Heat Halo U-Value Measurement Report

Written by James Banks

BUILD TEST SOLUTIONS

Version 1.0.0
Date 24/04/2026

Introduction

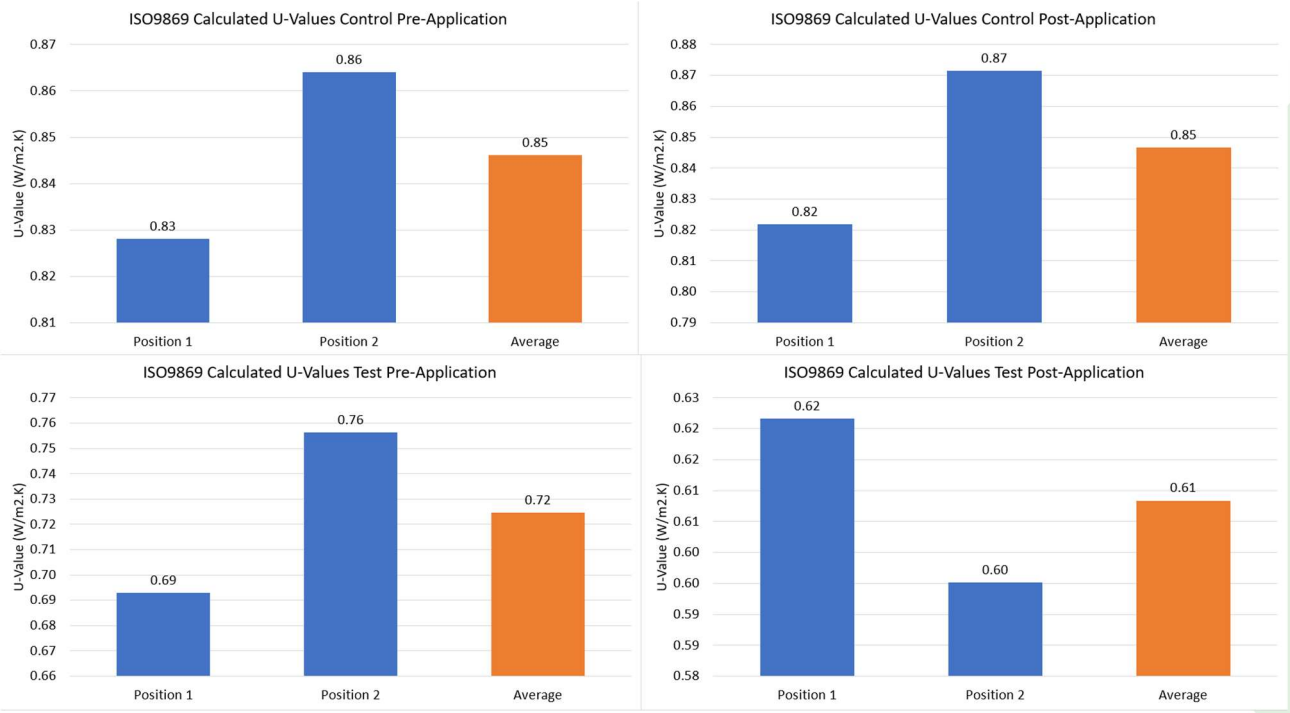
Build Test Solutions Ltd were commissioned by Heat Halo to evaluate the in-situ thermal performance of a fabric coating product applied at a test property in Binfield, Berkshire. Baseline U-Values were measured following BS ISO 9869-1:2014 in a room set to be treated and an adjacent control room from 02/04/2026 to 20/04/2026.

Summary Results

Measured U-values during the pre-treatment period averaged 0.85±0.12 W/m²k in the control location and 0.72±0.1 W/m²k in the test location. Post treatment these values were 0.85±0.12 W/m²k & 0.61±0.09 W/m²k respectively. Resulting in a 15% reduction in U-value in the test location. (See Annex 1-4 for more detail).

