

# External solid wall insulation

## A thermal layer for outside walls

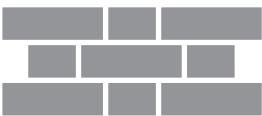
Nearly half the heat lost from some solid-walled houses (those without a wall cavity) escapes through the walls. Insulating these walls keeps the warmth in for longer and makes homes more comfortable and cheaper to heat.

Solid wall insulation may be suitable for a variety of wall types such as brick, stone, steel-framed and concrete construction. And, depending on the circumstances, the walls can be insulated internally (from the inside) and externally (from the outside); both are significant undertakings in terms of cost and disruption.

### How do I know if my home has solid walls?

If your home is made of brick, and the bricks have an alternating long-short-long pattern, then the walls are likely to be a solid construction with no cavity. If you can see only the long edge of the bricks, then the wall is almost certainly a cavity wall.

#### Solid wall ▼



#### Cavity wall ▼



If you can't see the pattern of the brick work then measuring the thickness of the wall at any entrance or window will help determine the construction type. A solid brick wall is usually about 22cm thick, a cavity wall between 27cm and 30cm, and a solid stone wall could be as much as 50cm. The age of your home can also be a good indicator. As a general rule, if it was built before the late 1920s it is likely to have solid walls.

### What does external wall insulation involve?

External solid wall insulation involves adding a layer of insulating material to the outside walls of a building and coating this with a protective render or cladding.



**A solid-walled urban home that has had its walls insulated externally**

There are lots of options to create the finish that you want and these may even add value to your home. The total depth of this layer ranges from around 50mm to 130mm, depending on the system used.

External solid wall insulation, rather than internal, may be particularly suitable if you want to avoid any loss of space or the disruption of work going on inside your house, or if you are doing other work to the exterior of your property, such as re-rendering. It is a specialist job that requires an approved contractor who is qualified to a particular insulation system

### Changes to the external appearance

External solid wall insulation won't affect the size of your rooms (unlike internal solid wall insulation) but you might need planning permission as it could change the appearance of the building. There are a wide range of colours and finishes that can be applied and all the options should be discussed with your chosen contractor. Often the existing finish can be replicated to preserve much of the original appearance of the house.



As solid wall insulation is now constituted as an 'improvement' rather than an 'enlargement' you are unlikely to need planning permission unless your house is listed or is in a national park, area of outstanding natural beauty, conservation area or world heritage site. If in doubt, check with your local authority before having any work done.

## Average costs and savings

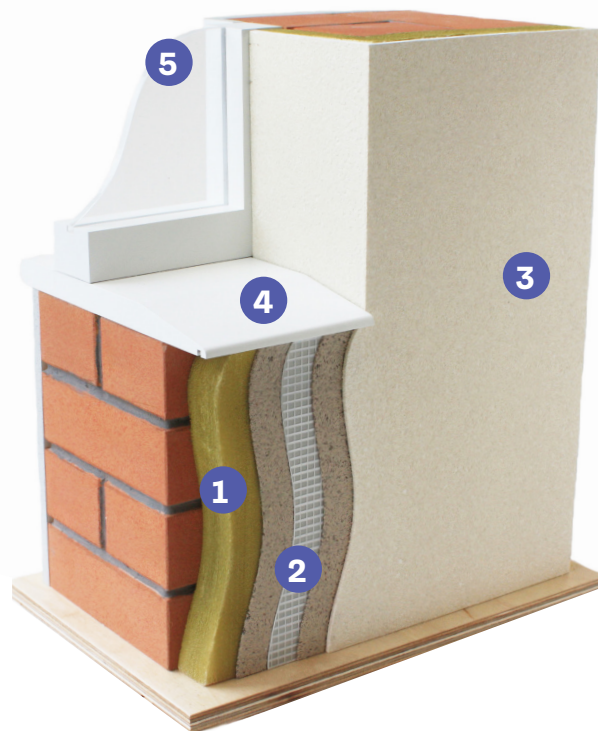
Externally insulating your home costs on average £12,000, depending on the size of the building and the number of outside walls being insulated. It is likely to be more expensive than internal wall insulation because the cost of material and labour are higher.

A typical 3-bedroom semi-detached house using gas heating could save around £558 per year on heating bills by installing external wall insulation and a detached house around £708 per year (figures from the National Housing Model).

## Disruption

External solid wall insulation is a significant undertaking that inevitably involves a degree of disruption. Your installer should make you aware of any particular issues but things to consider include:

- Garden access may be required and boundary walls and lean-to structures may need to be adapted or removed.
- Scaffolding may need to be erected, and a space found for a skip and storage space for materials.
- External fittings like rainwater pipes, satellite dishes and telephone and power cables may need to be removed and replaced afterwards.
- Contractors will require water and power and the use of a toilet.
- There will be a lot of noise, including power tools, and the work will generate a lot of dust and dirt.



**Model showing a cut-away of external solid wall insulation.**

- 1 Insulation board.** This is the layer of insulation that keeps the warm air in. It is attached to the external wall of the house and protects and extends the life of the brickwork.
- 2 Middle section.** This section, composed of a mesh between two thin layers of render, adds strength and rigidity.
- 3 Top layer.** A final coating of cladding or render is applied to give the wall the required appearance. It brings the total thickness of the added material to between 50 and 125 mm.
- 4 Window sill.** External fittings such as pipework and satellite dishes may need to be temporarily removed. It may be necessary to extend window sills so they protrude beyond the cladding
- 5 Window and frame.** Windows can change in appearance, as the insulation needs to extend into the window recess.



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