

warm|shell Internal

Interior Wall Insulation Installation Guide

Warmshell © 2021

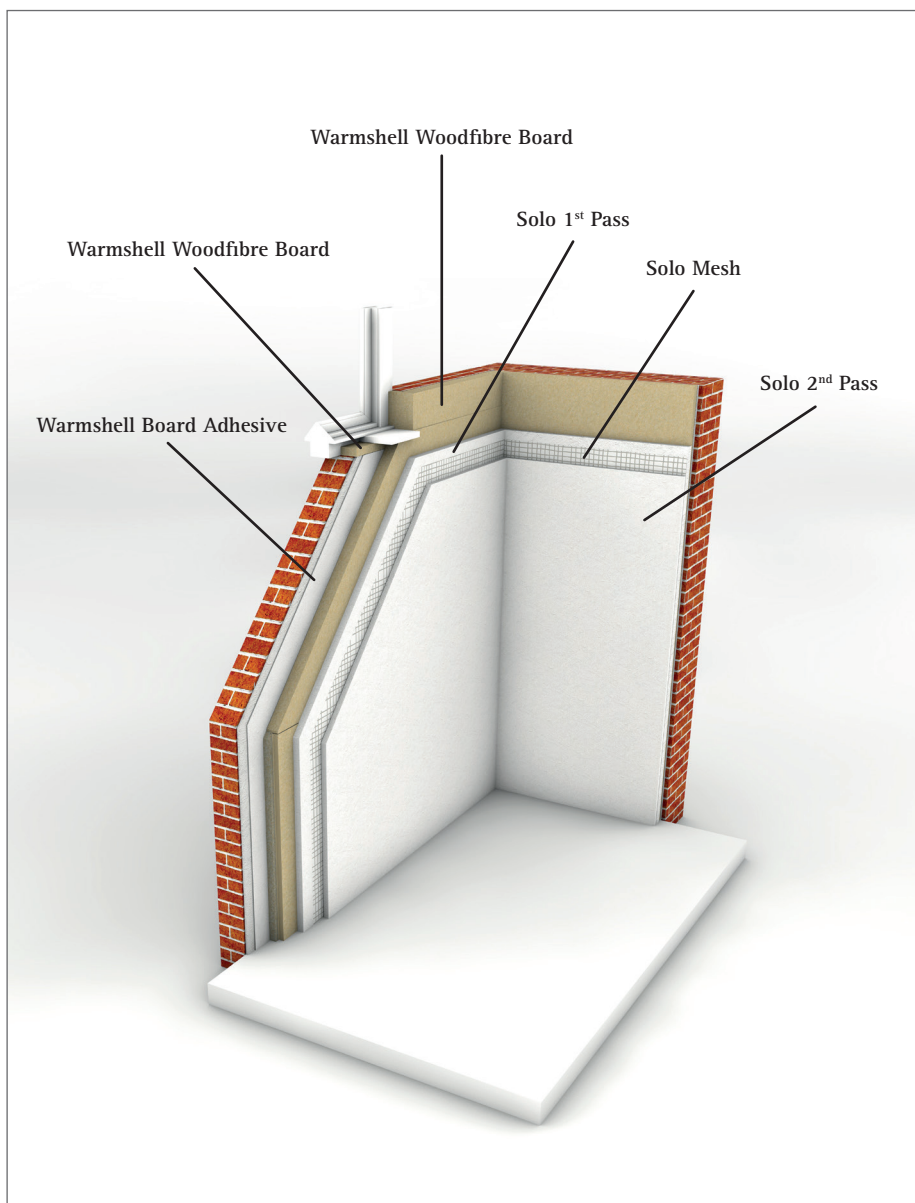


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warm|shell
Internal





Introduction

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

This moisture control is essential and ensures that the structural integrity of the building is maintained and the health of the occupants are not compromised. Additional benefits of Warmshell Internal include improved internal acoustics, very low VOCs, which help, along with the antiseptic properties of lime, to maintain good air quality. With the absence of biocides and toxic chemicals Warmshell Internal is safer to produce and use. Furthermore the woodfibre insulation employed at the core of the system sequesters carbon resulting in a much lower GWP (global warming potential) than the fossil fuel-based alternatives.

