [b] kWh/m³
Natural gas L	0,64	9,75 – 9,78
Natural gas H	0,61	11,41 – 11,47
Methane	0,55	11,06 – 11,08
Propane	1,56	28,03
Butane	2,09	37,19
Hydrogen	0,09	39
Biogas	1,2	4 to 8 [a]
Biomethane		

[a] Depending on its methane content.
[b] In the case of a range of values, for the assessment types "as build" and "design", take the average value.

Table NA.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 Delivered from distant		f_{Pnren}	f_{Pren}	f_{Ptot}	K_{CO2e} (g/kW h)
1	Fossil fuels	Solid (coal)	1,10	0,00	1,10	370
2a		Liquid (heavy oil)	1,07	0,00	1,07	290
2b		Liquid (light oil, diesel)	1,07	0,00	1,07	280
3a		Gaseous (natural gas)	1,05	0,00	1,05	210
3a		Gaseous (LPG)	1,05	0,00	1,05	240
4a	Bio fuels	Solid (wood)	0,20	0,80	1,00	50
4b		Solid (pellet)	0,20	0,80	1,00	50
5		Liquid	0,40	0,60	1,00	110
6		Gaseous	0,40	0,60	1,00	110

7	Rifiuti solidi urbani		0,20	0,20	0,40	?
8	Electricity [c]		1,95	0,47	2,42	460
	Delivered from nearby					
9	District heating [a]		1,50	0,00	1,50	300
10	District cooling		0,50	0,00	0,50	170
	Delivered from on-site					
11	Solar	PV electricity	0,00	1,00	1,00	0
12		Thermal	0,00	1,00	1,00	0
13	Wind		0,00	1,00	1,00	0
14	Environment	Geo-, aero-, hydrothermal	0,00	1,00	1,00	0
	Exported [c)]					

Nota:
Alla data di pubblicazione della presente norma è in vigore il decreto "Applicazione delle metodologie di calcolo delle prestazioni energetiche e definizione delle prescrizioni e dei requisiti minimi degli edifici" del DM 26 giugno 2015. I valori riportanti in questa tabella sono quelli del suddetto DM. Per le finalità di cui al D.Lgs 192/05 e smi, la validità di tali valori è subordinata

Per finalità diverse da quelle del D.Lgs 192/05 e smi, qualora si abbiano a disposizione informazioni più precise, è possibile utilizzare valori diversi.

[a] Default value unless specific values are calculated according to legal requirements (see M3–8.5).

[b] These values are calculated on the basis of national mix for electricity production

[c] Depends on the type of on-site production (CHP, PV, etc.). See UNI/TS 11300-1 because $K_{exp} = 0$

Table NA.17 — kexp-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 NA.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**	
Building service [a]	***EPB***_LISTSERVICES_***RES***	***EPB***_LISTSERVICES_***NRES***
Heating	Yes	Yes
Cooling	Yes	Yes
Ventilation	Yes	Yes
Humidification	Yes	Yes
Dehumidification	Yes	Yes
Domestic hot water	Yes	Yes
Lighting	No	Yes
External lighting	No	No
People transport (e.g., elevators, escalators)	No	Yes
Other services consuming electricity (e.g., appliances)	No	No
Others (please specify)	No	No

[a] In questa tabella sono indicati i servizi che, al momento della pubblicazione della presente versione della norma, sono inclusi nella prestazione energetica degli edifici ai sensi del D.Lgs 192/05 e successive modificazioni e integrazioni. Per finalità e ambiti diversi da quelli del D.Lgs 192/05 e successive modificazioni e integrazioni la valutazione delle prestazioni energetiche dell'edificio può essere effettuata includendo anche altri servizi, adottando opportuni dati di input e accorgimenti di calcolo.

