High Temperature VWART Calculation for Evinox HIU

Primary flow temperature = 70°C, DHW set point = 55°C, Space heating temperatures = 60°C/40°C

Test carried out by RISE in August 2017, Test Reference 7P03172

Manufacturer: Evinox Energy Ltd.; Model: MTP4R-1R-TL1/1B; Serial number: MTPE1B1317A11; Year of manufacture: 2017

VWART calculation prepared by Freddie Valletta of FairHeat Ltd on 6 September 2017

	VWART (°C)	Volume (m^3)
DHW	14.6	24.22
Keep warm	44.0	39.17
Space heating	41.6	46.69

	VWART with keep warm active	
Period	**VWART (°C)**	**% Time**
No heating	32.8	93%
Heating	40.8	7%
Overall	**33.4**	

	VWART with keep warm inactive *	
Period	**VWART (°C)**	**% Time**
No heating	14.6	93%
Heating	40.6	7%
Overall	**16.6**	

* HIU has ability to deactivate keep warm function

	DHW draw test results			Post DHW draw (60 seconds)	
	Power (W)	Primary flow (m^3/hr)	Return temp (°C)	Primary flow (m^3/hr)	Return temp (°C)
Low	10885	0.157	13.5	0.018	13.0
Medium	18270	0.279	15.0	0.040	15.2
High	24757	0.383	16.4	0.024	16.6

DHW draw volumes per annum		
Energy (kWh)	Time (hours)	Volume (m^3)
729	66.98	10.511
297	16.26	4.527
444	17.93	6.866

Post DHW draw volumes per annum		
Events	Avg duration (seconds)	Volume (m^3)
10000	30	1.473
660	75	0.554
300	145	0.294

Keep warm test results	
Primary flow (m^3/hr)	Return temp (°C)
0.005	44.0

Keep warm volumes per annum	
Time (hours)	Volume (m^3)
8014	39.172

	Space heating test results		
	Power (W)	Primary flow (m^3/hr)	Return temp (°C)
1 kW	1025	0.036	41.0
2 kW	2005	0.064	41.0
4 kW	3603	0.116	42.6

Space heating volumes per annum		
Energy (kWh)	Time (hours)	Volume (m^3)
98	95.64	3.406
787	392.45	25.055
565	156.80	18.229