



August 23, 2013

Michael Hadley
General Manager
Ductware
(a division of RMD Industries Pty Ltd)
6-10 Market Road,
Sunshine, VIC, 3020

RE: Access Panel R-value Calculations

Dear Michael:

Further to your enquiry regarding the R-values provided by the insulation in two access panel samples provided, I can confirm the following.

Sample 1:

Access Panel (approximate dimensions 650 mm x 500 mm x 25 mm).
Glasswool (yellow) insulation encapsulated within the sheet metal 'door'.
Measured insulation dimensions: 640 mm x 490 mm x 22 mm.
Measured insulation weight: 121 g.
Calculated insulation density: 17.5 kg/m³.
Calculated insulation thermal conductivity (at mean temperature of 18°C): 0.0384 W/mK.
Calculated insulation thermal resistance (at mean temperature of 18°C): **R0.57 m²K/W**.

Had the Glasswool insulation been laminated to a reflective foil facing the thermal resistance would not be improved. (The thermal benefit of a reflective surface is only realized when immediately adjacent to a still air space, typically of 25mm thickness or more.)

Sample 2:

Access Panel (approximate dimensions 241 mm x 147 mm x 25 mm), 'Ductware' embossed.
White Expanded Polystyrene (EPS) insulation encapsulated within the sheet metal 'door'.
Insulation labelled as "S" Grade, measured at 22 mm thickness.
Thermal conductivity, based on FOAMEX technical data (at mean temperature of 18°C): 0.0387 W/mK.
Calculated insulation thermal resistance (at mean temperature of 18°C): **R0.57 m²K/W**.

I understand that the thickness of S Grade Polystyrene (EPS) insulation within a 50mm thick access panel is 47mm. At this thickness, the insulation would achieve a thermal resistance of R1.21m²K/W.

Sincerely,

Dr Cameron Chick BE(Hons), Ph.D, M.AIRAH
Director - Acronem Consulting Australia Pty Ltd

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