



As per the guidelines of NZS 4214:2006 the thermal calculation for 75mm Thermashell EPS System (over a 20mm cavity) installed over the surface of a wall incorporating an R=1.8 wall batt is as follows:

	R (m²°C/W)
Rse (exterior surface resistance).....	= 0.03
Layer 1 5mm Cement based exterior plaster	= 0.01
Layer 2 75mm Thermashell Cladding (derated by 45%).....	= 1.28*
Layer 3 For the frame area (studs @ 600 centres – dwangs @ 800)	
R1 (94mm thick R 1.8 insulation + 20mm air space)	1.80 + 0.17 = 1.97
R2 (94mm deep timber framing, k = 0.12 W/mK + 20mm air space)	0.78 + 0.17 = 0.95
$f1 = \frac{(600-47) \times (2400 - 4 \times 47)}{600 \times 2400} = 0.849$	
$f2 = 1 - 0.849 = 0.151$	
$\frac{1}{Rb} = \frac{f1}{R1} + \frac{f2}{R2} = \frac{0.151}{0.95} + \frac{0.849}{1.97} = 0.59$	
Therefore Rb = $\frac{1}{0.59}$ =	= 1.70
Layer 4 Internal 9.5mm Plasterboard Lining	= 0.05
Rsi (interior surface resistance)	= 0.09
Total thermal resistance, RT	= 3.16

* Based on a thermal conductivity of 0.031W/mK