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

Method		**Choice Yes/No** [a]
1	Principle "Assumed system"	Riscaldamento: SI Produzione di acqua calda sanitaria in edifici residenziali: SI Altri servizi: NO
2	Principle "Presence of system"	NO
3	Other principle	NO
In case of method 3:		
	Reference to procedure:	DM 26 giugno 2015 "Linee Guida" clause 2.1

[a] Principle "Assumed system" for the Energy Performance Indicators: heating and domestic hot water for residential building and heating for non-residential building (see "DM 26 giugno 2015 - Adeguamento del decreto del Ministro dello sviluppo economico, 26 giugno 2009 - Linee guida nazionali per la certificazione energetica degli edifici")

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

Specification and/or reference to document with more information

Specification and/or reference to document with more information
It is the total net indoor area of all heated and/or cooled volumes where the height is not less than 1,50 m. This includes the horizontal plane projection of staircases at each connected floor. This area is used for the determination of specific energy performance indicators. (see also D.Lgs 192/05)

Table NA.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	Useful floor area as in UNI EN ISO 52000-1:2018, Table NA.20, with fractions according to Table NA.22 It is the union of the heated and cooled areas.

Table NA.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]
Any spaces which is heated and/or cooled for human comfort purpose	YES	1,0
Any spaces which is heated and/or cooled for any other purpose than the human comfort	NO	-
Any spaces which is not heated and/or cooled	NO	-

[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 NA.23 — Perimeter specification (9.5.1 and 9.6.1)

Energy carrier		Specification of nearby perimeter (see 3.4.24)
Fuels	Solid	Traceable supply
	Liquid	Traceable supply
	Gaseous	Traceable supply
Electricity		Having a dedicated connection, requiring specific equipment for the assessed object to be connected to it
District heating		Always nearby
District cooling		Always nearby

Table NA.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	Yes	Yes	Yes
Nearby	Yes	Yes	Yes
Distant	Yes	Yes	Yes

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

Energy carrier	Conversion factor $f_{GCV/NCV}$
oil	1,06
gas	1,11
LPG	1,09
coal	1,04
lignite	1,08
wood	1,08
NOTE Add the rows of the energy carriers.	

Table NA.26 — Overheads included in the primary energy and CO_2 emission factors (See 9.6.2 and 9.6.3)

	Primary energy factors	CO_2 emission coefficients
Included overheads		
— Energy to extract the primary energy carrier	Yes	Yes
— Energy to refine and/or to transform the primary energy carrier	Yes	Yes
— Energy to transport the primary energy carrier	Yes	Yes
— Energy used for any other operations necessary for the delivery to the building (e.g., storage)	Yes	Yes

Table NA.26 *(continued)*

	Primary energy factors	CO_2 emission coefficients
— Energy to build, operate and dismantle the refinery units and/or the transformation units	No	No
— Energy to build, operate and dismantle the transportation system	No	No
— Energy to clean up or dispose the wastes	No	No
— Energy embedded in materials	No	No
Other greenhouse gases than CO_2 included [a]	n.a.	No
Applicable for ratings based on	net calorific value	net calorific value
[a] It is possible to list the other greenhouse gases.		

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

Basis for the building energy performance	Choice	Application type (see Table NA.6)
Total energy performance ($E_P = E_{Ptot}$) or non-renewable energy performance ($E_P = E_{Pnren}$)	$E_P = E_{Pnren}$	Energy performance certificate
	$E_P = E_{Ptot}$	Building permit
	$E_P = E_{Ptot}$	Permit to use
	$E_P = E_{Ptot}$ *or* E_{Pnren}	Energy audit
	$E_P = E_{Ptot}$ *or* E_{Pnren}	Energy assessment
NOTE Add lines in case of more assessment purposes.		

