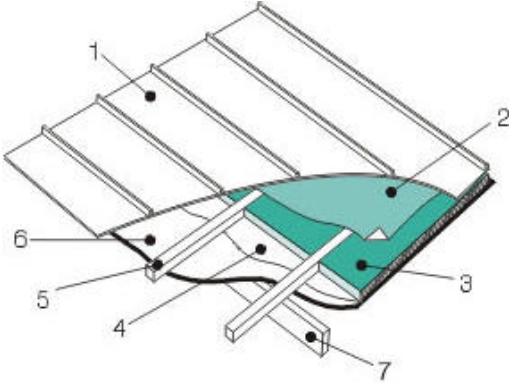


PRESENTATION OF RESULTS

Roof/Ceilings

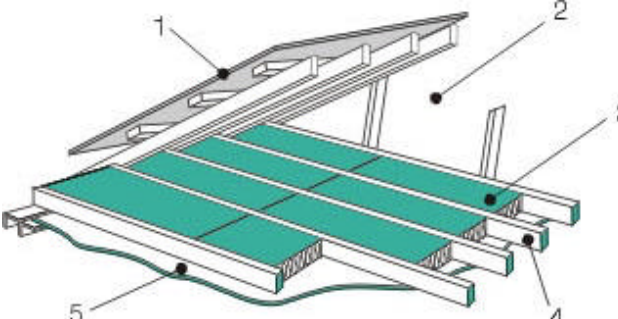
For roof/ceiling elements the R-values are presented for the two directions of heat flow, *IN* and *OUT*. In each of these categories, R-values are given for

each of the temperature settings High, Medium and Low. Settings for a particular location can be determined from **Figures 1 and 2** and **Table 6**.

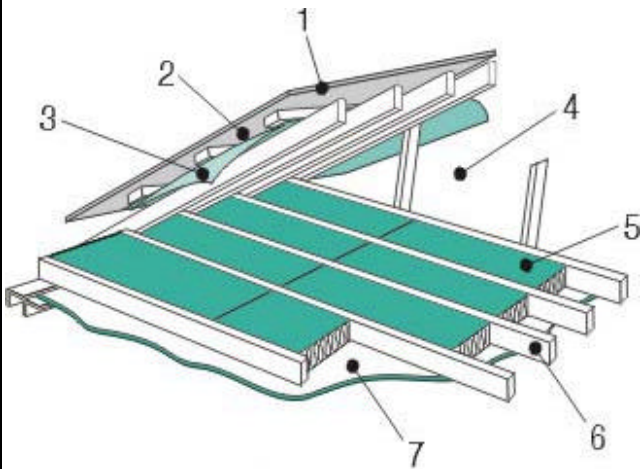
Description of Element	Total R-value for roof/ceiling						
	High, Medium, Low (Hot Weather)			High, Medium, Low (Cold Weather)			
	Heat flow IN			Heat flow OUT			
 <p>1. Metal decking 2. Sarking 3. Bulk Insulation 4. Vapour barrier 5. Timber batten 6. Ceiling lining 7. Exposed rafter</p> <p>Slope: 15° to 35°</p>	R1.5 bulk insulation	1.5	1.5	1.6	1.7	1.7	1.7
	R2.0 bulk insulation	1.9	1.9	2.0	2.1	2.1	2.2
	R2.5 bulk insulation	2.2	2.3	2.4	2.5	2.6	2.6
	R3.0 bulk insulation	2.7	2.7	2.8	3.0	3.1	3.1
	R3.5 bulk insulation	3.0	3.1	3.2	3.4	3.5	3.6

Notes: Heat flow **IN** means the heat flows *into* the internal spaces of the building. For roof/ceiling element this is designated, DOWN.
Heat flow **OUT** means the heat flows *from* the internal spaces of the building. For roof/ceiling element this is designated, UP.