Results Table

	Measured U-Value Plate 1 (W/m²K)	Average Absolute Heat Flux Plate 1 (W/m²)	Measured U-Value Plate 2 (W/m²K)	Average Absolute Heat Flux Plate 2 (W/m²)
Pre Treatment (Control)	0.83 ± 0.12	7.68	0.86 ± 0.12	8.01
Pre Treatment (Test)	0.69 ± 0.10	10.17	0.76 ± 0.11	9.92
Post Treatment (Control)	0.82 ± 0.12	5.55	0.87 ± 0.12	5.89
Post Treatment (Test)	0.62 ± 0.08	9.89	0.60 ± 0.07	9.52



Methodology

Two locations were used for the testing, each forming part of the same east facing façade but in separately conditioned rooms. BTS U-Value kits were deployed in each room, each comprising 2x heat flux plates, 2x internal surface temperature sensors, a room ambient temperature sensor and an external ambient temperature. Prior to testing both rooms were untreated and the equipment was left for a duration of 5 days. The test equipment was then removed from the test location and the room was treated with a thermal coating. Once the coating was applied and allowed time to dry, the equipment was reinserted and allowed to run for a further 7 days to collect data for a second set of U-Value measurements. Heat flux was measured directly along with Internal and external surface and air temperatures and used to calculate a U-value following BS ISO 9869-1:2024 Standard.

Annex 1-4 - Measurement Test Reports

(please see overleaf)

ISO9869-1:2014 U-Value Measurement using Heat Flux Plates

Results:

U-Value Position 1:	0.82	
U-Value Position 2:	0.87	
Average U-value:	*0.85*	*±14%*

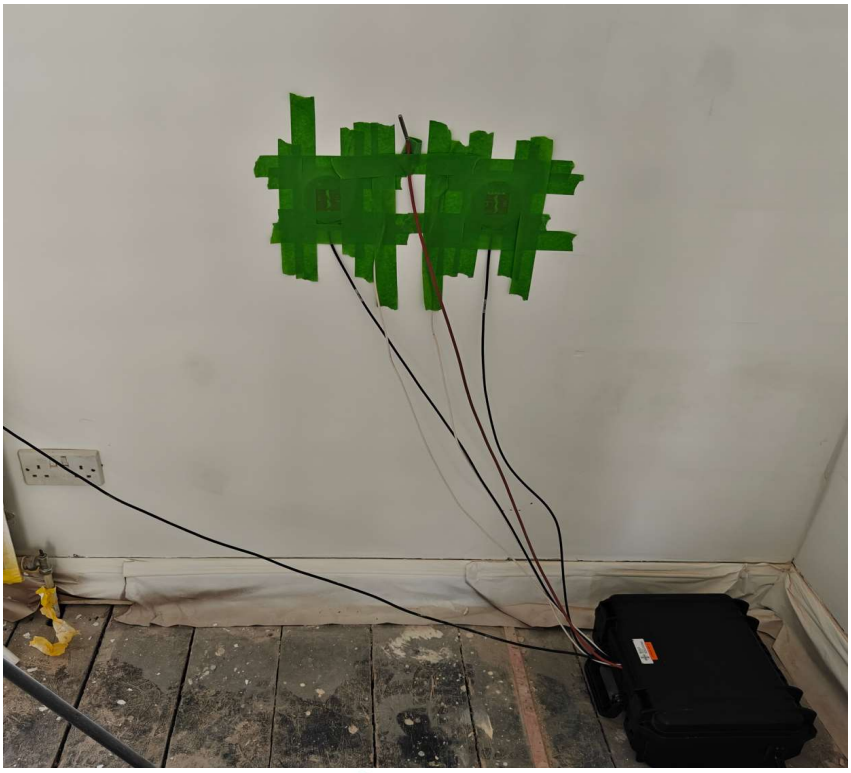
ISO Conformity:

	Position 1	Position 2
>3 days	6	6
dR24 <5%	0.2%	0.3%
dR2/3 <5%	1.4%	1.6%
Result	Valid	Valid

Measurement Details:

Element Measured:	Wall
Analysis Period Start:	11/04/2026 21:00
Analysis Period End:	17/04/2026 20:59
Mean Temperature Difference (^{o}C):	7.2
Calculation Method:	Average

Notes:



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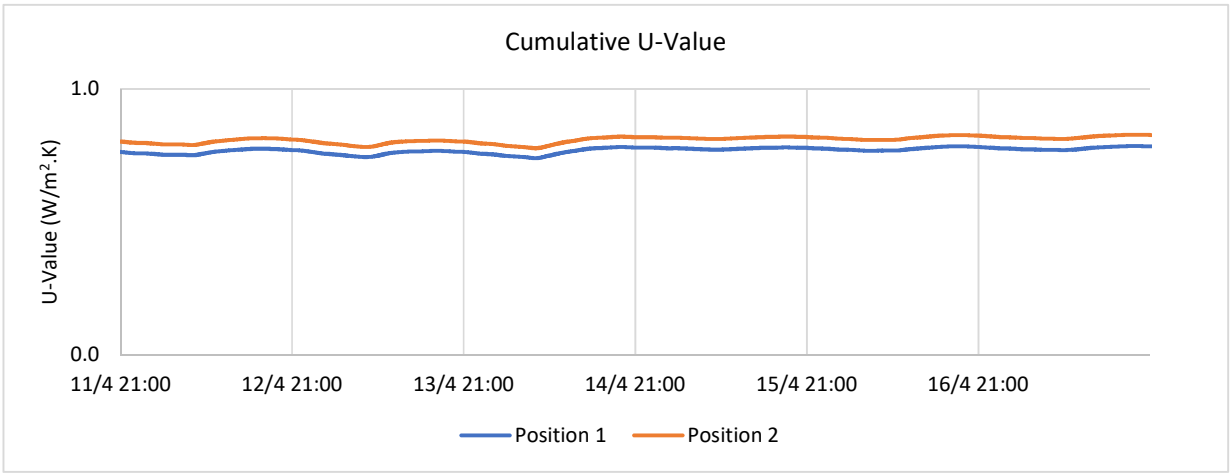
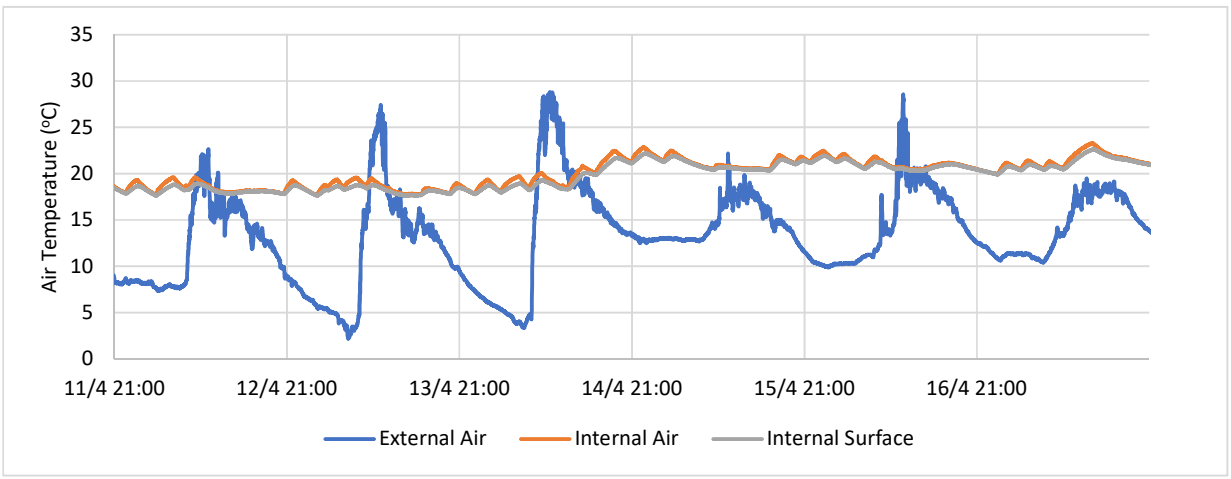
Charts:





Instrument Specification:

Logger:	Novus FieldLogger 512K
Heat Flux Plates:	Hukseflux HFP01
HFP1 Sensitivity (µV/(W/m^2)):	58.7
HFP2 Sensitivity (µV/(W/m^2)):	60.4
Air Temperature Sensors:	Class AA (1/3 DIN) RTD with sheath
Air Temperature Accuracy:	±0.1K
Surface Temperature Sensors:	Class AA (1/3 DIN) RTD surface mount
Surface Temperature Accuracy:	±0.1K
Logging Period:	02/04/2026 13:35 - 20/04/2026 10:53
Logging Interval (seconds) :	60

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ISO9869-1:2014 U-Value Measurement using Heat Flux Plates

Results:

