warm|shell
Internal

Interior Wall Insulation
Maintenance Guide

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Lime Green's Warmshell Internal is an internal wall insulation solution designed to radically improve the thermal performance of existing solid masonry buildings while ensuring moisture is controlled at safe levels within walls.

Please keep this document with other important papers so you can refer back to it should you ever need this information.

For further info, please visit www.lime-green.co.uk

As with all building solutions, or components, some maintenance is required for the continued effective performance of the solution and to ensure the integrity and longevity of the building.

Once Warmshell Internal has been fitted to a building no new protocols need to be adopted that should have not already been in place, such as effective ventilation for the particular occupancy and building performance, preventing excessive sources of moisture due to drying clothe on radiators etc.

External Care and Maintenance

The integrity of the external weathering surface of a building plays an important role in the upkeep of the property. It also plays a significant role in the long term effectiveness of internal wall insulation.

Lime Green's Site Assessment Checklist and Guide [L] document, outlines the key areas of a property that should be inspected and subsequently maintained. These include the following:

- The external wall should be dry. Particular attention should be given to the base of the wall, around windows and overhangs, near rainwater goods, waste pipes and wall penetrations.
- The wall should be free from salt contamination, a clear sign that excess moisture is at the base of the wall and being drawn up. Salt contamination can be seen as efflorescence on the surface of the wall with possible dark stains approximately 200mm above the efflorescence.
- The material condition of the external wall, brick, stone, render, or cladding should be examined.
- The condition, if applicable, of the joints between principle wall materials should be inspected, such as mortar joints, or cladding seams, window and door frame seals.

- Regular maintenance of guttering and down pipes is essential. Gutters should be cleaned at least once a year, and downpipes checked for blockages, leaks and that they are fitted securely to the wall. Overflows and leaks are obvious during heavy rain; discolouration or algae on the wall is a sign of a leaking downpipe.
- The water tightness of all penetrations such as ventilation ducts, gas flues for boilers, phone cables etc. Should be reviewed
- Drains – check they are not blocked & functioning

An annual visual inspection should be made to check that the areas listed above have not failed, or pose the risk of failure allowing water to saturate the outer wall, even in small quantities, or allow rainwater to penetrate the walls surface. Where signs of excess damp are present remedial work should be carried out promptly, before it reaches the internal surface.

Warmshell Internal is a very robust system and has been assessed using a WUFI calculation. This is a hygrothermal modelling tool that complies with BS 15026 in accordance with BS 5250. This assessment and real world monitoring confirms the long term suitability of Warmshell Internal for the property.

Internal Care and Maintenance

Continued visual inspection of the Warmshell Internal system is recommended to ensure that it is performing correctly. If there is any area, where Warmshell Internal has been applied, that is found to be damp, then investigations should be made. Areas where the wall has become damp can be seen as discoloration, black mould, or damaged plaster and they can be confirmed by touch, or a simple moisture meter.

Assessment should be made as to whether the damp is caused by external moisture sources or from condensation forming on the walls from internal moisture sources. If the former, then the moisture path running from outside to inside should be found and repaired. If dampness is through condensation then there will be three possible causes:

1. The moisture load in the building, or room, is too high. This is typically caused by a lack of ventilation and why many bathrooms are the site of black mould (black mould will only grow in clean water, so is almost always a sign of the repeated occurrence of condensation). The solution is to reduce the moisture load. This can be done by a life style change, for example don't dry clothes on radiators, or by increasing ventilation levels.
2. The detailing of the Warmshell Internal has be specified incorrectly, this could be the lack of insulation fitted in the reveals, wall returns etc. A detailed outline of the correct specification details can be found in Lime Green's Design Guide [L] and in the Details Drawings manual [L].
3. The installation has not been carried out correctly. This could be missing insulation, or insulation not abutting another building elements correctly. This can only be confirmed by removal of the damp area of plaster for full investigation and should naturally only be done once the other possible causes of damp have been fully considered.

Building alterations:

- **Decoration**

  Lime Green's Solo plaster can be left unfinished, it does not have to be painted or sealed though it may be treated with SoloGuard for stain repellency. Left unfinished it leaves a natural off-white lime hue to the walls which can be very pleasing. The additional benefit of unfinished Lime plaster are its antiseptic properties that help to improve air quality and reduce the proliferation of bacteria and mould.

  Solo plaster can be painted with most water based emulsion paints and mineral silicate paints. Vinyl emulsions, wall papers, and oil based paints should NOT be used.

- **Fixings**

  Guidance on fixing into Warmshell Internal can be found in the Design Guide [L] and in the Details Drawings manual.

- **Services**

  Guidance on running services behind, through and into the surface of Warmshell Internal, can be found in Design Guide [L] and in the Details Drawings manual [L]

- **Building alterations**

  Care must be taken when changes to room layouts, or building extensions, are made adjacent to Warmshell Internal. Guidance found in Design Guide [L] and in the Details Drawings manual [L] should be followed.

Damage to the system:

- **Impact damage**

  Warmshell Internal resists impact well, but sufficient force will crack, or even break the plaster surface. For areas of plaster that have been significantly damaged, cut back the damaged area to the insulation layer. Cut back a margin of approximately 30mm of the sound plaster, around the exposed insulation so that the reinforcing mesh, which should be in the centre of the Solo plaster thickness, can be seen.

  - Apply a fresh coat of Solo plaster over the exposed insulation and exposed mesh.
  - Apply a patch of mesh over the fresh plaster overlapping the exposed 30mm mesh boarder.
  - Apply more Solo plaster finishing flush with the original plaster surface.
  - Sand back if required after curing.
  - For smaller patches you can use Solo Filler.

- **Moisture damage due to Flooding**

  If the system has been damaged due to flooding then Warmshell Internal will need to be removed up to a high 500mm above the flood line. Once the wall has dried out Warmshell Internal can be re-installed.

Notice: Lime Green provide this information as a service and reserves the right to replace or change this information at any time.