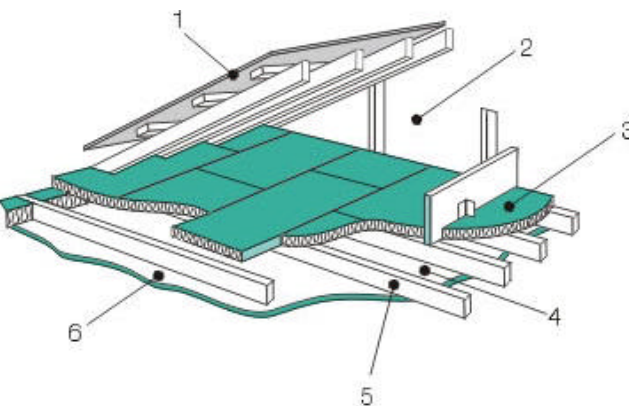
R1. PITCHED ROOF, FLAT CEILING, BULK INSULATION BETWEEN JOISTS

 1. Roof cladding 2. Attic space (Non-reflective) 3. Bulk insulation 4. Timber ceiling joists 5. Plasterboard	Total R-value for roof/ceiling					
	Heat flow <i>DOWN</i>			Heat flow <i>UP</i>		
R1.5 bulk insulation						
Tiles	2.2	2.3	2.3	1.8	1.9	1.9
Metal	2.0	2.1	2.1	1.8	1.9	1.9
R2.0 bulk insulation						
Tiles	2.6	2.7	2.7	2.3	2.3	2.4
Metal	2.4	2.5	2.5	2.3	2.3	2.4
R2.5 bulk insulation						
Tiles	3.0	3.0	3.1	2.8	2.8	2.9
Metal	2.8	2.8	2.9	2.7	2.8	2.8
R3.0 bulk insulation						
Tiles	3.3	3.4	3.5	3.2	3.2	3.3
Metal	3.1	3.2	3.3	3.2	3.2	3.3
R3.5 bulk insulation						
Tiles	3.7	3.8	3.8	3.6	3.6	3.7
Metal	3.5	3.6	3.7	3.6	3.6	3.7

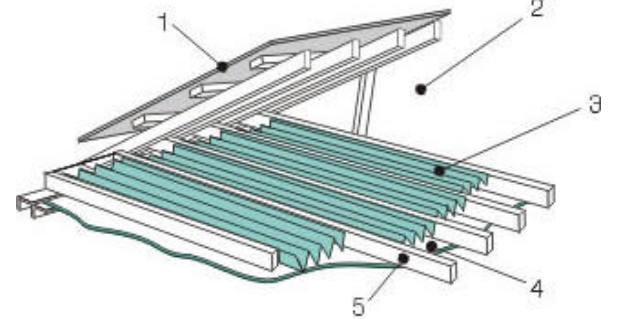
R2. PITCHED ROOF, REFLECTIVE FOIL LAMINATE (RFL), FLAT CEILING, (Without and with) BULK INSULATION BETWEEN JOISTS

 1. Roof cladding 2. Airspace (Non-reflective) 3. RFL 4. Attic space (reflective) 5. Bulk insulation 6. Timber ceiling joists 7. Plasterboard	Total R-value for roof/ceiling					
	Heat flow <i>DOWN</i>			Heat flow <i>UP</i>		
No bulk insulation						
Tiles	1.4	1.4	1.4	0.5	0.6	0.6
Metal	1.3	1.4	1.4	0.5	0.6	0.6
R1.5 bulk insulation						
Tiles	2.9	2.9	2.9	2.0	2.1	2.1
Metal	2.8	2.9	2.9	2.0	2.1	2.1
R2.0 bulk insulation						
Tiles	3.2	3.3	3.3	2.5	2.5	2.6
Metal	3.2	3.3	3.3	2.5	2.5	2.6
R2.5 bulk insulation						
Tiles	3.6	3.6	3.7	2.9	3.0	3.0
Metal	3.6	3.6	3.7	2.9	3.0	3.0
R3.0 bulk insulation						
Tiles	3.9	4.0	4.0	3.4	3.4	3.5
Metal	3.9	4.0	4.0	3.3	3.4	3.5
R3.5 bulk insulation						
Tiles	4.3	4.3	4.4	3.8	3.8	3.9
Metal	4.2	4.3	4.4	3.7	3.8	3.9