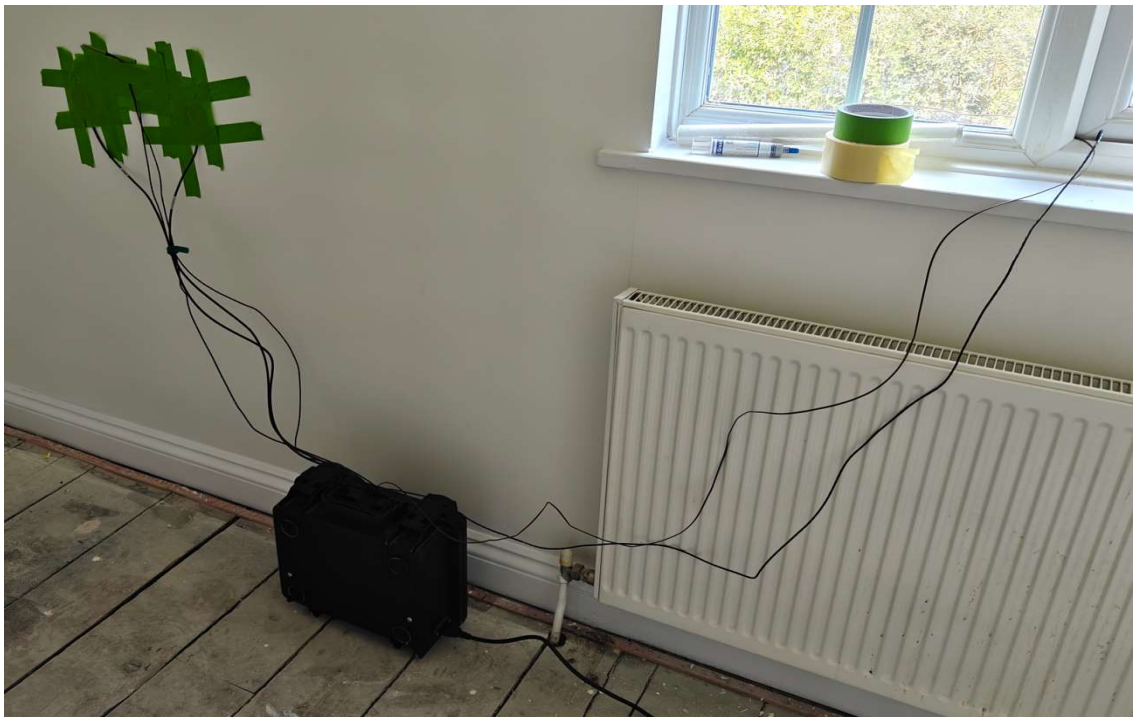
U-Value Position 1:	0.62	
U-Value Position 2:	0.60	
Average U-value:	*0.61*	*±14%*

ISO Conformity:

	Position 1	Position 2
>3 days	9	10
dR24 <5%	2.5%	3.4%
dR2/3 <5%	4.0%	4.2%
Result	Valid	Valid

Measurement Details:

Element Measured:	Wall
Analysis Period Start:	10/04/2026 12:00
Analysis Period End:	19/04/2026 11:59
Mean Temperature Difference (^{o}C):	20.2
Calculation Method:	Average
Notes:	



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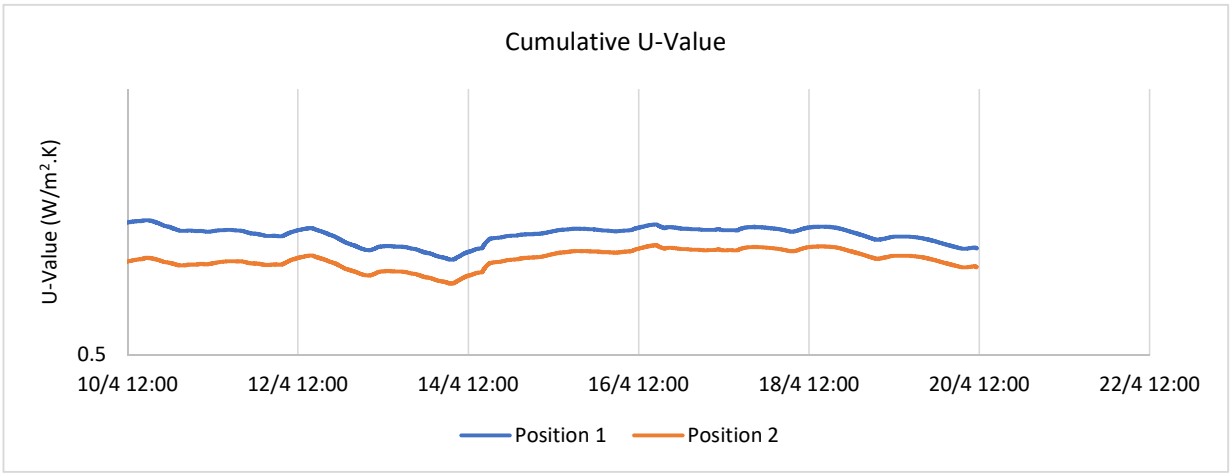

