



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>                |