



TECHNICAL ADVICE

Internal Lime Putty Plastering

TAN7

Lime plastering to solid masonry walls can be carried out in one, two or three coats. Three-coat work is normally necessary on uneven masonry. Two-coat work is often sufficient on flat surfaces such as brickwork. One-coat work is coarse textured finish plaster reserved for medieval and early buildings. Lime plastering to laths is always three-coat work.

THREE COAT WORK

First Coat: When applied to solid walls, this is known as the 'scratch coat', and when applied to laths as the 'pricking-up coat'.

Second Coat: Known as the 'float coat' or 'straightening coat'. The object of this coat is to bring the surface to an even vertical or horizontal plane.

Third Coat: Known as the 'setting coat' or 'finishing coat'. The surface of this coat can be left slightly textured by using a wooden or sponge float or finished smooth with a steel trowel.

Lath work: Fibres are added to the pricking-up coat at a rate equivalent to 3.5kgs animal hair per tonne of plaster, and at an equivalent rate of 2.5kgs per tonne for the float coat.

Solid backgrounds: Fibres are added to both the scratch and float coats at a rate equivalent to 2.5kgs animal hair per tonne of plaster. Occasionally, fibres are added at a reduced rate or omitted in the float coat. Finish plasters rarely contains fibre.

Washed coarse-medium sand is used for base-coats and very fine washed quartz sand for the finish coat. The lime putty must have been matured for a minimum of six months.

MIXES

COAT	PARTS LIME	PARTS SAND	THICKNESS
1st	1	2.5	10mm (exc. nibs on laths)
2nd	1	2.5	8 to 10mm
3rd	1	1	2 to 3mm



FIRST COAT

Lath work: It is not recommended that existing laths are retained. Laths (approx 30 x 6mm) should be untreated riven/hand split oak or chestnut and fixed with stainless steel ringshank nails (30 x 2.36mm). Gaps between laths to be 6-8mm. Laths are 'block-staggered' every 600-750mm. Laths should be butted (not overlapped) and are available in various lengths to suit joist centres and avoid wastage. Laths should be soaked 24 hrs in advance, and lightly dampened, but not over-wetted, prior to application of the pricking-up coat. Using a laying-on trowel, the basecoat plaster is applied with firm pressure at 45° to lath direction. Approximately 50% of the plaster is 'pushed through' the gaps between laths as it is crucial that good 'nibs' are formed above/behind the laths. The pricking-up coat plaster should cover the laths by 10mm. When pricking up a ceiling, a forward push from the shoulder will usually be found to be more effective and less tiring than drawing the trowel towards the body. A rough, open textured plaster surface is required.

Note: lime plaster does not adhere well to laths - it 'hangs' from well-formed, reinforced nibs.

Once the plaster has 'steadied-up' (normally an hour or so), the surface is scratched using a sharpened lath-scratcher, forming an undercut lattice pattern at 45° to laths. Sufficient pressure should be applied to cut into the surface of the work but not enough to reach the laths. Lime putty plaster tends to shrink as it cures and dries. It is best to ignore any shrinkage cracks in the pricking-up coat as any attempt to tighten them risks damage to the newly formed nibs. The pricking-up coat must be regularly moistened by mist-spraying to aid carbonation.

Solid walls: Brickwork and masonry should be swept down with a stiff broom and dampened/wetted to control/reduce the suction (but not kill it altogether).

Dubbing out: Any holes or recesses should have been 'dubbed out' with basecoat plaster previously and allowed to dry. By throwing the dubbing-out plaster in with the 'toe' of the trowel a more effective bond is achieved than by spreading it. Powdery surfaces such as cob normally benefit from the application of a slurry-coat to help consolidate the surface prior to the application of the scratch coat. The scratch coat on a solid wall is simply spread over the wall with a laying-on trowel and scratched and regularly mist-sprayed as for lath work.

SECOND COAT

Lath work: The pricking-up coat must be allowed to cure and carbonate for 3 weeks before the float coat is applied. The pricking-up coat surface is re-wetted with water.

Solid walls: The scratch coat must be allowed to cure for about 2 weeks before the float coat is applied. The scratch coat surface is re-wetted with water.



For best quality work plaster 'dots' are applied and then plumbed and levelled to form 'screeds'. These screeds are then ruled to produce a perfectly flat plumb or level surface. The 'floating' rule helps to compact the material during the action of 'ruling-in'.

Once the work has 'firmed-up', the float coat is floated or 'scoured' several times to compact or consolidate the surface and minimise any shrinkage cracking with a cross-grained wood float. This should be done on the same day as application and normally again the next day. Water should be sprinkled on with a brush to assist the circular rubbing action of the float. A 'devil float' (wooden float with a nail projecting 2 or 3mm) is then passed over the surface to form a key for the finish coat. The float coat must also be periodically mist-sprayed to aid carbonation

THIRD (FINISH) COAT

Once the float coat is 'leather-hard', normally 2 to 3 days depending on temperature and humidity, the finish coat is applied circa 2-3mm thick.

The float coat is first dampened down with water to reduce the suction. Finish plaster is then applied, often in two 'wet-on-wet' coats with a laying-on trowel. When the work is firm enough it is well scoured 2 or 3 times, and lightly steel-trowelled using a minimum of water. Finally, a semi-dry brush is passed over the surface in opposite directions to slightly open the surface to receive paint.

TWO COAT WORK

Two coat work to solid backgrounds consists of one base-coat and one finish coat. It is normally reserved for flat substrates such as brickwork, and occasionally employed where no attempt to even-out the surface is required, and the plaster is to simply follow the contours of the wall.

The base-coat is applied in the same way as the scratch coat in three coat work, but is scoured and finished with a devil float as with the float coat.

Finish plaster is then applied as in three-coat work. It is appropriate in some situations for a less smooth plaster finish to be applied. A coarser texture can often be achieved by finishing fine finish plaster with a wood or sponge float, or a medium finish or coarse finish plaster can be supplied.



ONE COAT WORK

One-coat work is reserved for the repair or replacement of medieval plaster. It is usually applied c.10mm thick, and is typically a coarse plaster applied to follow the contours of the wall. It is left with an open texture by finishing with a wood or sponge float.

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