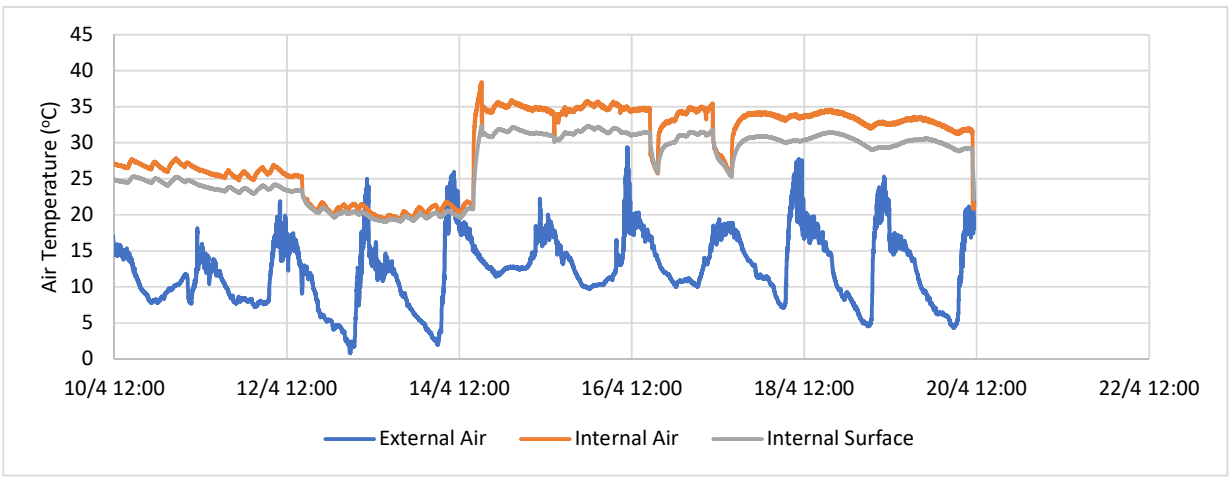

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Air Temperature Accuracy:	±0.1K
Surface Temperature Sensors:	Class AA (1/3 DIN) RTD surface mount
Surface Temperature Accuracy:	±0.1K
Logging Period:	02/04/2026 14:18 - 20/04/2026 11:13
Logging Interval (seconds) :	60

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ISO9869-1:2014 U-Value Measurement using Heat Flux Plates

Results:

U-Value Position 1:	0.83	
U-Value Position 2:	0.86	
Average U-value:	*0.85*	*±14%*