Internal Wall Insulation (IWI) solutions can be highly effective at reducing heat loss in historic buildings and solid wall properties. However it is key to remember that when insulation is fitted to a building the inherent physics of the building is changed. If this is not appreciated and as a result the Warmshell Internal system is not installed correctly then there is a very real risk that the building fabric could be compromised, or more seriously the health of the occupants could be harmed.

This Installation Guide is written as part of additional Warmshell Internal supporting material, which should be read alongside it, this includes:

Assessment:

- Site Assessment Checklist
- Site Assessment Guidance

Design:

- Design Guide
- Design Details
- Specification Clauses

Installation:

- Installation Guide

Preparation



- Carefully remove all existing features such as skirting, etc.
- Remove all existing wallpaper



- Remove impermeable coatings. If emulsion based scarify the surface
- If Gloss or eggshell based, remove entirely



- Reroute electrical services away from the wall/or/make good services to receive Warmshell Internal. Removal of sockets, checking length of existing cable will reach the new socket position (thickness of the insulation)
- **Remove ALL Plasterboard**
- Remove existing plaster if unstable, or gypsum based

Preparation



- If existing plaster has had to be removed, Apply Lime Green Duro [L], or Ultra [L], to bare stone or brick, as a dubbing out/levelling/parge coat to a thickness that will level out the surface to +/- 4mm, over the length of a Warmshell insulation board.

- Duro [L] and Ultra [L] requires a drying time of typically 1mm/day, subject to room humidity and temperature
- Parged walls must be relatively smooth, within +/-4mm over the length of a Warmshell insulation board, before the boards themselves are applied.

