

The use of EPB standards in EPBD implementation in France



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General status and the way the EPB standards are playing a role in the EPBD implementation in France

French experts involved in the French building regulation and national EPBD implementation contribute also to the EPB standards development at European level. Therefore, the French building regulation and transposition of the EPBD and the EPB standards are in line regarding the principles and the general structure.

But sometimes the French regulation differ in the details, mostly due to different timelines and already existing national methods. The differences depend on the type of standards.

Standards related to the building envelope are mostly based on European standards because there is a longer experience in standardisation and lobbying of the industry to have common rules in a common market. Also, the first attention in energy performance were focused on the building envelope in the French building regulations.

The situation is a different for technical building systems (e.g. heating, ventilation) because these standards have been worked out more recently.

Also, the definition of indicators (e.g. primary energy, renewable energy ratio) differ from the European standards (e.g. EN ISO 52000-1). The French indicators have been defined at national level with a strong commitment of the building authorities to be in line with the energy policies of the French government.

The French building regulation fulfil the requirements of the EPBD. The legal requirements defined in the framework of the Energy Performance of Building Directive are quite general. Just the type of indicator is mentioned (the primary energy) without any additional details how to determine it. The EPB standard EN ISO 5200-1 is precise, but the standard is recent (published in 2017) and there is no obligation to use it at national level.

Thanks to the support provided by the European Commission to help Member States in the transposi-

tion of the EPBD, for example by developing the EPB standards (Mandate 480), by providing European wide detailed climate data or harmonised product characteristics (Ecodesign Directive, EPREL database), etc , the tendency in France is to use the work made on European level also at national level.

How the French national method is reported as required in Annex 1 of the EPBD?

The French method is compliant with the European legislation as described very generally in Annex 1 of the Directive. To get a more precise idea about the national methods, the revised Directive ask Member States to describe their national calculation methodology following the national annexes of the overarching standards, namely EN ISO 52000-1. Hereafter some examples are provided how the French method could be described by using this annex. The example is structured by main chapters (e.g. chapter A1, A2) of annex A / EN ISO 52000-1.

Chapter A.2 References

Table A.1 indicate the reference documents. The reference document for the French method is the “méthode Th-BCE”. The correspondence with the chapters of EN ISO 5200-1 of this method is provided in **Table A.1**.

References (extract from Table A.1).

Reference	Reference document	
	Number	Title
M1-1 & 3 M1-5	Chapter 1	Generalities
	Chapter 3	Description of the calculation method
M1-4,7 & 9	Chapter 3.4	Regulation outcomes and indicators
	Chapter 14	Results
	Chapter 15	Summer comfort
	Chapter 16	Part of renewables in the energy consumption

No EN or ISO standard is mentioned in **Table A.1**.

Chapter A.3 Overarching preparation steps

The **Tables A.2** to **A.10** can be all filled in to describe the French method. Additional comments are provided for a better understanding of the differences. The example of **Table A.6**, related to zoning, shows that the description allows to see the differences between the national method and EN ISO 52000. It provides information on how deeply the national calculation methods take into the different characteristics of building zones.

Differentiation of space categories (Table A.6).

Choice		
Type	Choice	Comments
Differentiation of space categories in a building	Yes	Several levels of differentiation: <ul style="list-style-type: none"> • “zone of usage” (related to the building category e.g. office, hotel) • “group”, group of spaces with the same thermal characteristics • “space” space needed for the definition of internal gains

Chapter A.4 Method

The tables in this part of Annex A of the EN ISO 52000-1 are closely linked to the calculation method and its parameters. For example, **Table A.16** allows to see the choices made in the different Member States.

In the current version of the French regulation, which will be revised in 2020, only the total primary energy factors f_{Prot} is considered. It will be changed in 2020.

France has common assessment border for all building. It is the lot were the building is located (in the EN ISO 52000-1 it is more related to the building). Therefore, the energy carriers located on-site are not counted at this assessment border. The on-site delivered energy is directly deducted from the final energy consumption.

France also defines limits for exported energy.

Weighting factors based on gross or net calorific value (Table A.16).

Energy carrier	f_{Pnren}	f_{Pren}	f_{Ptot}
Delivered from distant			
1 Natural gas			1
2 Oil			1
3 Coal			1
5 Wood			1
4 Electricity			2,58
Delivered from nearby			
6 District heating ¹	1 – RatENR_rdch	RatENR_rdch	1
7 District cooling ²	2 – RatENR_rdf	RatENR_rdf	1
Delivered from on-site			
8 PV electricity	Non-applicable: the quantity of energy coming from an on-site source is considered directly by the deduction from the final energy consumption. For the calculation of the indicator Cep the whole produced PV electricity is considered as exported (see hereafter)		
9 Thermal Solar			
10 Geothermal, aerothermal, hydrothermal (heat pumps)			
Exported (renewable energy)			
Calculation of Cep (consumption in primary energy)			2,58
11 Calculation of BEPOS and RER for the first 10 kWh _{ep} /m ² year			2,58
Calculation of BEPOS and RER for more than 10 kWh _{ep} /m ² year			1
Exported (non-renewable energy)			
Calculation of Cep			2,58
12 Calculation of BEPOS	Non-applicable: the exported energy is not considered, but the energy needed to produce the exported energy is also not counted.		

1 Each district heating network declare his specific ration of renewable energy called RatENR_rdch.

2 Each district cooling network declare his specific ration of renewable energy called RatENR_rdf.

Is the production/ preparation of the national annexes progressing and how this is influencing the chosen national options?

Even if the mandatory French method is comparable to EN ISO 52000-1 regarding the general principles, due to the differences in the details, Annex A cannot be completely used to parameter the national mandatory method (and vice versa). Therefore, it is very unlikely that the public authorities will ask to produce a national annex.

But the EN ISO 52000-1 can also be used on a voluntary basis, for example for voluntary certification schemes. In that case the national annex could be worked out by the national standardization body AFNOR. This decision was not yet taken.

France is preparing a new update of the building regulation. In this context the EN ISO 52000-1 has been analysed. It is planned to get closer to the EN ISO 52000-1 especially for the definition of indicators. For example, as mentioned before, by using the

primary energy factor to distinguish between renewable and non-renewable primary energy.

Resume

Around 30 pages (the double of Annex B defining the default values in EN ISO 52000-1) are needed to describe the French method by using Annex A of EN ISO 52000-1. Again 30 pages more are needed to give a better understanding on the indicators used and the calculation method itself.

The description of the national methods required by the revised EPBD by using as common structure the Annex A of EN ISO 52000-1 is surely a first step towards more transparency and the quality assessment of national methods.

High quality building (as NZEB's) need high quality methods and especially high-quality tools. Maybe the European wide certification of these tools (software), with reference the EPB standard, could be the second step. ■