lime|green

Woodfibre for Internal Wall Insulation

13/7/12

Introduction

Most heat in old houses is lost through the walls, but successfully upgrading them with internal insulation is a challenge. Historic buildings were not designed or built to accept the retrofitting of plastic membranes, insulation or paints, and all too frequently the end result is trapped moisture in the walls which can eventually lead to rot, mould and expensive remedial work.

Lime Green's woodfibre Internal Wall Insulation System is designed and tested to allow solid walls to stay dry, while offering modern levels of insulation and ease of application. In addition, the system is safe and environmentally sustainable, using natural ingredients that will maintain a healthy internal climate.

Suitability

The Lime Green Woodfibre Internal Wall Insulation System is suitable for solid-wall masonry buildings and some timber frames; however the following checks must be undertaken before starting:

- *External coatings and finishes* – must be vapour-open. Synthetic masonry paint or waterproof cement render are not suitable for this system.
- *Pointing mortar* – existing solid masonry pointing should be a breathable lime mortar and in good condition.
- *Damp walls* - the system is not generally used beneath ground level, below DPC or on walls which are permanently damp – please ask Lime Green for written guidance before ordering.
- *High Humidity* – in rooms with frequent high humidity (e.g. wet rooms, bathrooms and similar) a different specification is used. Please ask for written guidance before ordering.
- If applied over a stud, there must be no cavities or air gaps behind the woodfibre insulation board

Precautions

- Insulation board should only be fitted to damp free, dry walls.
- Insulate only above DPC level *and* above ground level.
- Services must be run beneath the insulation boards.
- Do not cover with vapour-closed paints or wall coverings.

About wood fibre board

Wood fibre board is a rigid natural insulation material with either a tongue-and-groove or square edge profile, manufactured in accordance with EN13171. Wood fibre not only has good thermal conductivity properties in the range of 0.039 to 0.044 W/mK, but also its breathability helps regulate the internal climate of a building. Square edge boards are usually used on masonry and tongue and groove on framing.

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Benefits

- Excellent insulation properties, prevents thermal bridging
- High heat protection during summer months
- Water vapour open construction for healthy room environment
- Fire class rating E (EN13501-1)
- Easily cut and handled using traditional woodworking tools
- CE marked and manufactured in accordance with ISO9001:2000
- Non allergenic and durable
- Environmentally sustainable – FSC certified
- Certified by natureplus® - European quality mark
- Fully recyclable
- Helps fix CO2 - carbon is stored in the finished product

About lime green Solo one coat lime plaster

Lime green Solo one coat lime plaster is specially designed for breathable insulation boards such as wood fibre. When used together they produce a system with optimum levels of breathability. As houses become more air tight, avoidance of synthetic foams and resins becomes more important for a healthy indoor climate.

- Ease of application – including same day finishing.
- No need for undercoats.
- High vapour exchange, maintains a healthy internal climate and a dry wall.
- Free of cement and solvents, for safe and simple disposal.
- Lime based, for durability, breathability and compatibility with historic buildings.
- Natural binder
- CE marked

Installation instructions board and plaster.

1) Components

		Product	Thickness/Dimension	Typical Requirements for 1 m² installed *
Plaster for levelling walls underneath boards (optional)		Lime green Duro	Typically 12mm (May vary from 0 to 25mm+)	17kg @ 10mm thick
Insulation board		Square Edge (masonry) or Wood fibre – tongue and groove (timber framing)	40 -100mm	1.3 boards
Fixings	**Masonry**	Fixing WT	Insulated hammer-in fixing	6.5
	Timber	Fixing H	Screw in fixing	8
Reinforcement		Lime green glass fibre mesh 454	Standard	1.10 m²
Plaster on boards		Lime green Solo one coat plaster	Approx 8-12mm	14-20kg
Paint		Aglaia natural emulsions	2 coats	0.24 to 0.28 Litres