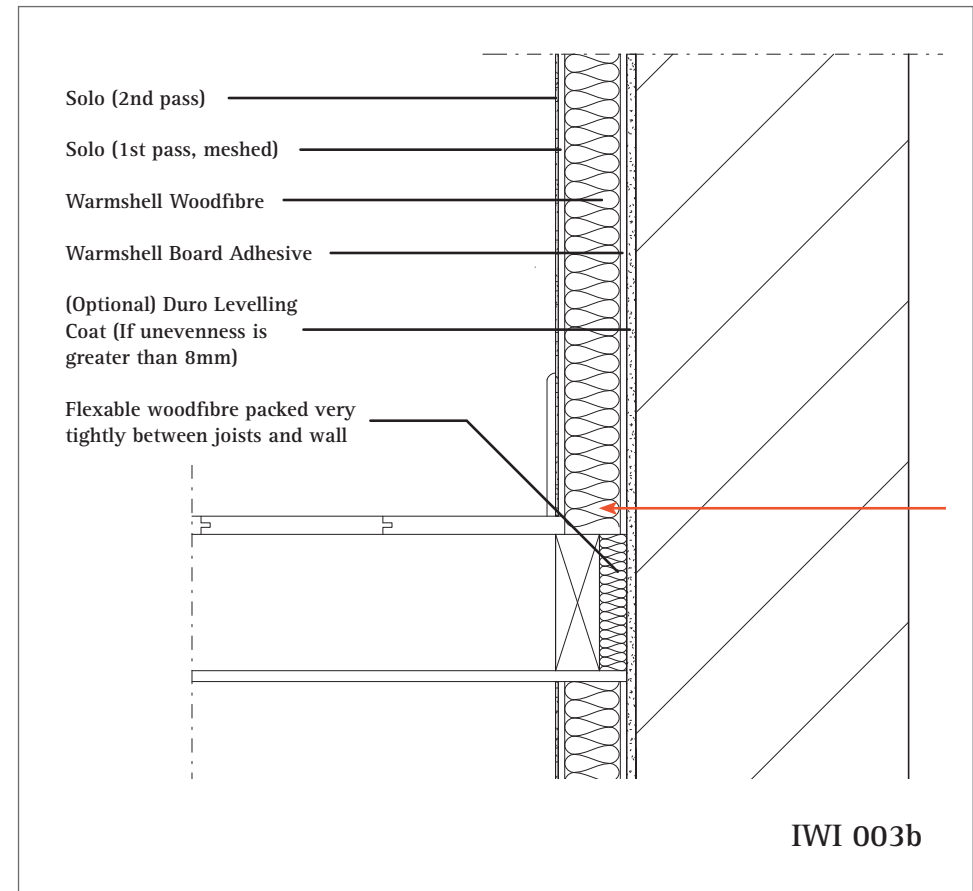
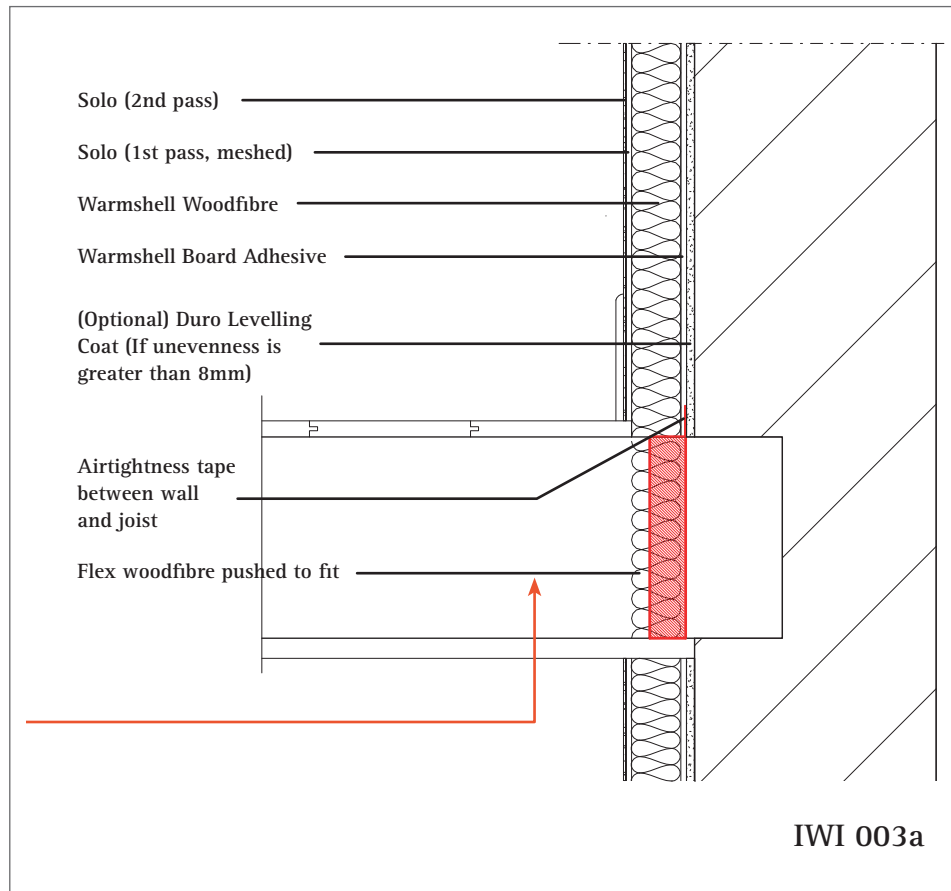


Duro



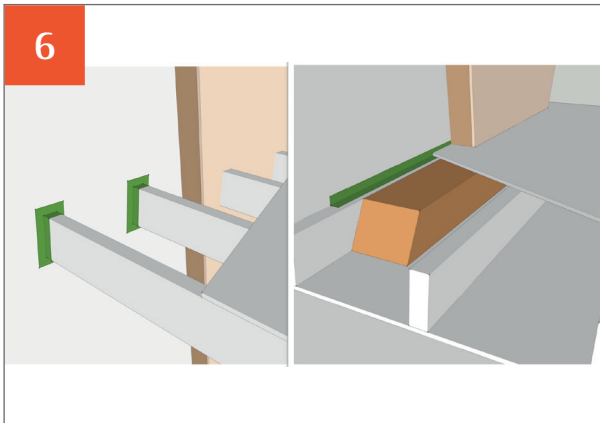
Ultra

Preparation



- Cut back floorboards to the depth of the Warmshell insulation.
- This also provides access to fit insulation in the intermediate floor zone, see Design Details IWI 003a / 003b

