
BOWLAND SURVEYORS LTD.

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Further details regarding ground floor replacement.

For Mark Lincoln

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Reference: 2025-55 | Version 1.0

This report aims to provide further details in order to discharge condition 4 from listed building consent 3/2025/0411 with Ribble Valley Borough Council, as follows:

'Notwithstanding any details submitted a method statement and specification for the works to remove the existing internal flooring and installation of underfloor heating and replacement limecrete shall be submitted to and approved in writing by the Local Planning Authority, prior to the removal of internal flooring.

The development shall be implemented in strict accordance with the approved details.

Reason: In order that the Local Planning Authority may ensure that the method of removal and ground work safeguards the special architectural and historic interest of the listed building'.

METHODOLOGY & SPECIFICATION

Removal of the existing internal flooring (sand/ gravel/ earth - covered with bitumen).

- Manual excavation of the existing Internal floor to 350mm below existing level, using hand tools only.
- Disposal of bitumen-covered floor (surface layer 25mm approx) through a licensed and insured local waste disposal company that recycles 90% of waste collected.
- Disposal of the remaining earth/ sand within the boundaries of the property.
- Levelling and compacting of the ground.

Laying of replacement limecrete flooring

- Installation of initial geo textile membrane, 300mm overlaps at joins, with up-stand of 450mm (300mm plus recycled foam glass depth) on internal and external walls.
- Installation of recycled foam glass sub-base to a depth of 150mm, distributed evenly and compacted.
- Installation of a second layer of geo textile membrane across the top of the recycled foam glass adjoined to the upstand from the initial geo textile membrane.
- Installation of a 40mm wide cork insulation strip to a depth of 100mm to internal and external walls.
- Laying of 100mm limecrete slab, using 3:1 ratio of aggregate to limecrete binder by volume, with added reinforcement fibre.

Installation of underfloor heating

- Installation of an RCD fused spur to the thermostatic controller/programmer and the underfloor heating mat system by a qualified electrician
- Laying of underfloor heating 6mm insulation boards.
- Installation of ASTA BEAB, KEMA, and GS approved 3mm underfloor heating mat system, with advanced fluoropolymer internal and external insulation and an output rating of 200W/m².

Laying of the final floor covering

Stone paving or hardwood timber planks.

NOTES FROM THE SUPPLIER

See here - <https://www.lime.org.uk/systems/floor-insulation/floor-sublime.html>

Sublime® Insulated Limecrete Floor

Tŷ-Mawr's Sublime® floor system was designed with solid wall construction in mind, to mitigate the risks that are created when a damp proof membrane (DPM) is introduced to a building of traditional construction. The high-performing technical properties of the materials mean this system is equally appropriate for new builds and extensions. The sublime® system comprises of two primary layers; the [Glapor Recycled Foamed Glass Insulating Gravel](#) and the Limecrete slab. The minimum depth for the sublime® floor is 150mm for the [Glapor](#) (RFG) and 100mm for the Limecrete, if a higher level of insulation is required the depth of [Glapor](#) (RFG) can be increased.

The [Glapor](#) (RFG) is a high-performance gravel made from 100% recycled glass, it's exceptional qualities allow it to provide 3 key functions in the construction of a ground bearing floor, this simplifies the construction build up which can significantly save on labour.

- Damp protection: [Glapor](#) (RFG) is a non-capillary material which provides a wicking break that prevents moisture movement through capillary action (how moisture moves through soil). This means the [Glapor](#) is able to provide damp protection for the Limecrete without introducing the problems that typically occur when introducing a conventional damp proof membrane (DPM) into a building of solid wall construction without a modern damp proof course (DPC)
- Insulation: [Glapor](#) (RFG) is a closed-cell insulation that is formed from a large number of small air bubbles trapped in glass, this gives it a known thermal conductivity of 0.078W/mK which insulates the slab from the subsoil reducing heat loss.
- Structural hardcore: [Glapor](#) (RFG) is a structural hardcore with a tested compressive strength, which means it provides the necessary support for the Limecrete with no requirement for an additional Type1 / MOT subbase below.

The Limecrete slab is an alternative to the conventional concrete slab made from a blend of natural hydraulic lime (NHL) and recycled aggregate with screed fibres, it provides a load-spreading element over the Glapor to distribute loads applied to the floor as well as providing thermal mass.

See image below for further illustration from the supplier.



Tŷ-Mawr Sublime® Insulated Limecrete Floor

A solution for solid floor construction

Legend

- (A) Non-woven geotextile membrane
- (B) Glapor SG600: Recycled foamed glass
- (C) Geogrid (optional - see below)
- (D) Underfloor heating pipes (by others)
- (E) Limecrete slab
- (F) Cork perimeter insulation board

Technical Details

Glapor:

- Minimum Depth: 150mm
- Compaction rate: 30%

Limecrete:

- Minimum depth: 100mm
- Mix Proportions:
 - 3 parts aggregate
 - 1 part lime binder (NHL 5)
 - 900g fibres per tonne of aggregate

Cork perimeter insulation:

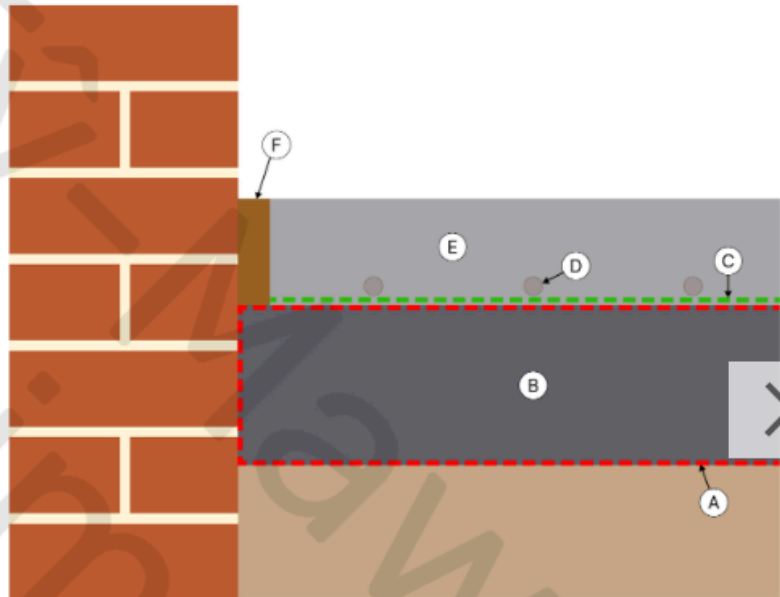
- Thermal bridge protection
- Expansion buffer
- 30mm thick

Geogrid:

- Used for fixing underfloor heating (UFH) pipes
- If UFH is not installed, the geogrid is not required

Geotextile

- Functions as a separation layer to keep Glapor clean from silt and dirt
- Must be non-woven geotextile



Thermal Performance

Ground floors lose the majority of heat through the external walls of a building, the longer the length of external wall for a given floor area, the greater the heat loss. The U-value calculation takes this into account so every floor has to be individually assessed, to calculate a floor U-value requires the following information:

- Floor area (square meters)
- Length of exposed perimeter (meters)
- Thickness of external walls (millimeters)

Complete our online calculation form to request a U-value calculation and quotation at www.lime.org.uk/calculators/limecrete

