



As per the guidelines of NZS 4214:2006 the thermal calculation for 50mm Aerated Concrete Panel (over a 20mm cavity) installed over the surface of a wall incorporating an R=1.8 wall batt is as follows:

	<b>R (m<sup>2</sup>°C/W)</b>
Rse (exterior surface resistance).....	= 0.03
<b>Layer 1</b> 5mm Cement based exterior plaster .....	= 0.01
<b>Layer 2</b> 50mm Aerated Concrete Cladding (derated by 45%).....	= 0.31
<b>Layer 3</b> For the frame area (studs @ 600 centres – dwangs @ 800)	
R1 (94mm thick R 1.8 insulation + 20mm air space)	1.80 + 0.09= 1.89
R2 (94mm deep timber framing, k = 0.12 W/mK + 20mm air space)	0.78 + 0.09= 0.84
$f1 = \frac{(600-47) \times (2400 - 4 \times 47)}{600 \times 2400} = 0.849$	
$f2 = 1 - 0.849 = 0.151$	
$\frac{1}{Rb} = \frac{f1}{R1} + \frac{f2}{R2} = \frac{0.151}{0.84} + \frac{0.849}{1.89} = 0.59$	
Therefore Rb = $\frac{1}{0.59}$ .....	= 1.59
<b>Layer 4</b> Internal 9.5mm Plasterboard Lining .....	= 0.05
Rsi (interior surface resistance) .....	= 0.09
<b>Total thermal resistance, RT</b> .....	<b>= 2.08</b>