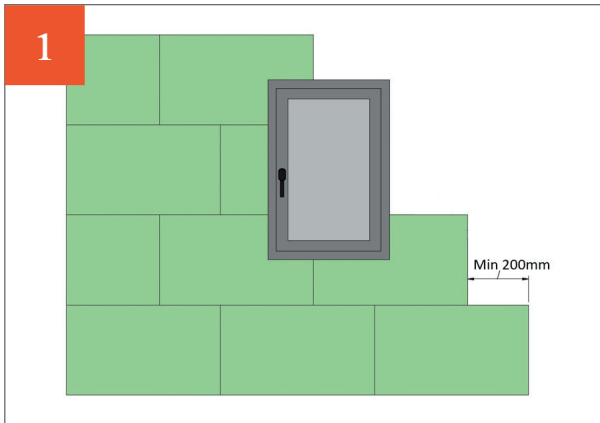
Preparation



- Intermediate floor insulation
 - Cut back floorboards
 - Seal gap between the joist and wall penetration either with:
 - Plaster dubbed into the gap
 - Airtightness tape
- Fit insulation between the joists

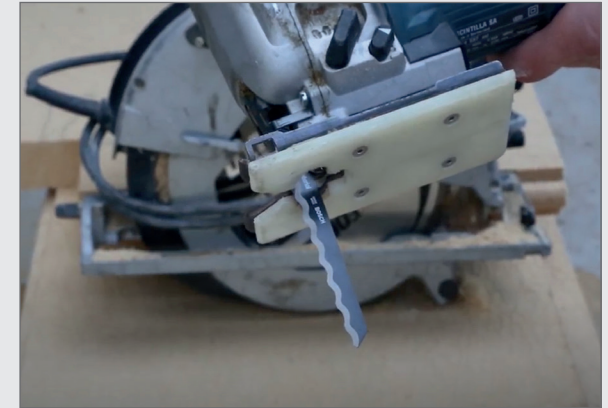
- **Airtightness!** This can be dealt with at the preparation stage or after the boards have been fitted. Check the specification carefully as to what stage it is to be applied.

Installation of Warmshell Insulation



- Consider board layout to ensure minimum wastage

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- Cutting Warmshell insulation boards. Hand Saw, Circular saw (with extract) or jig saw.

Note the wavy edge blade

<https://www.bosch-professional.com/gb/en/t-1013-awp-precision-for-soft-materials-jigsaw-blades-2868761-ocs-ac/>

Installation of Warmshell Insulation



- Apply Warmshell board adhesive with a toothed trowel over the FULL surface of the back of the insulation. NB do not dot and dab the insulation onto the



Warmshell Board
Adhesive

Installation of Warmshell Insulation



- Ensure that the board is pushed against the wall and slid into place, while the Warmshell Board Adhesive is still wet to eliminate all air gaps.



- Where the substrate is flat the Warmshell Board Adhesive will be sufficient to hold the board in place.



- Fit the boards in a 'brick bond' pattern with a minimum 200mm offset between courses.

Installation of Warmshell Insulation



- If the wall curves, then hammer fixings may be required as well as the Warmshell board adhesive. Fixings must be thermally broken (Ejot H1 Eco [L] and be fitted through the Warmshell Woodfibre Board and into the stone or brick. Ensure that the length of the fixing takes account of:
 1. The insulation thickness
 2. The Warmshell Board adhesive
 3. Any original plaster thickness and/or dubbing out coat
 4. Must have a minimum embedment into the **substrate of 35mm.**

- **Airtightness!** This can be dealt with at the preparation stage, or after the boards have been fitted. Check the specification carefully to see what stage it is to be applied.

Installation of Warmshell Insulation Board Details



- Reveals



- If the insulation board is too thick trim it down with a multitool after it is fitted.



Installation of Warmshell Insulation



- Window Sills

Installation of Warmshell Insulation



- Sockets

Installation of Warmshell Insulation

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Installation of Warmshell Insulation



