



## Wet applied cellulose insulation between frames

Author: Roger Curtis (HES)

### Walls

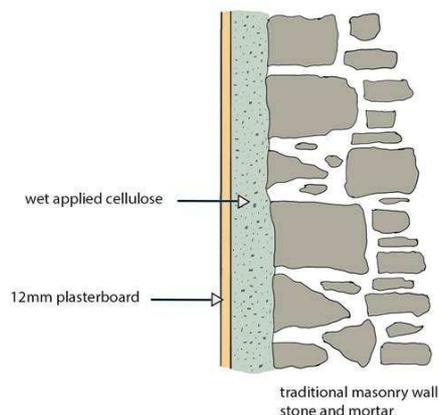
*What is the solution?*

This measure is suitable when there are no internal linings and the walls are back to the masonry. The insulation material, a wet cellulose fibre mix, is blown onto the wall between vertical timber battens. The material is allowed to dry, and the surface is planed flat. Plasterboard is then fastened to close off.

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

Indicative detail showing the cellulose and the plasterboard at Sword Street © HES

Wall Insulation - Wet Applied Cellulose





View of the tenement block at Sword Street, Glasgow © HES



Blowing on the wet cellulose insulation © HES



Making flat the cellulose material prior to the plasterboard © HES

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

This measure is only suitable if there are no historic material left on the inside of the walls. The material is vapour permeable and capillary active and allows traditional walls to perform as intended. The insulation is generally in the region of 60 mm thick, and gives a U-value of around 0,6 W/(m<sup>2</sup>K).

*Description of the context:*

This measure was tested in a small tenement flat in Glasgow, built around 1910. The building needed major refurbishment due to subsidence, and the owner, a housing association, sought to deliver energy upgrades during this construction project. Other aspects of building upgrade were also addressed

such as plumbing, electrical wiring and heating and hot water.

*Pros and cons of the solution:*

The solution ensures a good bond or contact with the masonry wall, and certainty of no cold spots or missed areas. However, it is invasive and requires the removal of most services. The measure has worked well following occupancy.

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

The material supplier carried out a condensation/moisture risk assessment using the Glaser method. The installer had done work like this on new build properties, was a new application for an older building.

*Additional Information:*

Publications of Historic environment Scotland:

[https://www.historicenvironment.scot/archives-and-research/publications/?publication\\_type=31&curPage=2](https://www.historicenvironment.scot/archives-and-research/publications/?publication_type=31&curPage=2)

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

<https://www.hiberatlas.com/smartedit/projects/207/Case Study 4 - Sword Street, Glasgow; Internal wall insulation to six tenement flats.pdf>

The HES Refurbishment Case Study for the project

[https://www.hiberatlas.com/smartedit/projects/207/TP24 - Review of Energy Efficiency Case Studies \(2018\).pdf](https://www.hiberatlas.com/smartedit/projects/207/TP24 - Review of Energy Efficiency Case Studies (2018).pdf)

This document summarises HES projects, many of which had work to walls.