Low Temperature VWART Calculation for Rhico Heating Solutions

Primary flow temperature = 60°C, DHW set point = 50°C, Space heating temperatures = 35°C/45°C

Test carried out by BSRIA Ltd. in July 2020, Test Reference 101924/1

Manufacturer: Rhico Heating Solutions; Model: TI45 Ultra Lean; Serial number: 428440300; Year of manufacture:2020

VWART calculation prepared by Colin Judd of BSRIA Ltd. on 08 August 2020

	VWART (°C)	Volume (m^3)
DHW	22	33.8
Keep Warm	45	56.1
Space Heating	37	53.8

	VWART with keep warm active	
Period	VWART (°C)	% Time
No Heating	36	93%
Heating	36	7%
Overall	36	

	DHW draw test results			Post DHW draw (60 Seconds)	
	Power (W)	Primary Flow (m^3/hr)	Return Temp (VWART) (°C)	Primary Flow (m^3/hr)	Return Temp (VWART) (°C)
Low	9838	0.209	20.5	0.004	20.11
Medium	16720	0.395	23.3	0.011	23.28
High	21099	0.512	24.5	0.004	24.82

DHW draw volumes per annum		
Energy (kWh)	Time (Hours)	Volume (m^3)
729	74.10	15.477
297	17.76	7.023
444	21.04	10.768

Post DHW draw volumes per annum		
Events	Avg duration (Seconds)	Volume (m^3)
10000	30	0.315
660	75	0.144
300	145	0.044

Keep warm test results	
Primary Flow (m^3/hr)	Return Temp (VWART) (°C)
0.0070	44.6

Keep Warm volumes per annum	
Time (Hours)	Volume (m^3)
8011	56.051

	Space Heating Test Results		
	Power (W)	Primary Flow (m^3/hr)	Return Temp (VWART) (°C)
1kW	1106	0.043	36.3
2kW	1930	0.069	35.8
4kW	4038	0.156	37.4

Space Heating volumes per annum		
Energy (kWh)	Time (Hours)	Volume (m^3)
98	88.64	3.825
787	407.72	28.117
565	139.93	21.839