

HERITAGE

TRADITIONAL BUILDING PRODUCTS

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Plastering onto Lath Ceiling (High Calcium Lime)

Traditional timber lath were most commonly riven oak or chestnut. Riven laths have been split along the grain of the wood by hand and provide an irregular-shaped product with a coarse surface to give an additional key. Riven laths are also stronger and thus recommended for ceilings.

Laths varied in size from 1¼” to 1½” (31-37mm) in width and were about ¼” thick.

The main key for the lime plaster is formed by pushing/squeezing the plaster between the laths forming nibs on the other side. Nibs must protrude far enough through the lath to allow gravity to act causing them to slump and curl over on the lath.

Preparation

Any damaged lath should be repaired or replaced. Fixings should also be checked to ensure they are sound.

Laths should be soaked the day before application of plaster to allow them to absorb water and expand. The lath should then be sprayed again approx 1 hour before application. This wetting assists slow-drying of the plaster, giving a stronger key and also stops excess suction from the mortar.

Laths should be fixed parallel to each other and approximately 6-10mm apart. The ends of the laths must not overlap and should be set with a 3mm gap to allow for swelling when wet.

NB. Where laths cross supporting timbers/batons, it is important to remember that no nibs will be formed and so special steps must be taken when lathing over wide support surfaces.

Mix

Lime mortar will benefit from being premixed for at least a couple of weeks and then be 'knocked up' again prior to use. This will help to reduce shrinkage in the plaster.

Lime mortars used for plastering onto lath should be well haired to provide good tensile strength reinforcing the nibs and again reducing shrinkage.

Scratch Coat – 3:1 haired lime mortar (hair added at knocking up stage) @ 8-15mm

This coat should be pushed onto the lath ensuring good nibs are formed, leaving around 8mm on top of the lath. Mortar should be laid across the lath in a diagonal direction working from heel of trowel using a forward pushing technique. This coat should not be overtrowelled at this stage as this will

push too much mortar through the lath. Allow mortar to cure for 3-4 hours; surface will crust slightly and then the coat can be worked if required. At this stage, the coat should be scratched. Just the surface should be lightly scratched with a lath or comb scratcher, being careful not to run in the same direction as the laths themselves.

Leave the coat until it is green hard. At this stage the plaster is dry enough for any shrinkage to have taken place without being completely dry. It has hardened to such a degree that a slight indentation can be made by pressing with your thumb and this will usually take 4-5 days (this time will vary depending on the conditions at each site e.g. temperature, humidity etc.). If the scratch coat has gone very dry, then it must be well damped down before applying the floating coat.

Floating Coat – 3:1 lime mortar (can be haired if required) @ 8mm.

This coat is used to straighten the surface as required. Once applied (again to a thickness of 8mm), the floating coat should then be ruled off level and the same process should be followed as for the scratch coat. Once sufficiently cured, the floating coat should then be scoured /compacted using a wooden float. This process should be completed at least twice to further flatten and compact the plaster as it shrinks on drying. Further scouring may be necessary if there is continued shrinkage. This process is very important if shrinkage cracks are to be minimised.

When this scouring has been carried out, the surface should be keyed for the finish coat by brushing with a stiff churn brush or devil float.

Finish Coat - 1½ parts lime putty: 1part limestone sand (strength can be adjusted from 1:1 – 3:1) gypsum can also be added to increase the set and reduce shrinkage. Mist spray the floating coat and allow time for the water to be absorbed. The finish coat is then applied in 2 passes of 1.5mm applied in opposite directions. Once stiffened enough, it is scoured to fill in any misses (gauls). This coat can be left with a fine float finish or trowelled up smooth with a steel trowel. In certain conditions, slight crazing may be experienced after a few hours, in which case, the coat can be rubbed up again and trowelled out. Metastar or fine casting plaster can be added to this coat to ensure extra durability where knocks etc. are expected.

Decoration – The ideal finish for a lime plaster is a limewash. Natural breathable paints offer a good alternative. Normal emulsions and paints do not allow the plaster to breath and should be avoided. Please speak to us for further advice.

Further reading: Building with Lime ‘A Practical Intro’ - Homes & Wingate 2002.