2 Wall Preparation

- Externally check the pointing, paint or render is in fair condition. If not repair with suitable breathable materials (e.g. Natural Hydraulic Lime render, lime putty, etc. Please ask us for advice specific to your application). Remove any masonry paints or materials which are sealing the wall or acting as a vapour barrier.
- Internally, remove vinyl wall finishes and sealed plasters (e.g. gypsum)
- Masonry must be flat, level and porous. Old lime plasters can be ripped open with a scouring float. Bare brick or stone must be plastered with lime green Duro to flatten the wall. For more information on using this product please consult the relevant data sheet.
- Cables etc should be chased and run in the masonry or plaster before fitting the boards.

3) Installation

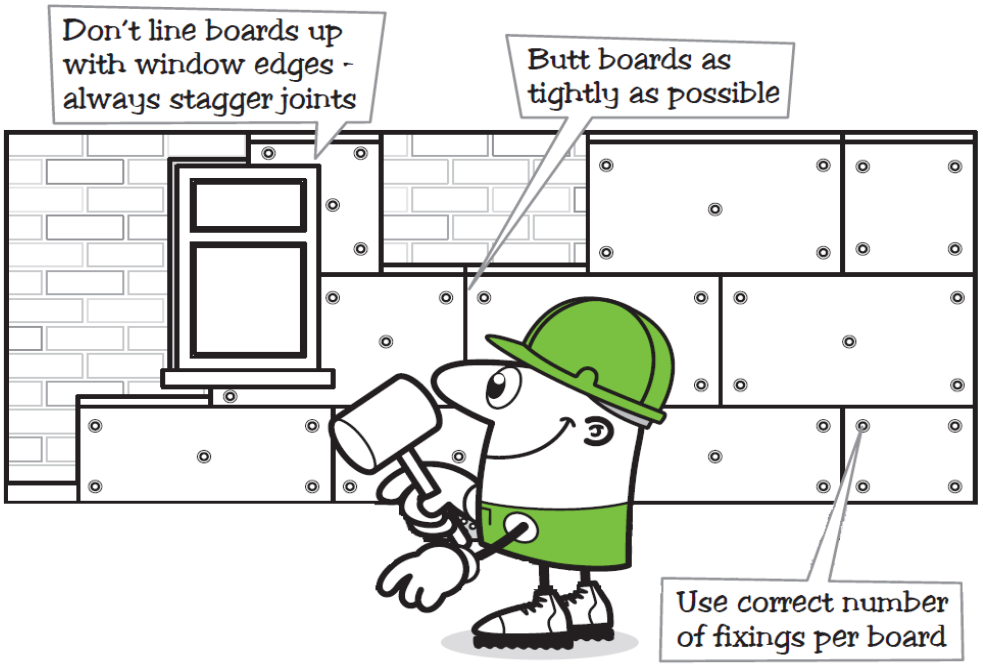
Preparation and correct fixing of the board and profiles is vital. Time spent getting this right will help avoid problems later. The plaster should not be considered as a way to hide errors or defects in the application of the boards.

a) Fixing the boards

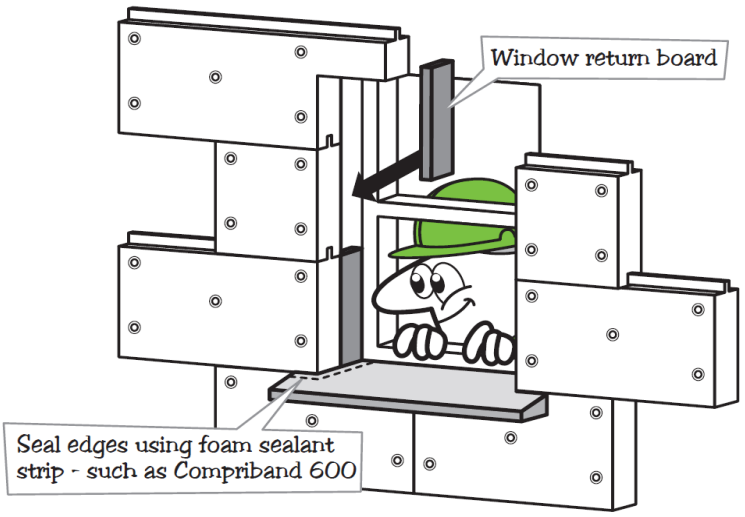
- Only fix dry boards.
- Cut the boards by hand or with a circular saw. Always cut out small pieces from a whole board.
- The first board is placed at the base of the wall and fastened in the centre with the appropriate fixing for the

background.

