**Activity 1 Worksheet: Calculating heat loss through a wall**

# Practice questions

## Exercise 1

A building has a flat-roof kitchen extension. Calculate the heat lost for a 4 m by 4 m square flat roof comprised of the structure layers given in the table when the temperature difference between the inside and outside of the building is 15°C.

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| **Material** | **Thermal resistance, , in** **m2 K/W** |
| 100 mm reinforced concrete roof slab | 0.07 |
| 19 mm roofing felt | 0.04 |
| 100 mm glass fibre reinforcement | 2.5 |
| 12.5 mm plasterboard | 0.08 |
| Outside surface resistance | 0.06 |
| Inside surface resistance | 0.12 |

## Exercise 2

A residential building has a timber first floor. Calculate the heat lost for a 5 m by 5 m square timber floor comprised of the structure layers given in the table when the temperature difference between the underside of the floor and the finished floor surface is 5°C.

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| **Material** | **Thermal resistance, , in** **m2 K/W** |
| 18 mm tongue and groove timber floorboards | 0.12 |
| 150 timber joists | 0.14 |
| 100 mm glass fibre reinforcement | 2.5 |
| 12.5 mm plasterboard | 0.08 |
| Outside surface resistance | 0.06 |
| Inside surface resistance | 0.12 |