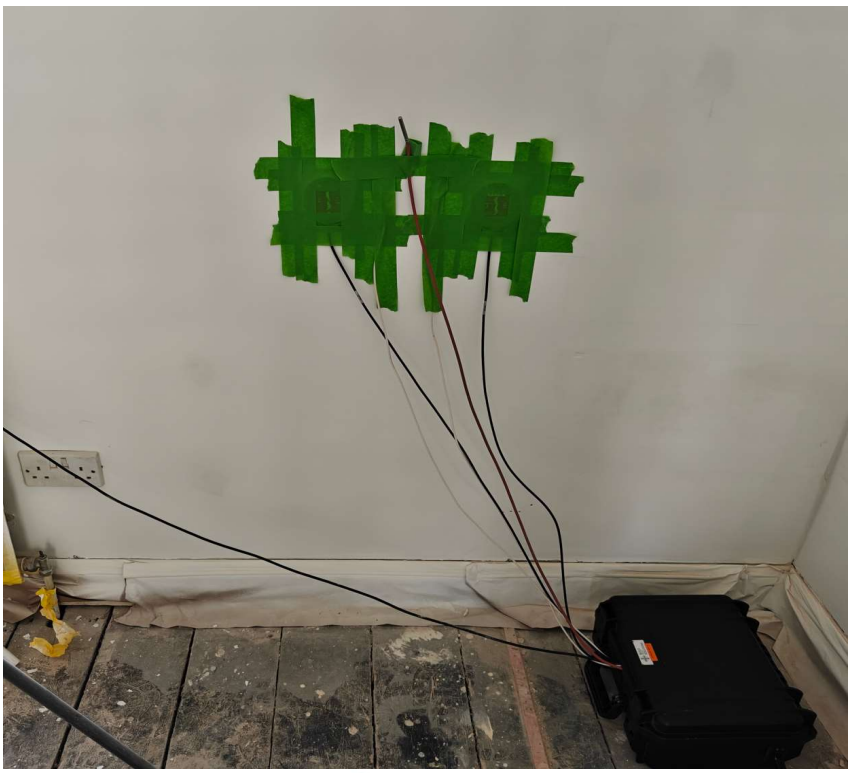
ISO Conformity:

	Position 1	Position 2
>3 days	3	3
dR24 <5%	2.8%	3.1%
dR2/3 <5%	3.5%	3.7%
Result	Valid	Valid

Measurement Details:

Element Measured:	Wall
Analysis Period Start:	03/04/2026 15:00
Analysis Period End:	06/04/2026 14:59
Mean Temperature Difference (°C):	10.2
Calculation Method:	Average

Notes:



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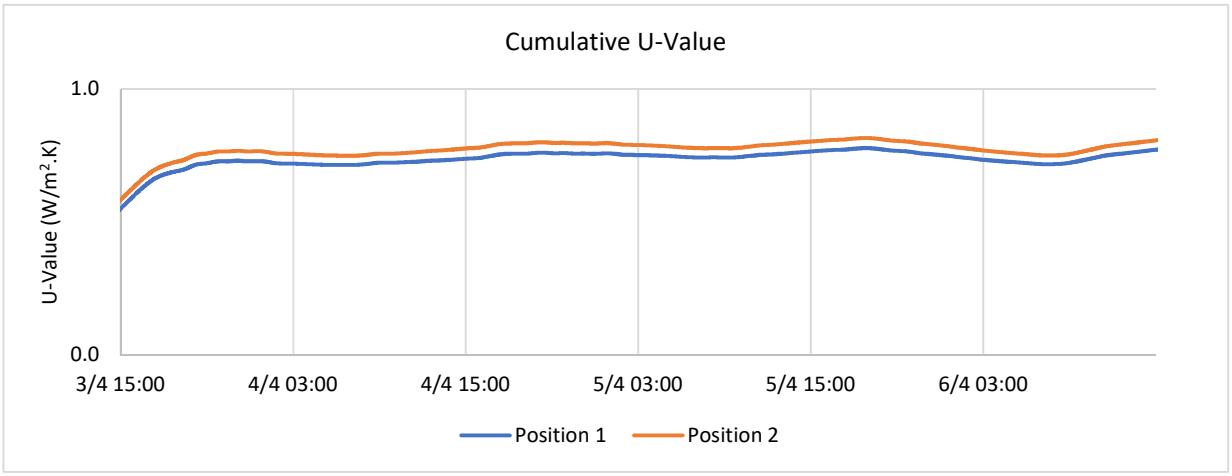

