

'R' VALUES FOR COMMON EXTERNAL CONSTRUCTION COMPARISON

- Wall system performs Worse
- Wall system performs Equal
- Wall system performs Better

* Values below the tables show the actual difference in the 'R' values
N/A is information in Not Available
Refer to notes in blue for clarification of the wall details

**STEEL WALL FRAMING -
ati Cavi-Break used as thermal break and cavity batten**

90mm steel studs @ 600 crs with 20mm thick ATI Cavi-Break™ Strips, 10mm plasterboard internal wall lining, 9.5mm FC external cladding, breathable vapour barrier and glasswool insulation batts

** Note 90 x 35 studs and 2700 high wall height used for results*

| R2.0 batts | | R2.5 batts | | R2.7 batts | |
|------------|--------|------------|--------|------------|--------|
| Summer | Winter | Summer | Winter | Summer | Winter |
| 2.0 | 2.2 | 2.3 | 2.5 | 2.5 | 2.6 |

R' values will be the same for 9.5mm fibreboard cladding such as Weathertex

**STEEL WALL FRAMING -
James Hardie 'Hardiebreak'**

90mm steel studs @ 600 crs with Hardiebreak thermal break, 10mm plasterboard internal wall lining, 9.5mm FC external cladding, breathable vapour barrier and glasswool insulation

** Note 90 x 35 studs and 2700 high wall height used for results*

| R2.0 batts | | R2.5 batts | | R2.7 batts | |
|------------|--------|------------|--------|------------|--------|
| Summer | Winter | Summer | Winter | Summer | Winter |
| 1.77 | 1.85 | 1.97 | 2.06 | 2.05 | 2.13 |
| -0.23 | -0.35 | -0.33 | -0.44 | -0.45 | -0.47 |

**STEEL WALL FRAMING -
James Hardie - 19mm FC cavity trim**

90mm steel studs @ 600 crs with 19mm FC cavity trim on-stud, 10mm plasterboard internal wall lining, 9.5mm FC external cladding, breathable vapour barrier and glasswool insulation batts

** Note 90 x 35 studs and 2700 high wall height used for results*

| R2.0 batts | | R2.5 batts | | R2.7 batts | |
|------------|--------|------------|--------|------------|--------|
| Summer | Winter | Summer | Winter | Summer | Winter |
| 1.64 | 1.72 | 1.8 | 1.88 | 1.86 | 1.93 |
| -0.36 | -0.48 | -0.50 | -0.62 | -0.64 | -0.67 |

**STEEL WALL FRAMING -
70 x 35 Timber batten**

90mm steel studs @ 600 crs with 70 x 35 timber batten on-stud, 10mm plasterboard internal wall lining, 9.5mm FC external cladding, breathable vapour barrier and glasswool insulation batts

** Note this has been extrapolated from a system by removing the rigid insulation and should not be taken as final. 2700 wall height.*

| R2.0 batts | | R2.5 batts | | R2.7 batts | |
|------------|--------|------------|--------|------------|--------|
| Summer | Winter | Summer | Winter | Summer | Winter |
| 1.7 | 1.8 | N/A | N/A | N/A | N/A |
| -0.3 | -0.4 | | | | |

**TIMBER WALL FRAMING -
ati Cavi-Break used as a cavity batten**

90mm timber studs @ 600 crs with 20mm thick ATI Cavi-Break™ Strips, 10mm plasterboard internal wall lining, 9.5mm FC external cladding, breathable vapour barrier and glasswool insulation batts

** Note 90 x 45 studs and 2700 high wall height used for results*

| R2.0 batts | | R2.5 batts | | R2.7 batts | |
|------------|--------|------------|--------|------------|--------|
| Summer | Winter | Summer | Winter | Summer | Winter |
| 2.2 | 2.4 | 2.6 | 2.8 | 2.8 | 3.0 |

**TIMBER WALL FRAMING -
James Hardie - Direct fix**

90mm timber studs @ 600 crs, 10mm plasterboard internal wall lining, 9.5mm FC external cladding, breathable vapour barrier and glasswool insulation batts

** Note 90 x 45 studs and 2700 high wall height used for results*

| R2.0 batts | | R2.5 batts | | R2.7 batts | |
|------------|--------|------------|--------|------------|--------|
| Summer | Winter | Summer | Winter | Summer | Winter |
| 1.93 | 2.04 | 2.26 | 2.37 | 2.39 | 2.5 |
| -0.27 | -0.36 | -0.34 | -0.43 | -0.41 | -0.5 |

**TIMBER WALL FRAMING -
James Hardie FC cavity trim**

90mm timber studs @ 600 crs with 19mm FC cavity trim on-stud, 10mm plasterboard internal wall lining, 9.5mm FC external cladding, breathable vapour barrier and glasswool insulation batts

** Note 90 x 45 studs and 2700 high wall height used for results*

| R2.0 batts | | R2.5 batts | | R2.7 batts | |
|------------|--------|------------|--------|------------|--------|
| Summer | Winter | Summer | Winter | Summer | Winter |
| 2.26 | 2.4 | 2.59 | 2.73 | 2.71 | 2.85 |
| 0.06 | | -0.01 | -0.07 | -0.09 | -0.15 |

**TIMBER WALL FRAMING -
James Hardie - 70 X 35 Timber batten**

90mm timber studs @ 600 crs with 70 x 35 timber batten on-stud, 10mm plasterboard internal wall lining, 9.5mm FC external cladding, breathable vapour barrier and glasswool insulation batts

** Note 90 x 45 studs and 2700 high wall height used for results*

| R2.0 batts | | R2.5 batts | | R2.7 batts | |
|------------|--------|------------|--------|------------|--------|
| Summer | Winter | Summer | Winter | Summer | Winter |
| 2.34 | 2.48 | 2.69 | 2.84 | 2.83 | 2.97 |
| 0.14 | 0.08 | 0.09 | 0.04 | 0.03 | -0.03 |

'R' value calculations for wall systems using ATI Strips are based on Report/Calculations No W230314 prepared by Acronem Consulting Australia Pty Ltd Calculations are based upon:

- * AIRAH Technical handbook, Edition 5 2013, pp 62-73 - Thermal Properties of Building and Insulating Material
- * AS/NZS 4859 Parts 1 & 2: 2018, Thermal insulation materials for buildings incorporating the effects of thermal bridging
- * Wall outer and inner surfaces are determined as the relevant isothermal planes without intermediate thermal bridging paths
- * Test Report(s) from an Accredited Testing Laboratory for Material R-Value and Emittance of IR Reflective Surfaces where applicable. Elements of construction varying from that described may, as a result, produce a different thermal resistance.