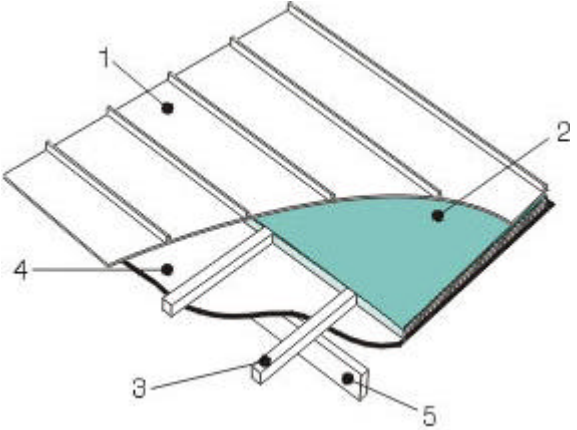
R3. PITCHED ROOF, FLAT CEILING, RIGID BULK INSULATION OVER JOISTS

 <ol style="list-style-type: none"> 1. Roof cladding 2. Attic space (Non-reflective) 3. Bulk insulation 4. Airspace (Non-reflective) 5. Timber ceiling joists 6. Plasterboard 	Total R-value for roof/ceiling					
	Heat flow <i>DOWN</i>			Heat flow <i>UP</i>		
R1.5 bulk insulation						
Tiles	2.6	2.6	2.6	2.1	2.1	2.1
Metal	2.4	2.4	2.4	2.1	2.1	2.1
R2.0 bulk insulation						
Tiles	3.0	3.1	3.1	2.6	2.6	2.6
Metal	2.8	2.9	2.9	2.6	2.6	2.6
R2.5 bulk insulation						
Tiles	3.5	3.5	3.6	3.1	3.1	3.1
Metal	3.3	3.3	3.4	3.1	3.1	3.1
R3.0 bulk insulation						
Tiles	4.0	4.0	4.1	3.6	3.6	3.7
Metal	3.8	3.8	3.9	3.6	3.6	3.7
R3.5 bulk insulation						
Tiles	4.4	4.5	4.5	4.1	4.1	4.2
Metal	4.2	4.3	4.4	4.1	4.1	4.2

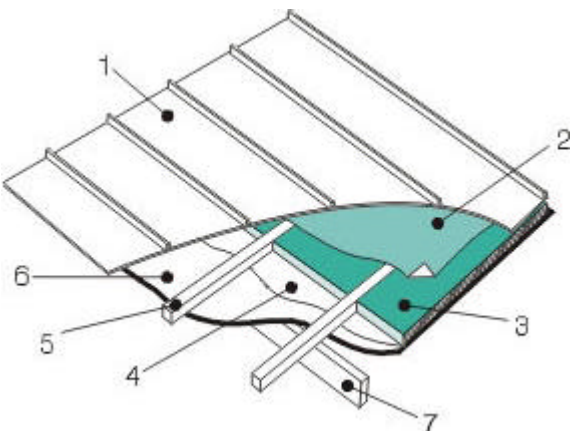
R4. PITCHED ROOF, FLAT CEILING, CONCERTINA RFL BETWEEN JOISTS

 <ol style="list-style-type: none"> 1. Roof cladding 2. Attic space (non-reflective) 3. Concertina RFL between joists 4. Airspace (reflective) 5. Timber ceiling joists 6. Plasterboard 	Total R-value for roof/ceiling					
	Heat flow <i>DOWN</i>			Heat flow <i>UP</i>		
One layer of foil batt						
Tiles	1.9	2.0	2.0	0.8	0.8	0.7
Metal	1.9	2.0	2.0	0.8	0.8	0.7
Two layers foil batts at right angles						
Tiles	3.1	3.2	3.2	1.3	1.3	1.2
Metal	3.1	3.2	3.2	1.3	1.3	1.2