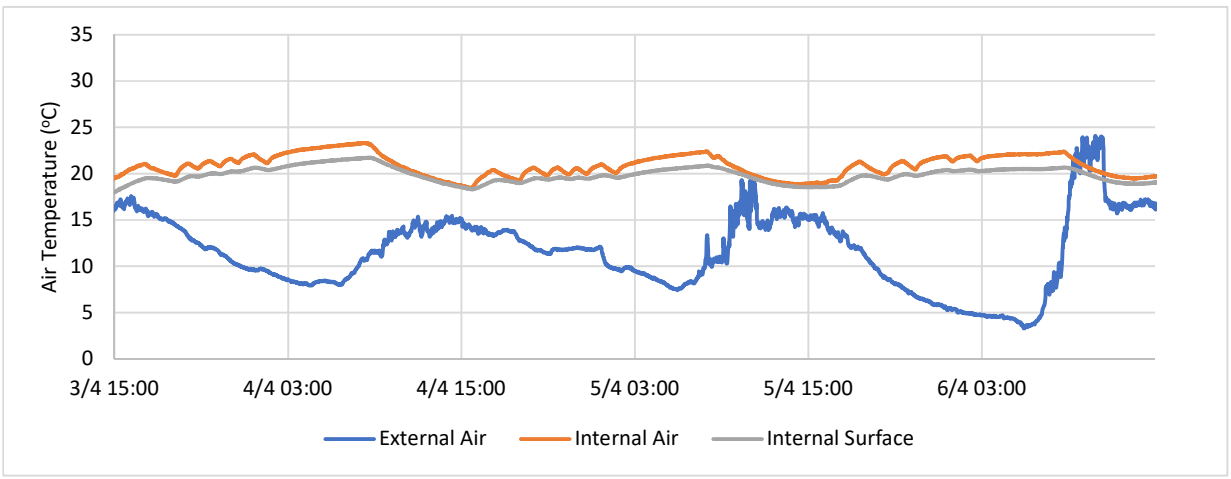

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Logging Interval (seconds) :	60

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ISO9869-1:2014 U-Value Measurement using Heat Flux Plates

Results:

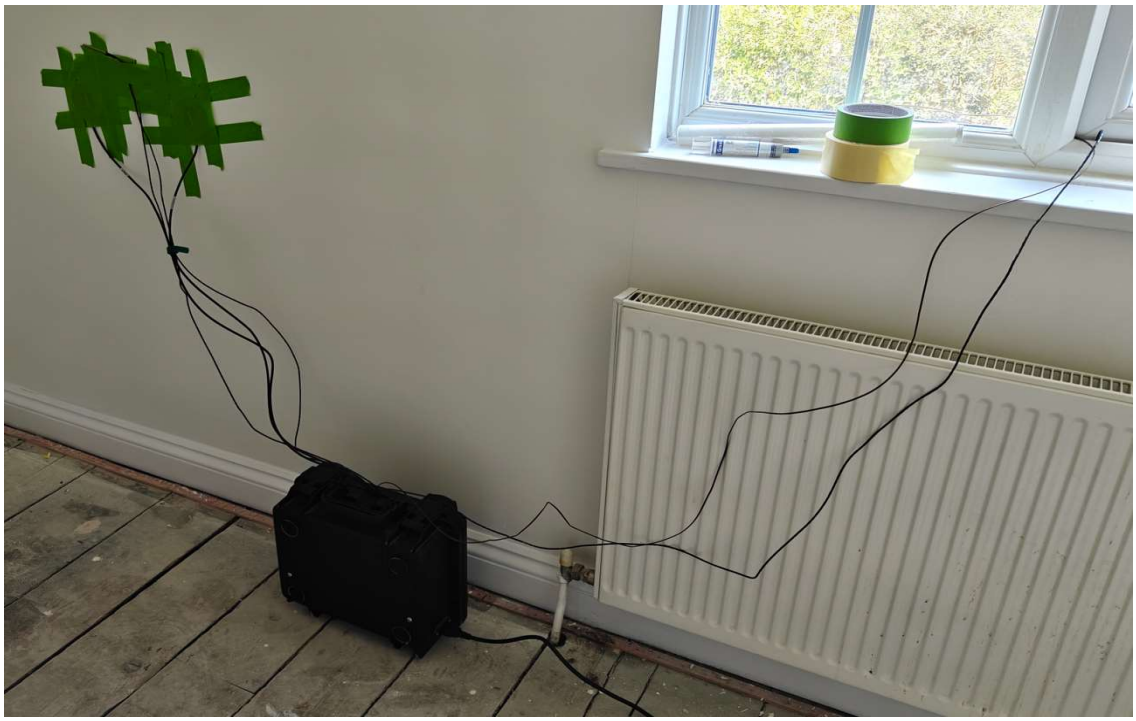
U-Value Position 1:	0.69	
U-Value Position 2:	0.76	
Average U-value:	*0.72*	*±14%*

ISO Conformity:

	Position 1	Position 2
>3 days	6	5
dR24 <5%	3.3%	2.7%
dR2/3 <5%	3.4%	3.5%
Result	Valid	Valid

Measurement Details:

Element Measured:	
Analysis Period Start:	02/04/2026 14:18
Analysis Period End:	08/04/2026 14:17
Mean Temperature Difference (°C):	12.7
Calculation Method:	Average
Notes:	



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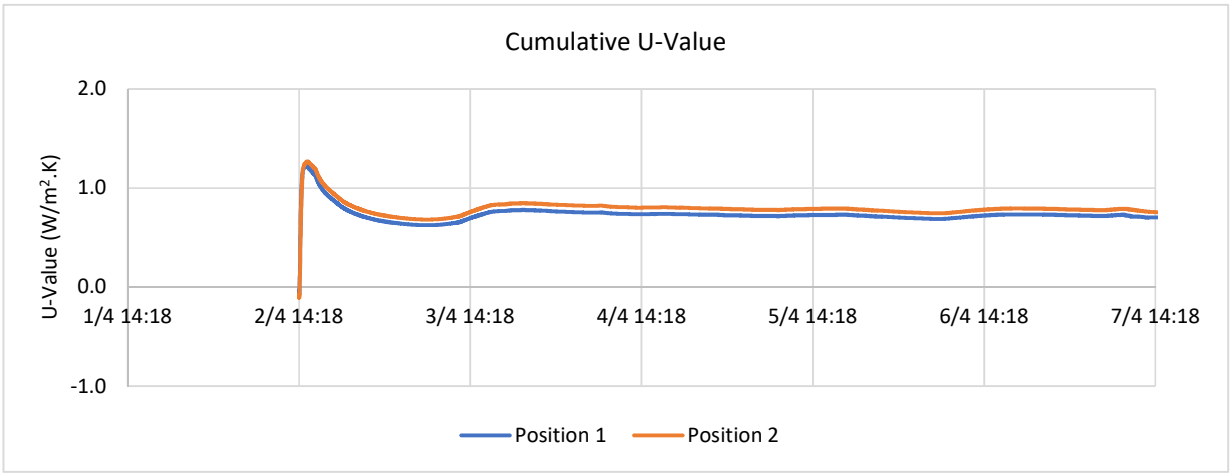

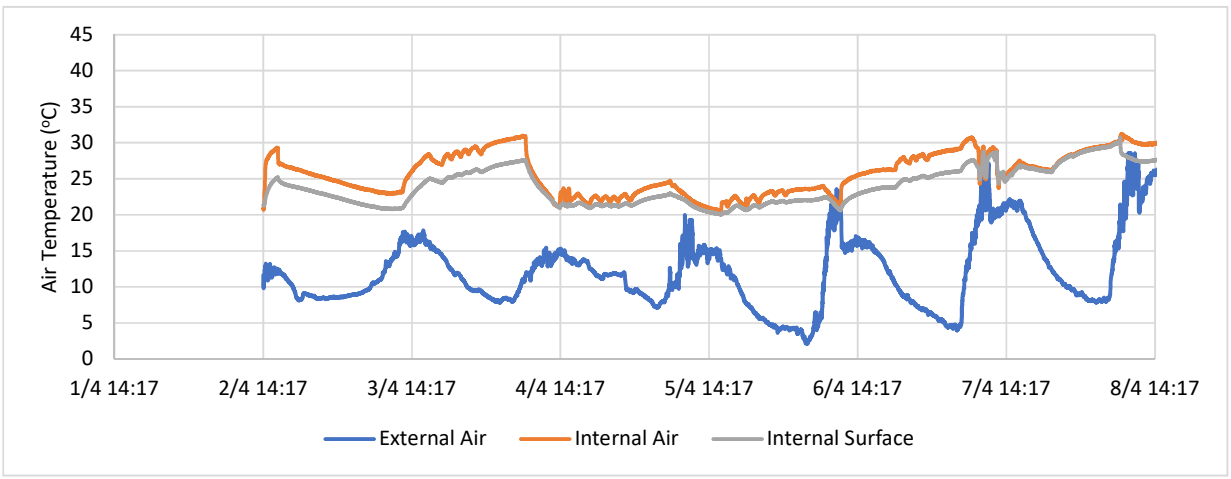

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Contact

enquiries@buildtestsolutions.com
www.buildtestsolutions.com

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Build Test Solutions Ltd, Unit A, Building 8, The Royal Ordnance Depot, Weedon Bec, Northamptonshire, NN7 4PS