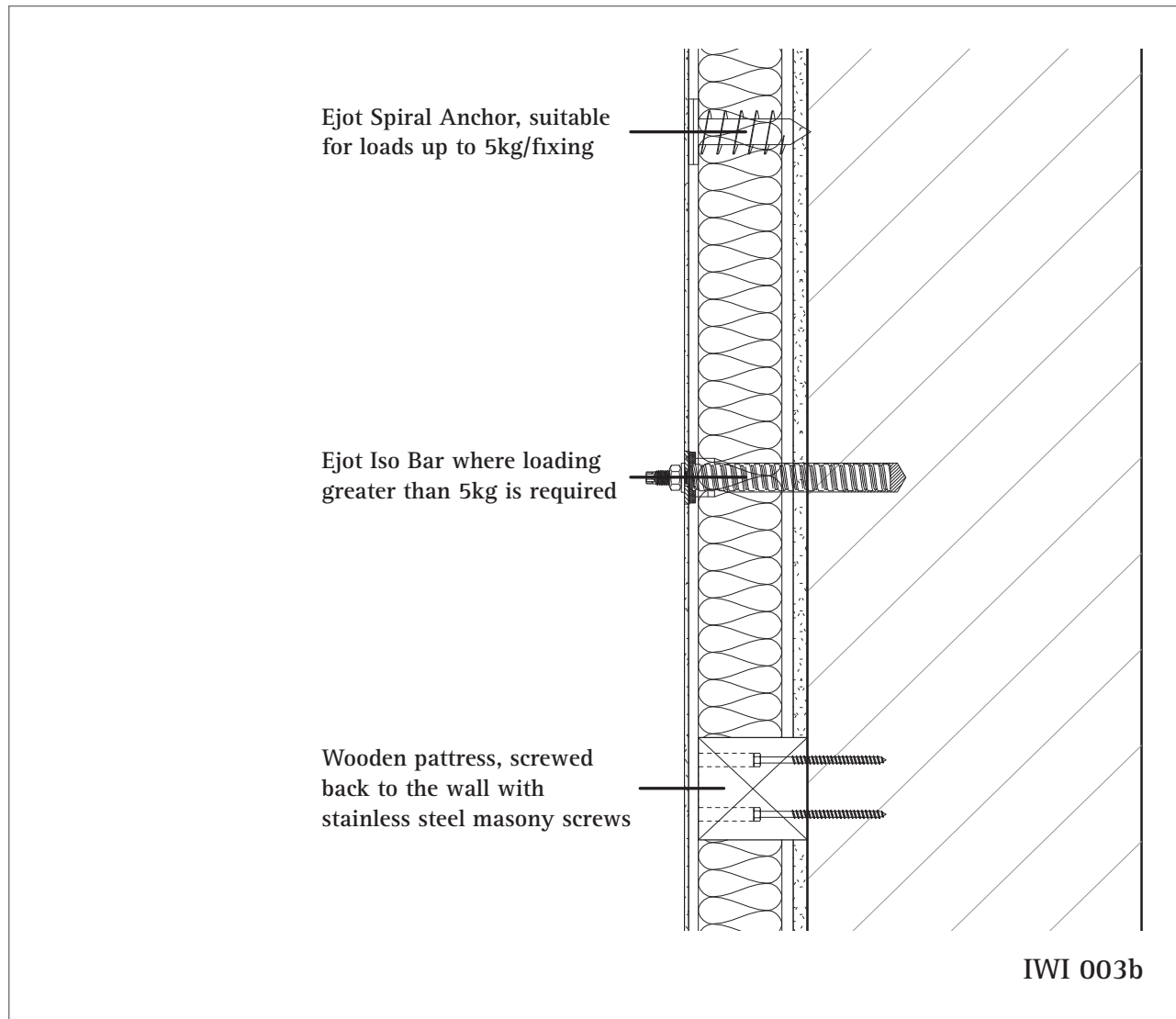
- Fixing Into Warmshell



Ejoyt Spiral Anchor

- Heavy load fixing points When a wooden patten is used ensure that the heads of the stainless steel screws are countersunk to a minimum depth of 15mm from the surface of the wooden block. The gap above the head should then be filled with a polystyrene plug or silicone.

Installation of Warmshell Insulation



Plastering



Solo Onecoat Lime Plaster

- See data sheet
- Mix with clean water only for 3 to 5 minutes.
- Add approximately. 5-7 litres of water to a 25kg sack.
- Do not use below 5°C or above 30°C.
- Do not re-work



- Use Solo to stick meshed beads to corners and reveals.

