QUALITY CRITERIA FOR EPC DATA

In Table 1, the criteria used to clean the EPC data used for the dataset [1] are outlined. These criteria are based on the work by Brøgger, 2019 and Brøgger & Wittchen, 2016 [2,3] but were adapted and some were added to better fit the purpose of this data set. The modified column indicates whether that criterion was modified (✓) or added (X), compared to the ones used by the references mentioned before.

Table 1 EPC cleaning criteria based on the ones established by Brøgger, 2019 and Brøgger & Wittchen, 2016) [2,3]. The column modified indicated if that criterion was, compared to the one used by the mentioned references, either modified (✓) or added (X).

Component	Characteristic	Criterion	Modified
Building information	Heat capacity	[23,180]	✓
Building envelope information	Area	>0	
	U-value	]0.03, 7]	
	Temperature factor for roof and ceiling	[0, 1]	✓
	Temperature factor external wall and floor	[0, 1.3]	✓
Window information	Number	>0	
	Area	>0	
	U-value	]0.2, 7]	
	Temperature factor	[0, 1]	
	Fraction of glazing	[0, 1]	
	Solar transmittance (g-value)	[0, 1]	
	Shading angle horizon	[0, 90]	
	Shading angle eaves	[0, 90]	
	Shading angle left	[0, 90]	
	Shading angle right	[0, 90]	
Linear thermal transmittance information	Length	>=0	
	Heat loss	]-0.1, 10]	✓
	Temperature factor	[0,1.3]	✓
Ventilation information	Area	>0	
	Time of operation	[0, 1]	
	Natural ventilation winter	>=0	
	Mechanical ventilation winter	>=0	
	Natural ventilation summer	>=0	✓
Ventilation information	Mechanical ventilation summer	>=0	✓
	Heat recovery	[0, 1]	
	Inlet temperature	(-18, 0, 18)	

Component	Characteristic	Criterion	Modified
Internal heat gains	Area	>0	
	Heat load from persons	]0, 10]	
	Heat load from appliances inside and outside usage hours	]0, 16]	
Heat distribution system	Supply temperature	[30, 90]	
	Return temperature	[15, 90]	
	Supply temperature & Return temperature	Exists at least once	✓
	Temperature difference	>=5	✓
Heat/DHW distribution pipes	Length	>0 if temperature factor ≠ 0	X
	Heat loss	>0 if temperature factor ≠ 0	X
	Temperature factor	[0, 1]	
Domestic hot water	Average consumption	[0, 300]	
	Temperature	>=55	✓
Domestic hot water tanks	Number	>= 0	
	Volume	>= 0	
	Share of DHW	[0, 1]	
	Supply temperature	[30, 90]	
	Heat loss	>0	
	Temperature factor	[0, 1]	
Solar heating plant	Area	>= 0	✓
Heat pump	Fraction of area	[-1, 1]	✓

References

[1] M. Schaffer, M. Veit, A. Marszal-Pomianowska, M. Frandsen, M. Zbigniew Pomianowski, E. Dichmann, C. Grau Sørensen, J. Kragh, Dataset of smart heat and water meter data with accompanying building characteristics, (2023). https://doi.org/10.5278/7e93e42e-38fc-4d87-ad68-ff1a2d1091aa.

[2] M. Brøgger, Building stock energy modelling, PhD, Aalborg University, 2019. https://doi.org/10.5278/vbn.phd.eng.00077.

[3] M. Brøgger, K.B. Wittchen, Energy Performance Certificate Classifications Across Shifting Frameworks, Procedia Eng. 161 (2016) 845–849. https://doi.org/10.1016/J.PROENG.2016.08.727.