



CALCULATION OF THERMAL PERFORMANCE

REGEN BUILDING SOLUTIONS - Framed Structaclad 75 (single-sided) Wall

System Description: Structaclad 75 Cladding (12mm Megaboard 920kg/m³, 63mm M Grade EPS, 25mm Non-reflective Air Space, Reflective Sarking(0.9/0.03), R2.5 Glass wool Batt Insulation, 10mm Plasterboard Lining

INSULATION PATH

Calculation: **W181122b W** (Evaluation for Winter 12°C ambient temperature, 18°C inside temperature)

Element Description	WINTER				
	R (m ² K/W)	°C out	°C in	Mean °C	Δ-T
Outdoor Air Film	0.040	12.00	12.05	12.02	0.05
Structaclad 75 Cladding	1.846	12.05	14.33	13.19	2.28
25mm Non-reflective Air Space	0.188	14.33	14.56	14.44	0.23
Reflective Sarking	0.000	14.56	14.56	14.56	0.00
R2.5 Glass wool insulation	2.611	14.56	17.78	16.17	3.22
10mm Plasterboard Lining	0.059	17.78	17.85	17.82	0.07
Indoor Air-Film	0.120	17.85	18.00	17.93	0.15
TOTAL R VALUE	4.9	(m².K/W)		6.00	

Assumed Airspace Properties				
e1	e2	mm	Heat Flow	Notes
				1
				2,4
0.9	0.9	25	Horiz	3
				4
				4
				2
				5

Calculation: **W181122b S** (Evaluation for Summer 36°C ambient temperature, 24°C inside temperature)

Element Description	SUMMER				
	R (m ² K/W)	°C out	°C in	Mean °C	Δ-T
Outdoor Air Film	0.040	36.00	35.89	35.95	0.11
Structaclad 75 Cladding	1.714	35.89	31.34	33.62	4.55
25mm Non-reflective Air Space	0.163	31.34	30.91	31.13	0.43
Reflective Sarking	0.000	31.34	31.34	31.34	0.00
R2.5 Glass wool insulation	2.424	30.91	24.48	27.69	6.44
10mm Plasterboard Lining	0.059	24.48	24.32	24.40	0.16
Indoor Air-Film	0.120	24.32	24.00	24.16	0.32
TOTAL R VALUE	4.5	(m².K/W)		12.00	

Assumed Airspace Properties				
e1	e2	mm	Heat Flow	Notes
				1
				2,4
0.9	0.9	25	Horiz	3
				4
				4
				2
				5

- Notes:
- AS/NZS 4859.1:2002, Amdt.1 2006, Cl. K5(a) - Air Films.
 - AIRAH Technical Handbook, Edition 5 2013, pp. 62-73 - Thermal Properties of Building and Insulating Material.
 - Robinson and Powlich (1954), assuming still air space and horizontal heat flow.
 - Material R-value in accordance with AS/NZS 4859.1.
 - AS/NZS 4859.1:2002, Amdt.1 2006, Table K1 - Thermal Resistance of Air Films.
- This calculation does not consider thermal bridging as thermal resistance is calculated on the path of the insulation only.
 - This calculation is not compliant for the purposes of labelling in accordance with AS/NZS 4859.1 without the endorsement of a recognised laboratory as per Section 4.3 of AS/NZS 4859.1.
 - This report may not be produced except in full. Results may not be quoted without reference to the assumptions.

The Total R values of the above system for Winter and Summer conditions have been determined in accordance with the requirements of AS/NZS 4859.1:2002 Amdt 1 (Dec 2006).

Total R value R_T (WINTER) **4.9** (m².K/W)
 R_T (SUMMER) **4.5** (m².K/W)

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