

From NZS 4218:2009, R-value as used in NZ is

square-metre kelvins per watt or $m^2 \cdot C^\circ/W$ or $m^2 \cdot K/W$

The Imperial R-values are given in units of $ft^2 \cdot ^\circ F \cdot h/Btu$

(from Wikipedia)

Heat transfer coefficient converter from Engineering toolbox

$$1 \text{ Btu/ft}^2 \text{ h } ^\circ F = 5.678 \text{ W/m}^2 \text{ K}$$

$$1 \text{ W/m}^2 \text{ K} = 0.1761 \text{ Btu/ ft}^2 \text{ h } ^\circ F$$

Metric to imperial

$$R_i := 1.0 \cdot \frac{m^2 \cdot K}{W} \quad R_i = 5.68 \text{ ft}^2 \cdot R \cdot \frac{hr}{BTU}$$

Imperial to Metric

$$R_i := 1 \text{ ft}^2 \cdot R \cdot \frac{hr}{BTU} \quad R_i = 0.176 \frac{m^2 \cdot K}{W}$$

Basically to convert from imperial to metric multiply by 0.176

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Table - Building components

$$R_i := 19 \text{ ft}^2 \cdot R \cdot \frac{hr}{BTU} \quad R_i = 3.35 \frac{m^2 \cdot K}{W}$$

$$R_i := 13.7 \text{ ft}^2 \cdot R \cdot \frac{hr}{BTU} \quad R_i = 2.41 \frac{m^2 \cdot K}{W}$$

$$R_i := 13 \text{ ft}^2 \cdot R \cdot \frac{hr}{BTU} \quad R_i = 2.29 \frac{m^2 \cdot K}{W}$$

$$R_i := 9.6 \text{ ft}^2 \cdot R \cdot \frac{hr}{BTU} \quad R_i = 1.69 \frac{m^2 \cdot K}{W}$$

from table whole wall testing

$$R_i := \begin{pmatrix} 13 & 16 & 17 \\ 23 & 25 & 26 \\ 30 & 32 & 33 \\ 37 & 40 & 42 \\ 45 & 49 & 51 \end{pmatrix} \text{ ft}^2 \cdot R \cdot \frac{hr}{BTU} \quad R_i = \begin{pmatrix} 2.29 & 2.82 & 2.99 \\ 4.05 & 4.4 & 4.58 \\ 5.28 & 5.64 & 5.81 \\ 6.52 & 7.04 & 7.4 \\ 7.92 & 8.63 & 8.98 \end{pmatrix} \frac{m^2 \cdot K}{W}$$