THE LIMECRETE COMPANY

Breathing life into your floors

Our Technical Guide

To discuss your project
Call **0808 1685463**
or email **office@limecrete.co.uk**

Specifying Limecrete

When considering specifying a limecrete floor system, the following factors should be considered

U-value requirement

We can assist with U-values. For this, we require:

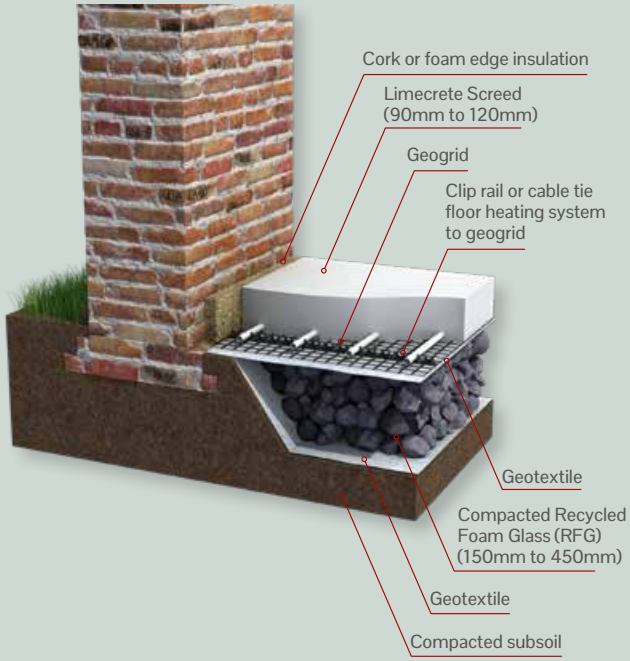
- the internal length of all external perimeter walls,
- the average thickness of the external walls
- the U-value target

Load bearing requirements

As each project is unique, we emphasise the importance of taking the advice of your structural engineer. As a general rule, limecrete is strong enough for flooring, stud walls, staircases and Aga range cookers for example.

Concrete strips or pads can be used for load-bearing walls, lifts, etc. If using a concrete strip, pad, etc, it is imperative to use an expansion joint between the concrete and the limecrete.

The Slabless Design - Shallow Foundation Approach

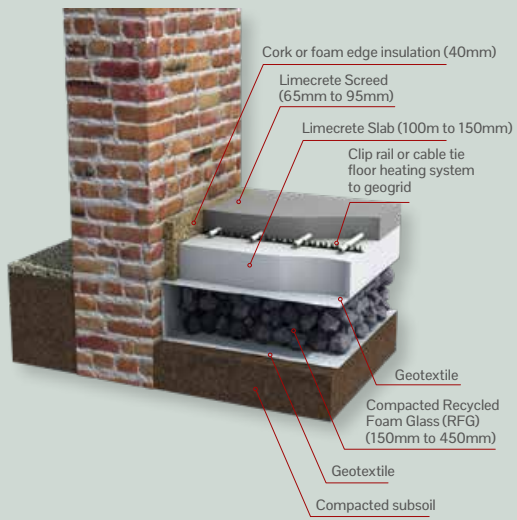


Depth restrictions

Where there is an issue with little or no foundations, we suggest using the shallow foundation design. Optimising the slabless floor system, depth can be achieved by stepping the excavation between 50mm and 450mm away from the wall at the point where insulation depth is required. The overall depth can then be achieved by digging at a 45-degree angle until the necessary depth is met.

Radon barrier

If required, this would need to be laid above the RFG and below the Geogrid if this has been advised. We do not supply or install radon barriers.



Sections of floor

We offer two types of limecrete floor – the slab and screed and the slabless floor. Both floor types can incorporate underfloor heating. Both floor systems start with a layer of geotextile membrane laid as a base on the prepared sub-base.

Slab and Screed

The slab and screed floor system is made up of three main layers:

- Recycled foam glass (RFG) – an insulative and non-capillary base of 150mm to 450mm+
- Limecrete slab – a mix of insulative pumice aggregate and lime to a depth of 100mm to 150mm
- Limecrete screed – usually between 50mm and 100mm with a minimum 70mm when incorporating UFH

The floor is then ready for your final finish, whether stone, carpet, wood or other breathable products.

Benefits of a slab and screed floor

The slab is particularly useful on large projects where a solid base is required for working on walls or ceilings. The final screed is usually laid once these works have been completed.

The slabless floor

A slabless floor is made of two main layers:

- Recycled foam glass (RFG) – an insulative and non-capillary base of 150mm to 450mm+
- Limecrete screed of 90mm – 120mm

The floor is then ready for your final finish, whether stone, carpet, wood or another breathable product.

