

## FireCrunch Panel Thermal Resistance & Transmittance U AND R VALUES

General application FireCrunch MgO panels have very good thermal conductivity properties with a base of 0.152 W/mK.

FireCrunch standard panels are produced in four different standard thicknesses: 3mm; 6mm; 10mm; and 20mm.

The chart below states the calculated Thermal Resistance (R-value) and Thermal Transmittance (U-value) of the standard thickness and custom thickness board based on test by SGS-CSTC Standards 2012.

Board Thickness (mm)	U-value (W/m <sup>2</sup> K)	R-value (m <sup>2</sup> K/W)
3	50.67	0.020
6	25.33	0.039
10	15.20	0.066
20	7.60	0.132
30 (custom)	5.07	0.197

### Thermal Resistance (R-value) Units = m<sup>2</sup>K/W

A measure of the opposition to heat transfer offered by a particular component in a building element. R-values are created by dividing the thickness of the material (metres) by the k-value for a particular material.

Thermal Resistance will take into account the thickness of the material, thus allowing for more accurate comparisons between materials carrying out the same job.

To allow for a more accurate comparison in the insulation properties of each material, an R-value should be calculated

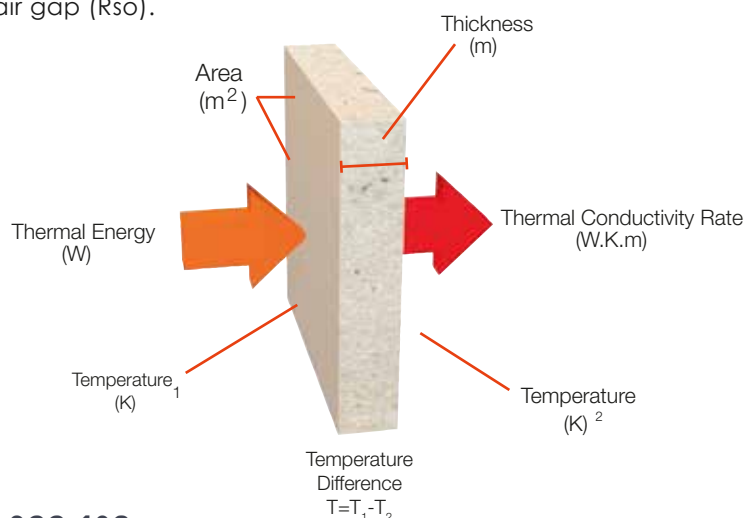
### Thermal Transmittance (U-values) Units = W/m<sup>2</sup>K

A measure of the overall rate of heat transfer, by all mechanisms under standard conditions, through a particular section of construction.

This measure takes into account the thickness of each material involved and is calculated from R-values of each material as well as constants accounting for surface transmittance (R<sub>si</sub> and R<sub>so</sub>, inner and outer surfaces respectively) and also for a small standard air gap (R<sub>so</sub>).

### Thermal Conductivity (k-values) Units = W/mK

A measure of the rate at which heat is conducted through a particular material under specified conditions. This figure has been calculated for a vast variety of materials from those common to the construction industry to those that are probably never used in the building industry.



TECHNICAL REFERENCE U & R Value Chart

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