- The number of fixings is dependent on the type of background. Typically 5 fixings per board are required on masonry, or 2 per stud on timber.
- The boards are fixed in a lattice horizontally and pushed tightly together. They should alternate down corners. **Vertical joints must be staggered.**



- Cut pieces must be at least 200 mm wide.
- Services must be run beneath the boards.
- Do not align board edges with the windows.
- Always insulate reveals.
- Make sure the boards have an air tight fit around windows and doors – use Compriband if necessary.



b) Fixing types

The special fixings keep the wall warm and prevent thermal bridges. Various types are available for different backgrounds; please consult us for further details.

H

Insulated screw / washer plate for fixing the board into wooden backgrounds.

A stainless steel screw is also available for fixing into oak or other hardwoods with high tanin content.

WT

Hammer-in masonry fixing

Drill through the board with an SDS bit and hammer home fixing. Use type "LX" for AAC or hollow concrete blocks.

Thermax

Stand-off fixing anchors heavy items (shelves, kitchen units) in masonry behind the insulation board without creating a thermal bridge.

4) Plastering

Before plastering, inspect the boards. Check they have been fixed according to section 3a. Steps in the boards must be dubbed out with lime green Solo one coat lime plaster and allowed to set before plastering. Gaps greater than 10mm between the board connections must be foam-filled or packed out. Consult product datasheets for the plaster before starting.

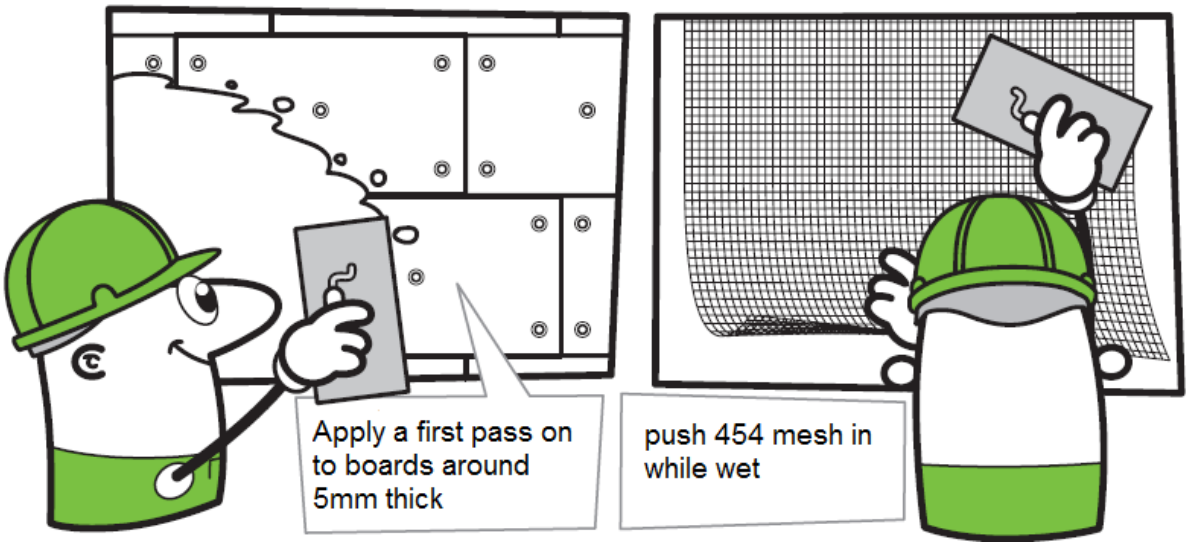
a) Beads

On older buildings corners may be formed traditionally with wooden rails.

