

Limecrete solutions

by **LOUISA YALLOP of The Limecrete Company Ltd**

Limecrete floors combine traditional wisdom with modern technology. Limecrete breathes with traditional building materials, respecting the original fabric of the building, and is used without a damp proof membrane. The insulation layer prevents moisture ingress while allowing damp to escape and also enables the building to be heated effectively for the comfort and health of the modern users. We recommend the system designed and tested by Ty-Mawr Lime which uses recycled foamed glass as the insulating and anti-capillary layer. This has the added benefit of being a recycled product rather than a quarried material, further improving the ecological credentials of limecrete. Lightweight crushed pumice is used as the aggregate for an even better insulation value, which is especially important in saving energy and money when underfloor heating is installed. We have never experienced a single problem with this system in its utilisation over the past four years.

To ensure consistent quality, we batch on site with our specially customised mixer which measures the lime (NHL5), aggregate and water by volume rather than weight. We don't include mild steel re-enforcing due to the

concern that it will corrode in a breathable floor. Stainless steel could be an option but an expensive one. At Merton Hall College, Cambridge the main contractors Morgan Ashurst were looking for greater strength, more quickly. Our response was to install a fibre applicator to the mixer. Our test cube results indicate that the glass fibres add 30% more strength without



Screed rails at St Thomas of Canterbury Church, Goring



Placing the limecrete slab at St Thomas of Canterbury Church, Goring

compromising the breathability and for an extra cost of only a few pounds per cubic meter. The slab can be lightly trafficked within a very short time. The strength of limecrete can also be affected by temperatures during the curing process. To successfully place limecrete in the winter months required another adaptation to our mixer. By heating the water before adding it to the mixture, we can lay warm limecrete, giving it a head start.

Limecrete is a flexible material to work with. Many problems turn out to have simple solutions. At High Down House the main contractor, St Blaise, needed a method of feeding electrical and mechanical services under the floor. In collaboration with the architects we designed and cast ductwork into the slab, simplifying the final floor finishes. We have encountered such large areas that we can't lay the entire floor in one day, such as at Easton Neston where we placed a single 325m² area for Peter Bennie Ltd. The solution is to cast a stop end dove tail joint. The following day the recess joint provides a key for the next pour, eliminating the need for steel dowel bars thus simplifying the job and reducing cost.

When mixing on site, with other trades also working, space can be an issue, as it was at Peper Harow Church. To free up working area around the church, Valley Builders arranged for us to be able to store materials and batch the limecrete and screed in a nearby field, delivering to the placing team using a tele-handler. The contractors and architects involved us at every stage from design to logistics. This sort of close cooperation ensures the job runs smoothly for all concerned. It is such a pleasure and an honour for our crew to work in beautiful, irreplaceable buildings and have a hand in conserving them for future generations. One especially nice perk for us is that when working at special, unique sites, you often meet people who share the same passion and vision for sustainable building and restoration! ☐

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