Plastering

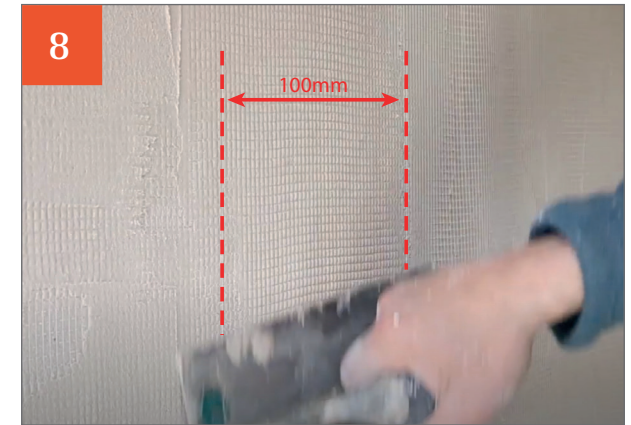


- Apply a 1st pass of Solo on to the dry boards
- Make sure the first pass is between 4 and 6mm thick

Plastering

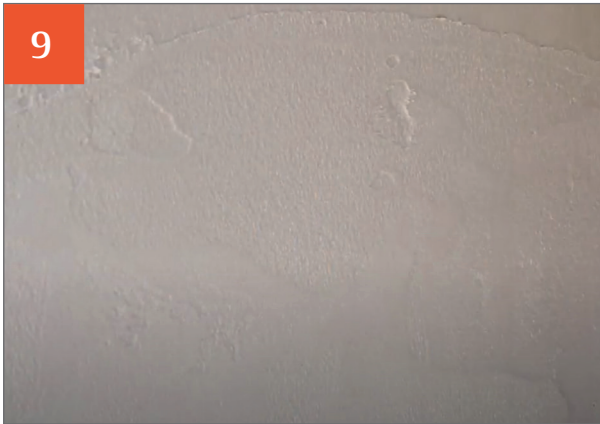


- Solo Mesh must be applied over the whole wall
- Lay the Solo mesh against the wall and press it into the surface of the first pass of Solo Onecoat Lime Plaster



- Overlap the mesh by 100mm
- Make sure there is Solo Plaster sandwiched between the overlapping meshes (this can be achieved by pressing the edge of the first mesh deeper into the plaster).
- Apply a 2nd Pass of Solo

Plastering



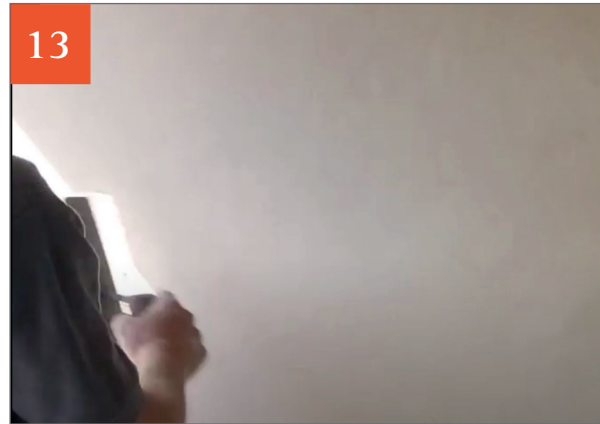
- Apply the plaster directly over the mesh. You must apply the second pass of plaster at 4 to 6mm thick
- Apply the 2nd pass of plaster within 24 hours of the first.
- You can rule the plaster flat with a straight edge or a derby.
 - The total depth of Solo Onecoat lime plaster once set will be 8-12mm
- Finishing the Solo Onecoat plaster



- After you have applied the 2nd pass, leave the plaster for at least 1½ hours until it starts to harden a little.
- Use a wet sponge float to give a light texture to the surface.



Plastering



- If a smoother surface is required, after you have used the sponge float leave the plaster for 5 minutes or more. Then smooth the surface with a flexible trowel or a steel trowel.
- You can use lots of other methods to finish Solo Onecoat Lime Plaster. Some popular ones are a sponge finish or a wood float finish.



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Opening: Mon - Fri 8:30am - 5:00pm

Tel: 01952 728611

Email: enquiries@lime-green.co.uk

Lime Green Products Ltd

Coates Kiln, Stretton Road

Much Wenlock

Shropshire TF13 6DG

Publication date: 10/2021

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