Benefits of a slabless floor

- It reduces the overall cost as it consists only of two layers
- It constitutes a shallower floor – its reduced depths require less excavation
- A shorter time frame is needed to complete the work

> “From the initial enquiry phase, speaking with your technical team, to meeting your team of 5 yesterday, who worked efficiently and professionally installing the limecrete floor. A great job in all respects from start to finish. 10/10 advice, workmanship, timeliness, onsite care and attention, all very engaging and leaving the site clean and tidy.
> A pleasure to have had you all help us renovate our listed property.
>
> **David – Leicestershire.**

Preparing for our arrival

Before our arrival on site, the floor must have been excavated to the pre-determined, agreed depth, creating a compact and level base.

The final floor finish and screed depth should be clearly marked as a reference point from which our team can work. If there is to be more than one level, this should be prominently indicated in several places around the site.

The floor is then built up as per the following equation:

Depth of insulation + Depth of slab + Depth of bedding material + floor covering

If laying a stone finish, especially if using flagstones of varying thicknesses, the thickest needs to be measured, adding an allowance for bedding material.

If the depth is greater than planned but under approximately 10mm, we can correct this on arrival. However, we need to be notified in advance to ensure we bring sufficient insulation material. If the depth is over 10mm, there would be an additional charge for extra materials.

If there has been no site visit, we ask that a video be sent to us before our arrival, clearly showing the approach from the expected vehicle point through to the furthest floor area, along with details on any access concerns, steps, slopes, surface, parking restrictions, lorry access, etc. This ensures that we arrive with sufficient ramps, labour, etc., so the job runs to schedule.

Underfloor heating (UFH)

Where a floor incorporates UFH, we schedule two visits to the site. During the first visit, we install the membranes and RFG insulation and lay the geogrid layer to which the UFH pipework will be clipped.

As we are not involved with the installation of UFH, we will return to lay the final screed once the heating engineer has attached the pipework to the grid and pressure tested the system. Ideally, we like to return as soon as possible after system tests.

Commissioning UFH

We recommend commissioning the underfloor heating once the floor is at least 28 days old. It is also essential to consider the floor coverings being fitted and the time required to dry or set before commissioning the heating.

The UFH system must be commissioned slowly, starting with the lowest possible flow temperature of the water. The temperature should be increased slowly (ideally just by 1 or 2 degrees each couple of days) until the required temperature is reached.

Aftercare and timeline

Curing times

The limecrete floor must be left for 72 hours with no footfall. After 72 hours, light foot traffic is possible using general builders OSB boards. These boards should be lifted when not in use to allow for even drying of the floor. The floor must not be subject to loading at this juncture.

Cold weather

The limecrete floor should not be subject to freezing conditions. If the internal temperature of the room is likely to drop below 5 degrees Celsius, it would be prudent to cover the floor with insulation such as blankets, bubble wrap, etc. or introduce low ambient heat using oil-filled radiators to protect it from the potential harm of frost.

Warm weather

It is equally important to protect a newly laid limecrete floor from potential overdrying in direct sunlight or if exposed to strong winds. The room should not be overheated, and the use of dehumidifiers is generally not required or recommended. The slab may require light misting, a wet geotextile membrane, or a hessian placed over it to prevent it from drying too quickly during the first week in particularly warm weather.

Floor finishes

Flagstones or other stone/tile materials

These should not be laid until the slab material has started to carbonate, which we recommend is after 28 days. Tiles should be laid with lime based adhesive/mortar. When relaying stone floors, it is imperative to calculate floor depth from the thickest stone to ensure the final floor level is realised.

Timber Floors

It is important to ensure the limecrete moisture content does not exceed 2% -3% before laying timber flooring, usually, at least three months after the floor is installed. If a moisture meter is unavailable, this can be checked by fixing transparent plastic 1m² sheets over different areas of the floor for 24 hours. If there is no moisture on the sheet, the floor is ready for timber to be laid. Timber should be loosely laid and left to settle. The floor can be fixed to battens or a plastic support system.

Carpets

These can be laid using breathable underlays such as Jute, hessian or hemp to maintain breathability, but again, the limecrete floor must be completely dry.

> “
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> I’d like to tell you how pleased I was with the recent limecrete floor installation your company installed at this project. Not only is the final product a stand-out, but the whole experience in achieving that was exceptionally slick and of notably high quality too. The service both on and off site was of the best level, and I’d like to express my sincere thanks to the entire site team, including the delivery guys, and to you personally for your very close and capable support and service. Won’t hesitate to use you or recommend your company in the future.
>
> **Stonewood builders**