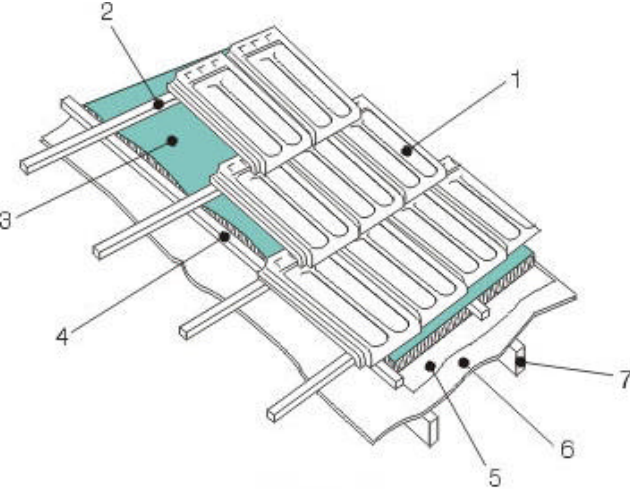
R5. METAL ROOF, CEILINGS WITH EXPOSED RAFTERS, FOIL-BACKED BLANKET

 <p>1. Metal decking 2. Foil-backed blanket (reflective foil facing <i>DOWN</i>) 3. Timber battens 4. Plasterboard 5. Exposed rafter</p> <p>Slope: 15° to 35°</p>	Total R-value for roof/ceiling					
	Heat flow <i>DOWN</i>			Heat flow <i>UP</i>		
R1.5 insulating blanket	1.5	1.6	1.6	1.7	1.8	1.8
R2.0 insulating blanket	1.9	2.0	2.1	2.2	2.2	2.3
R2.5 insulating blanket	2.3	2.4	2.5	2.7	2.7	2.8

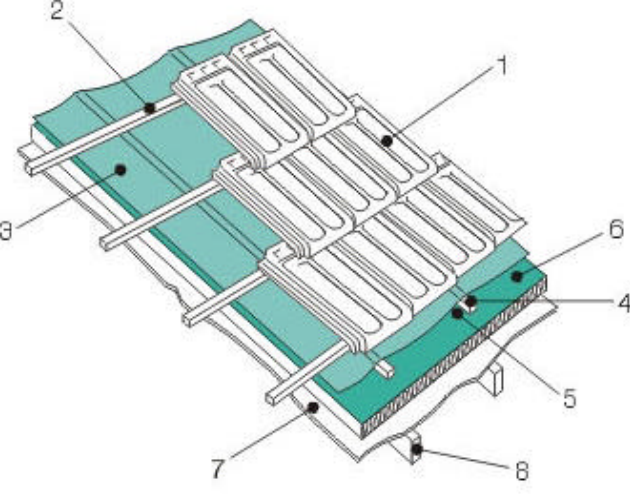
R6. METAL ROOF, CEILINGS WITH EXPOSED RAFTERS, BULK INSULATION & RFL

 <p>1. Metal decking 2. Sarking 3. Bulk Insulation 4. Vapour barrier 5. Timber batten 6. Ceiling lining 7. Exposed rafter</p> <p>Slope: 15° to 35°</p>	Total R-value for roof/ceiling					
	Heat flow <i>DOWN</i>			Heat flow <i>UP</i>		
R1.5 bulk insulation	1.5	1.5	1.6	1.7	1.7	1.7
R2.0 bulk insulation	1.9	1.9	2.0	2.1	2.1	2.2
R2.5 bulk insulation	2.2	2.3	2.4	2.5	2.6	2.6
R3.0 bulk insulation	2.7	2.7	2.8	3.0	3.1	3.1
R3.5 bulk insulation	3.0	3.1	3.2	3.4	3.5	3.6

