



## Generic Wall

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Section: **X C-WALL 0.17 103b10c50i50i100b25t15p**

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### GENERAL DATA

Element type: **external wall**

Direction of heat flow: **horizontal**

Number of layers: **seven**

Internal surface resistance  $R_{si} [m^2 K/W] = 0.13$

External surface resistance  $R_{se} [m^2 K/W] = 0.04$

### CALCULATIONS

N° of bridged layers / N° of thermal paths = 1 / 2

Upper limit of resistance  $R_{upper} [m^2 K/W] = 5.87$

Lower limit of resistance  $R_{lower} [m^2 K/W] = 5.87$

Total resistance of element  $R_T [m^2 K/W] = 5.87$

Basic U-value of element  $U_{basic} [W/m^2 K] = 0.17$

Correction for air voids  $\Delta U_g [W/m^2 K] = 0.000$

Correction for fasteners  $\Delta U_f [W/m^2 K] = 0.000$

Total corrections  $\Delta U_g + \Delta U_f [W/m^2 K] = < 3\%$

Total element thickness  $[mm] = 353$

### RESULTS

Final U-value of element  $U_{final} [W/m^2 K] = 0.17$

Minimum mass of element  $[kg/m^2] = 331$

| Internal surface, $R_{si} [m^2 K/W] = 0.13$ |                |  |                                      |
|---|----------------|--|--------------------------------------|
| Layer 1                                     | Material type: | <b>continuous material</b>                                 | Thickness $[mm] = 103$ Air: Fixings: |
|   | Material:      | <b>brickwork (outer leaf)</b>                              | Ther. conductivity K = <b>0.770</b>  |
|   | N/A            |  | Thermal resistance R = <b>0.134</b>  |
| Layer 2                                     | Material type: | <b>airspace</b>  | Thickness $[mm] = 10$ Air: Fixings:  |
|   | Material:      | <b>unventilated air layer ( &lt;=300mm)</b>                | Ther. conductivity K =               |
|   | N/A            |  | Thermal resistance R = <b>0.150</b>  |
| Layer 3                                     | Material type: | <b>continuous insulation</b>                               | Thickness $[mm] = 50$ Air: Fixings:  |
|   | Manufacturer:  | <b>TYPE: Kingspan products</b>                             | Ther. conductivity K = <b>0.020</b>  |
|   | Product:       | <b>Kooltherm K8 cavity board (foil faced) ( &gt;=45mm)</b> | Thermal resistance R = <b>2.500</b>  |
| Layer 4                                     | Material type: | <b>continuous insulation</b>                               | Thickness $[mm] = 50$ Air: Fixings:  |
|   | Manufacturer:  | <b>TYPE: Kingspan products</b>                             | Ther. conductivity K = <b>0.020</b>  |
|   | Product:       | <b>Kooltherm K8 cavity board (foil faced) ( &gt;=45mm)</b> | Thermal resistance R = <b>2.500</b>  |
| Layer 5                                     | Material type: | <b>continuous material</b>                                 | Thickness $[mm] = 100$ Air: Fixings: |
|   | Material:      | <b>concrete (blocks, medium density 1400kg/m3)</b>         | Ther. conductivity K = <b>0.570</b>  |
|   | N/A            |  | Thermal resistance R = <b>0.175</b>  |
| Layer 6                                     | Material type: | <b>airspace</b>  | Thickness $[mm] = 25$ Air: Fixings:  |
|   | Material:      | <b>unventilated air layer ( &lt;=300mm)</b>                | Ther. conductivity K =               |
|   | N/A            |  | Thermal resistance R = <b>0.185</b>  |
| Layer 7                                     | Material type: | <b>continuous material</b>                                 | Thickness $[mm] = 15$ Air: Fixings:  |
|   | Material:      | <b>plasterboard</b>  | Ther. conductivity K = <b>0.250</b>  |
|   | N/A            |  | Thermal resistance R = <b>0.060</b>  |
| External surface, $R_{se} [m^2 K/W] = 0.04$ |                |  |                                      |

\* - indicates bridged layer.