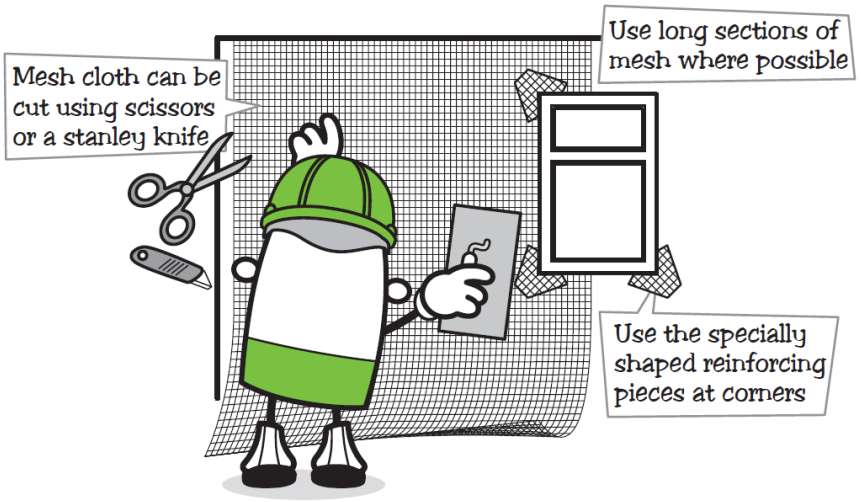
Alternatively fix PVC or metal beads to the board before starting.

b) Plaster finish on boards

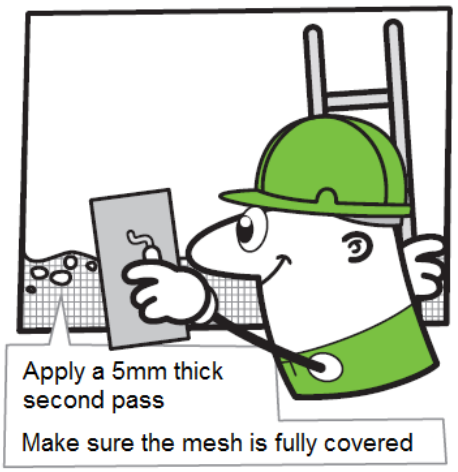
- Apply Lime green Solo one coat lime plaster in 2 passes to a combined thickness of 8 to 12mm.
- The first pass is applied approx 5-6mm thick – the 454 glass fibre mesh is pushed in to the plaster immediately while it is still tacky. Overlap joins in the mesh by 100mm



- Lime green 454 glass fibre mesh is doubled up around windows and doors, with a diagonal layer applied. The diagonal piece should be at least 200mm x 400mm.



- The second pass is applied over the top usually within 4 hours to give a total thickness approx 8 to 12mm thick.



- Level plaster with straight edge
- Allow at least 2 weeks drying time, during which time the plaster should be protected from rapid or forced drying.
- Do not over-work the surface as this may lead to “fire cracking”.
- Apply in temperatures above 5°C and below 30°C.

5) Painting

The system is vapour-open and functions by allowing moisture to pass freely. It is therefore important that only vapour-permeable paints are used for decoration. We recommend the following as being suitable:

Beeck Insil mineral paint

Aglaia Casein Binder paint & Natural Emulsions

	Lime green Solo one coat lime plaster on woodfibre system	Stud Wall	Insulated plasterboard system
Breathable walls?	✓	✗/✓	✗
Natural vapour control?	✓	✗/✓	✗
Low condensation risk?	✓	✗	✗
Free of VOC’s?	✓	✗/✓	✗
Simple, safe disposal?	✓	✗	✗
Single trade application?	✓	✗	✓
Ease of application?	✓	✗	✓