

External solid wall insulation

Adding a thermal layer to the outside walls



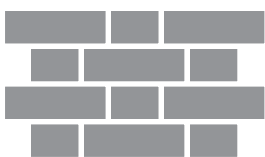
Nearly half of all the heat lost from some solid-walled houses (those without a wall cavity) escapes through the walls. Insulating these walls keeps the warmth at home for longer and makes homes more comfortable and cheaper to heat.

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.

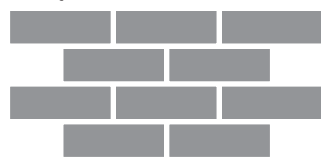
How do I know if my home has solid walls?

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 to determine the construction type. A solid brick wall is usually about 22 cm thick, a cavity wall between 27 cm and 30 cm thick, and a solid stone wall could be as much as 50 cm. 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 unlikely to have a cavity.



External solid-wall insulation is not a DIY task.

External solid wall insulation involves adding an extra 'thermal layer' to the outside of the building



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. There are lots of options to create the finish that you want and these may even add value to your home.

External solid wall insulation may be particularly suitable if you wish to avoid internal disruption, the loss of internal space or are doing other work to the exterior of your property, such as re-rendering. It is a specialist job that requires an approved installer who will specialise in work using a specific 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 is 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, but you may still need to apply for planning permission. Check with your local authority before you have any work done.

Average costs and savings

Externally insulating your home costs on average £9,000-£13,500, though this depends 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 of the cost of material and labour are higher. A typical 3-bedroom semi-detached house using gas heating could save around £235 per year on heating bills by installing external wall insulation whereas a detached house heating with oil could save around £480 per year.

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



A 19th-century urban home that has had its walls insulated externally

The model below shows a cut-away of **external solid wall insulation applied to a non-cavity brick wall**. This kind of wall is common among houses built between around 1880 and the mid-1920s.

1 | Insulation board

This is the layer of insulation that will slow the loss of heat from inside the house. It is attached to the external wall, either with an adhesive or mechanical fixings and protects and extends the life of your brickwork.

2 | Middle section

This section, composed of a mesh between two thin layers of render, adds strength and rigidity.

3 | Top layer

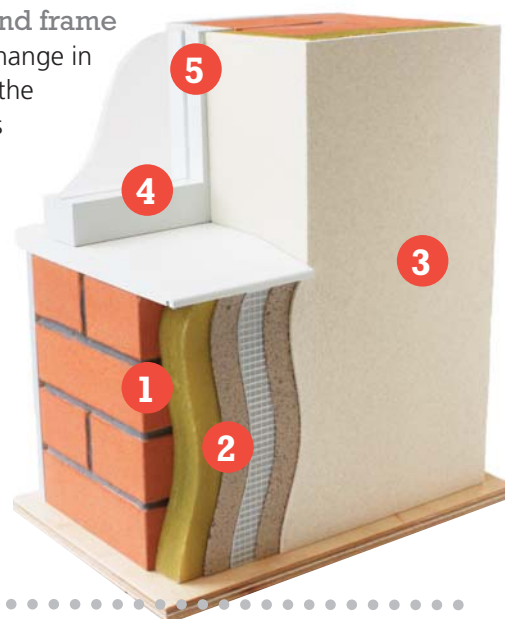
A final coating of cladding or render is applied to give the wall the required appearance. It brings the total thickness of the added material to between 50 and 125 mm.

4 | Window sill

External fittings such as pipework and satellite dishes may need to be removed before insulation is applied. It may be necessary to remove and 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.



This leaflet was originally produced by the **Centre for Sustainable Energy (CSE)** and reprinted in this version on behalf of SEACS.

CSE's Home Energy Team offers free advice on domestic energy use to householders in Bristol and Somerset (including the unitary authorities of North Somerset and Bath & North East Somerset).

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The aim of the **SEACS project** is to create opportunities to reduce energy demand, improve energy efficiency and use clean, renewable energy. SEACS was selected under the European Cross-border Cooperation Programme INTERREG IV A France (Channel) – England, co-funded by the ERDF.

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