Table NA.28 — Priority for generation system, use (See 9.6.6.2.4)

Priority level to use	Priority identifier	Generation type
Priority level 1 (highest)	EL _PRIO_LEVEL_1	EL_PROD_PV
Priority level 2	EL _PRIO_LEVEL_2	EL_PROD_WIND
Priority level 3	EL _PRIO_LEVEL_3	EL_PROD_HYDRO
Priority level 4	EL _PRIO_LEVEL_4	EL_PROD_OTHER_RES
Priority level 5	EL _PRIO_LEVEL_5	EL_PROD_CHP
Priority level 6 (lowest)	EL _PRIO_LEVEL_6	

Table NA.29 — Subdivision rules (see 10.5.1)

Type of zone or service area [a]	General rule	Specific rules (if any)
Thermal zone	Useful floor area weighted	See UNI EN ISO 52016-1
Heating system service area	Useful floor area weighted	See UNI EN 15316-1
Cooling system service area	Useful floor area weighted	-
Ventilation service area	Useful floor area weighted	-
DHW service area	Useful floor area weighted	See UNI EN 15316-1
Lighting service area	Useful floor area weighted	-
Transport service area	Useful floor area weighted	-

Table NA.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	No
Free heating as renewable energy	Yes	No
Heat from environment captured by heat pumps	Yes	No
Electricity produced by wind power	Yes	No
Nearby	Yes	No
District heating	Yes	No
District cooling	Yes	No
Heat produced by biomass	Yes	No
Distant	Yes	No
Electricity production from renewable sources	Yes	No

[a] A "No" in the second column implies "not applicable" in the third column.

[b] Only relevant if $k_{exp} > 0$, see Table A.19/B.19.

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

On-site electricity production type	Not allowed uses	Comment
Electricity production from RES	Heating, cooling and domestic hot water systems based on Joule effect.	Any EPB use of electricity can be satisfied by any type of on-site electricity production
EL_PROD_PV EL_PROD_WIND EL_PROD_HYDRO	EL_USE_JOULE	-

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

Calculation interval	Case	Matching factor function and parameters
Hourly	All building categories	$f_{match} = 1$
Monthly	Residential buildings without heat pump for H and C without electric energy storage	$f_{match} = [x^n + 1/x^n - k] / [x^n + 1/x^n]$ with: $x = E_{pr;el}/E_{EPus;el}$, k = carrier = 1,5 n = subsystem = 1
Monthly	Residential buildings with heat pump for H and C without electric energy storage	$f_{match} = [x^n + 1/x^n - k] / [x^n + 1/x^n]$ with: $x = E_{pr;el}/E_{EPus;el}$, k = carrier = 1 n = subsystem = 1
Monthly	Residential buildings without heat pump for H and C with electric energy storage	$f_{match} = [x^n + 1/x^n - k] / [x^n + 1/x^n]$ with: $x = E_{pr;el}/E_{EPus;el}$, k = carrier = 1 n = subsystem = 1
Monthly	Residential buildings with heat pump for H and C with electric energy storage	$f_{match} = [x^n + 1/x^n - k] / [x^n + 1/x^n]$ with: $x = E_{pr;el}/E_{EPus;el}$, k = carrier = 0,3 n = subsystem = 1
Monthly	Non Residential buildings without heat pump for H and C without electric energy storage	$f_{match} = [x^n + 1/x^n - k] / [x^n + 1/x^n]$ with: $x = E_{pr;el}/E_{EPus;el}$, k = carrier = 1,2 n = subsystem = 1

Monthly	Non Residential buildings with heat pump for H and C without electric energy storage	$f_{match} = [x^n + 1/x^n - k] / [x^n + 1/x^n]$ with: $x = E_{pr;el}/E_{EPus;el}$, k = carrier = 0,8 n = subsystem = 1
Monthly	Non Residential buildings without heat pump for H and C with electric energy storage	$f_{match} = [x^n + 1/x^n - k] / [x^n + 1/x^n]$ with: $x = E_{pr;el}/E_{EPus;el}$, k = carrier = 1 n = subsystem = 1
Monthly	Non Residential buildings with heat pump for H and C with electric energy storage	$f_{match} = [x^n + 1/x^n - k] / [x^n + 1/x^n]$ with: $x = E_{pr;el}/E_{EPus;el}$, k = carrier = 0,2 n = subsystem = 1