



Dense wood fibre with lime plaster

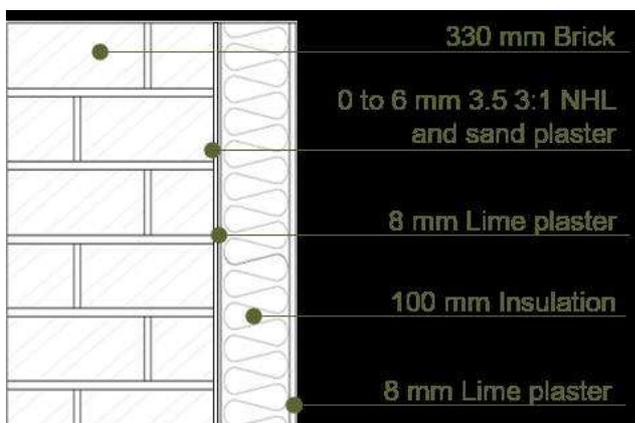
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Walls

What is the solution?

The solution is capillary active internal wall insulation made of dense wood fibre. The insulation is supplied in boards, which are installed to the internal side of the wall with an even bonding coat and additional thermally-broken mechanical fixings. The bonding coat is made of lime plaster, and another layer of lime plaster is applied as interior finish. If plasterboard is preferred to wet plaster, some boards allow plasterboard screws for dry fit installation.

Cross section of the wall build-up, available pictures of the solution:





Why does the solution work in terms of compatibility with conservation, moisture safety and energy improvement?

The aim of the solution is to improve the thermal resistance of a wall. The solution allows to retain the external appearance of the wall and preserve the external façade, as it is applied to the internal wall. In some historic buildings, there is a reduced extent of rainwater protection (especially in walls with exposed brick), allowing rainwater penetration and moisture accumulation within the wall. In this solution, the risk of moisture accumulation is reduced because the insulation is vapour open and capillary active, allowing the drying of excess moisture.

Description of the context:

The solution was installed in historic buildings that did not have interior surfaces of heritage significance, and in buildings in conservation areas. The original internal surface of the wall should not have decorative elements or elements of historical significance.

Pros and cons of the solution:

The pros are the energy improvements with low moisture risks and good compatibility. The full bonding minimizes the risk of mould growth at interfaces and allows water redistribution from the existing wall. The cons are the low reversibility (mainly due to mechanical fixings) and the long installation process, as it requires a flat wall to have full contact between wall and board.

Type of data available (level of information, simulation):

The solution was monitored on site for two years (temperature and humidity sensor inside the wall, internal temperature and relative humidity), showing drying of construction moisture and safe moisture levels.

Additional Information:

ATTENTION!!! This solution is a vapour open solution, but the wood fibre insulation can be used for a vapour open system only after deep evaluation of the case including driving rain, existing wall material and thickness. The

evaluation must be done by means of hygrothermal simulations. There are other materials on the market, that are more suitable for vapour open systems.

Is there any related publication? If yes, please provide any available link or document for further reading

[https://www.hiberatlas.com/smartedit/projects/185/Marincioni, Altamirano-Medina - 2014 - Effect of orientation on the hygrothermal behaviour of a capillary active internal wall insulatio.pdf](https://www.hiberatlas.com/smartedit/projects/185/Marincioni,Altamirano-Medina-2014-Effect-of-orientation-on-the-hygrothermal-behaviour-of-a-capillary-active-internal-wall-insulation.pdf)

Paper - Effect of orientation on the hygrothermal behaviour of a capillary active internal wall insulation