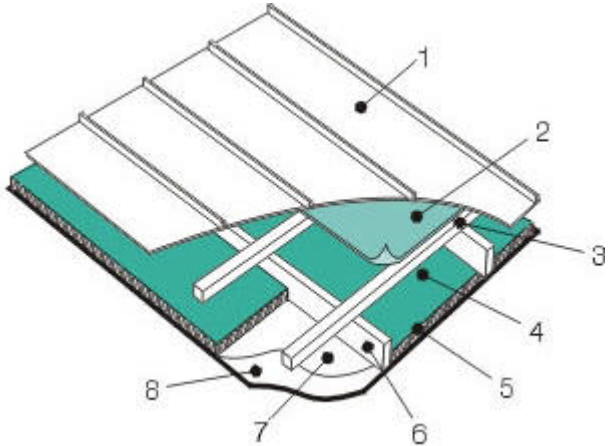
R7. TILED ROOF, CEILINGS WITH EXPOSED RAFTERS, BULK INSULATION

 <p>1. Tiles 2. Timber tile battens 3. Bulk insulation 4. Counter battens 5. Vapour barrier 6. Plasterboard 7. Exposed rafter</p> <p>Slope: 15° to 35°</p>	Total R-value for roof/ceiling						
	Heat flow <i>DOWN</i>			Heat flow <i>UP</i>			
	R1.5 bulk insulation	1.7	1.7	1.8	1.8	1.9	1.9
	R2.0 bulk insulation	2.0	2.1	2.1	2.3	2.3	2.4
	R2.5 bulk insulation	2.4	2.5	2.5	2.7	2.7	2.8
	R3.0 bulk insulation	2.7	2.8	2.9	3.1	3.1	3.2
R3.5 bulk insulation	3.0	3.1	3.2	3.4	3.5	3.6	

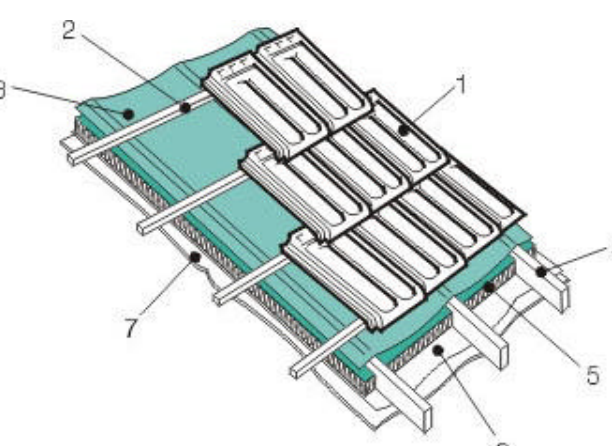
R8. TILED ROOF, CEILINGS WITH EXPOSED RAFTERS, EXTRUDED POLYSTYRENE BOARD INSULATION

 <p>1. Tiles 2. Timber tile battens 3. RFL 4. Counter battens 5. Reflective airspace 6. Extruded polystyrene 7. Plasterboard 8. Exposed rafter</p> <p>Slope: 15° to 35°</p>	Total R-value for roof/ceiling					
	Heat flow <i>DOWN</i>			Heat flow <i>UP</i>		
	R1.5 extruded polystyrene	1.6	1.7	1.7	1.8	1.8
R2.0 extruded polystyrene	2.0	2.1	2.2	2.3	2.3	2.4

R9. METAL ROOF, RAKED CEILING WITH CONCEALED RAFTER, BULK INSULATION

 <p>1. Metal roofing 2. Sarking RFL 3. Timber roofing batten 4. Airspace (Reflective) 5. Bulk insulation 6. Timber rafter 7. Vapour barrier 8. Plasterboard</p> <p>Slope: 15° to 35°</p>	Total R-value for roof/ceiling						
	Heat flow <i>DOWN</i>			Heat flow <i>UP</i>			
	R1.5 bulk insulation	2.2	2.2	2.3	2.2	2.3	2.3
	R2.0 bulk insulation	2.6	2.6	2.7	2.7	2.7	2.8
	R2.5 bulk insulation	2.9	3.0	3.1	3.1	3.2	3.2
	R3.0 bulk insulation	3.3	3.4	3.4	3.6	3.6	3.6
R3.5 bulk insulation	3.6	3.7	3.8	3.9	4.0	4.0	

R10. TILE ROOF, RAKED CEILING WITH CONCEALED RAFTER, BULK INSULATION

 <p>1. Tiles 2. Timber tile batten 3. Sarking RFL 4. Timber rafter 5. Bulk insulation 6. Vapour barrier 7. Plasterboard</p> <p>Slope: 15° to 35°</p>	Total R-value for roof/ceiling						
	Heat flow <i>DOWN</i>			Heat flow <i>UP</i>			
	R1.5 bulk insulation	2.2	2.3	2.3	2.3	2.3	2.3
	R2.0 bulk insulation	2.6	2.7	2.7	2.8	2.8	2.8
	R2.5 bulk insulation	3.0	3.0	3.1	3.2	3.2	3.2
	R3.0 bulk insulation	3.3	3.4	3.5	3.6	3.6	3.7
R3.5 bulk insulation	3.6	3.7	3.8	4.0	4.0	4.1	