

STEICO Internal Wall Insulation System

Whilst new build houses are built with integrated insulation such as filled cavity walls, older properties were built without insulation considerations and relied on heating to keep the living environment warm. Acceptable 21st century living temperatures are higher than those of 50 + years ago with the expectation being internal temperatures of 20 degrees C or above as the norm.

Whilst solid wall construction offers advantages of thermal mass, which behaves like a night storage heater, being warmed from outside by the sun or from inside by a heating system, central heating or open fires or stoves, the downside to older buildings is that they can be draughty and poorly insulated so keeping warmth in can be an issue.

As fuel costs rise and heating bills climb the focus on insulation has become more concentrated. Traditionally built properties are often the most costly to heat due to lack of insulation and a past reliance on cheap fuel to keep the property warm.

When considering insulation materials it is important to ensure that they are not going to have any damaging effects to the fabric of the building. As well as providing insulation they should enable the building to breath and be sympathetic and work with the fabric of the building.

STEICO wood fibre fulfils all the criteria above and offers a sustainable solution to the insulation needs of traditional buildings. Wood fibre insulation offers thermal and acoustic insulation benefits as well as moisture buffering and additional thermal mass contributing to a healthy living environment. Combined with Roundtower lime plasters, STEICO wood fibre will reduce heating costs and preserve the integrity of the building fabric.

Installation Process:

STEICO wood fibre is straightforward to install and should be installed onto a level wall. The depth of insulation is dependent on the level of thermal comfort desired and amount of space available to fit insulation. The effect of cooling the wall by applying internal insulation will also need to be considered, interstitial condensation risk (ICR), and Roundtower Lime can advise on this design aspect.

Modern or failing lime plasters should be removed and a levelling coat of lime plaster applied, it is important that the system remains breathable. Before applying the STEICO wood fibre board, it is essential the walls are levelled. Roundtower Insulating Plaster is a good option for the levelling coat as it can be applied up to 30mm depth and is highly vapour permeable. A standard lime render which can be bought premixed or can be site mixed can also be used as the levelling coat. The depth of the levelling coat will depend on the unevenness of the exiting wall. Generally brick walls require less material than stone walls but every project will be unique.



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The STEICO wood fibre board is then bonded to the wall with Roundtower Board Render. This is generally applied to the back of the boards with a notched trowel. The addition of appropriate mechanical fixings is necessary to extra secure the boards. Typically 5 fixings per board are required into masonry. We aim for approximately 50mm embedment into the stone or brick wall.

Before carrying out any plastering work, it is important to inspect the boards. Check that the boards have been fixed correctly, are level and that there is no gaps between the boards. The quality of finishes achieved will heavily depend on the installation of the boards.

Window reveals are insulated with 20mm reveal boards to maintain the insulation envelope right up to the window frames. Airtightness tapes can be used to seal between the wood fibre board and the window frame to create a seal.

The STEICO wood fibre boards are plastered with a thin coat lime plaster system. Comprising of a base coat of Roundtower Board Render with embedded alkali resistant mesh. The base coat onto the boards is done in two passes. First a 4mm pass of Roundtower Board Render is applied directly onto the wood fibre board. An alkali resistant mesh is then embedded and whilst still wet an additional 4mm coat is applied. This is one 8mm coat, done in two 4mm passes. A top coat lime plaster finish of Roundtower Heritage Lime Skim is applied at a depth of 2/3mm once the base coat has dried.

Roundtower Heritage Lime Skim is made from Lime Putty, a Non-Hydraulic Lime that sets through exposure to atmospheric Carbon Dioxide in the presence of moisture. This process will be influenced by climatic conditions and will behave differently depending on ambient temperatures.

Protection should remain in place for as long as necessary. Ensure that the rate of drying is consistent and that strong draughts are excluded from the working area. This is particularly important where a building has windows removed or doors open. Heating regimes should be tempered so not to force dry the plaster.

Generally speaking; lime plaster will be slower to harden in the winter than in the summer and adequate measures should be deployed to protect it; it should never be allowed to dry out too quickly. Never force the drying by introducing forced or excessive heating. If heating is required to maintain a proper working temperature, use propane heating, this has the effect of producing both moisture and heat simultaneously. Ensure the temperature is adequately controlled.

The key to successful installation is the detailing and we can advise on appropriate airtightness tapes, thermally broken fixings, insulation between floors (if the insulation is installed over more than one storey) and sealing of penetrations as required for each project.

As the full system is vapour-open and allows moisture to pass freely, it is essential to use vapour-permeable paints in conjunction with the wood fibre boards and lime plasters. We recommend Beeck's range of mineral paints.



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Beeck Fixative should be used as a primer onto the lime plaster followed by two coats of Beeck Maxil Pro. There is a huge variety of colours available and we can mix Beeck Maxil Pro to any RAL or NCS colour.



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