

February 22, 2024

DELTA PANELS PTY LTD
ATTN: MR JOHN GUY
731 BOUNDARY ROAD,
RICHLANDS, QUEENSLAND, 4077
AUSTRALIA

Thermal Performance of Delta Panels EPS-FR Core (SL grade) – Roofing, External Wall & Internal Wall Applications

Dear Mr Guy:

Further to your request, I can confirm the thermal performance of:

- Delta Panels EPS-FR Core (SL grade) insulated core panel, as described in the following test reports by an accredited testing laboratory.
- CSIRO Report XC3945/R1(Rev C) – Final Issue, Thermal Transmission Properties of 50MM EPS-FR BOARD (SL grade), 11-Dec-2023.
- CSIRO Report XC3945/R2(Rev B) – Final Issue, Thermal Transmission Properties of 200MM EPS-FR BOARD (SL grade), 11-Dec-2023.

The Declared Material R-values of Delta Panels EPS-FR Core (SL grade) insulated core panel have been determined in accordance with AS/NZS 4859.1:2018 as:

Table 1: EPS Declared Material R-value

Declared Material R-value [(m ² .K)/W]									
EPS (SL)	Thickness (mm)	50	75	100	125	150	175	200	225
Mean Temp (°C)	0°C	1.30	1.85	2.50	3.10	3.70	4.35	4.95	5.60
	15°C	1.20	1.75	2.35	2.95	3.50	4.15	4.70	5.30
	23°C	1.20	1.70	2.30	2.90	3.45	4.05	4.60	5.20

Summary tables of calculations of Total R-value of Delta Panels EPS-FR Core (SL grade) insulated core panel for; External Roof; External Wall; and, Internal Wall construction performed in accordance with AS/NZS 4859.1:2018 are provided below. In all cases the construction is assumed to consist of the panel.

The contribution of R-value for the external and internal non-reflective air films have been added to the R-value contribution of the panel incorporating the effects of mean temperature for Australian conditions:

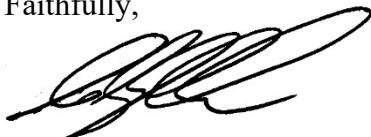
- Heat flow out (Winter): Indoors 18°C, outdoors 12°C, mean 15°C
- Heat flow in (Summer): Indoors 24°C, outdoors 36°C, mean 30°C

Contribution of Air-film resistances [(m ² .K)/W]						
	Roof		External Wall		Internal Wall	
	Wint.	Sum.	Wint.	Sum.	Wint.	Sum.
Outside Air Film	0.04	0.04	0.04	0.04	0.12	0.12
Inside Air Film	0.11	0.16	0.12	0.12	0.12	0.12

**Table 2: Delta Panels EPS-FR Core (SL grade) insulated core panel
Total R-value - External Roof, External Wall & Internal Wall**

Australia	Total R-value [(m ² .K)/W] (Summer/Winter) & System U-value [W/(m ² .K)] (Summer/Winter)								
EPS (SL)	Thickness (mm)	50	75	100	125	150	175	200	250
External Roof	R _(Sum.)	1.36	1.85	2.43	3.02	3.56	4.15	4.68	5.27
	U _(Sum.)	0.74	0.54	0.41	0.33	0.28	0.24	0.21	0.19
	R _(Wint.)	1.38	1.90	2.52	3.13	3.69	4.31	4.88	5.49
	U _(Wint.)	0.72	0.53	0.40	0.32	0.27	0.23	0.20	0.18
External Wall	R _(Sum.)	1.32	1.81	2.40	2.98	3.52	4.11	4.64	5.23
	U _(Sum.)	0.76	0.55	0.42	0.34	0.28	0.24	0.22	0.19
	R _(Wint.)	1.39	1.91	2.53	3.14	3.70	4.32	4.89	5.50
	U _(Wint.)	0.72	0.52	0.40	0.32	0.27	0.23	0.20	0.18
Internal Wall	R _(Sum.)	1.40	1.89	2.48	3.07	3.60	4.19	4.73	5.31
	U _(Sum.)	0.71	0.53	0.40	0.33	0.28	0.24	0.21	0.19
	R _(Wint.)	1.47	1.99	2.60	3.22	3.78	4.40	4.96	5.58
	U _(Wint.)	0.68	0.50	0.38	0.31	0.26	0.23	0.20	0.18

Faithfully,



Cameron Chick BE(Hons), Ph.D., GC.Com.(Mktg), M.AIRAH, RPEQ
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