

External Natural Hydraulic Lime Renders Rendering onto Blockwork

General information

Background Preparation: follow good working practices, ensuring that the background is thoroughly clean. If removing vegetable growth using biocides check that these would not react with the render causing stains. If the background is saturated check for cracks or other causes of water penetration.

Suction Control: if necessary, apply sufficient water to reduce excessive suction. On many occasions this is done the day before, if necessary several times with the last damping just before application starts. Apply water starting at the top of the structure. On new build the water within the structure will reduce the amount of water necessary.

The top of the structure will dry out before the bottom. In base coats this means that scouring back and keying of the lower section might have to be done later than the upper section.
Always dampen down before applying subsequent coats

Setting Properties of NHL Mortars: The setting properties of NHL mortars require much lesser time for protection against adverse weather conditions than fat lime mortars. Precautions are however necessary and, if in doubt, Womersley's Limited will be able to advise. The following are the main recommendations.

Mortars made	Protect from frost, heavy rain, strong wind
with	or direct sun for a <u>minimum</u> of: -
NHL 5	48 hours
NHL 3.5	72 hours
NHL 2	96 hours

The preferred form of protection is damp hessian cover which, with re-damping, will also contribute to curing the mortar.

Plastic sheeting is effective against rain but should not be touching against fresh work. If too tight they will also provoke trapping of condensation. Plastic sheets, unless they are bubble wrap, will not protect against frost.

Frost protection should be applied even if frost is not occurring at the moment of finishing the day's work but is forecasted during the night or within a short time (see suggested protection periods above) from completion of work. Work should not start in frost conditions or with temperatures below 5⁰ C. Protection from drying winds or direct sun should be provided by using shading sheets or debris netting on scaffolding.

Three Coat Work

A Stipple or Spatterdash Coat (optional): can be used on strong, smooth and variable backgrounds. The normal thickness varies between 3 and 5 mm. This coat has to provide sufficient bonding to support the remaining coats of render. Use a strong mix (1 part of NHL5 to 1.5 parts well graded grit sand, 3-4 mm down). Successive coats must be weaker than this coat. The thickness of the first coat depends on the nature of the background, the overall thickness required on the render and the keying function. On smooth cement surfaces use an SBR addition and cast on a first cast (stipple) to ensure good keying. If insufficient key is provided by this coat it will be unable to cope with the stresses created by subsequent coats.

Undercoat/Scratch Coat: to be applied 3 days (or more, depending on atmospheric conditions) after completion of the stipple coat. Its strength should be marginally less than the first coat. Thickness can vary according to the overall thickness required but it is normally between 10 and 15 mm. It must not be applied over 20 mm thick. If this is required it should be done as an extra coat (two intermediate coats) each not above 20 mm. The thicker the intermediate coats the longer the waiting time before each application. Provide a criss-cross key, creating 25-35 mm diamonds, with a pointed wooden lath. On to concrete blocks and a stipple coat of 1:1.5 it is suggested that a mix of 1 part NHL5 to two parts wash river sand be used.

Rendering on Different Materials: Where different materials meet, and where there are other changes in the background material it is necessary to insert a metal mesh at the joint (at least 100 mm. each side). Consider the different suction characteristics of the background material. Curing is of extreme importance. 10% Prompt Natural Cement can be added to speed up the key between the lath and the plaster. Hair or Alkali Resisting Glass Fibre can be added to the first coat applied to metal lath to increase the bond and tensile strength.

Float Coat: to be applied 3-4 days (or more, depending on atmospheric conditions) after completion of the scratch coat. Its strength should be less than the previous coat, 1 part NHL 5 to 2.5 parts washed river sand. The thickness should be kept between 10 and 12 mm.

To achieve a uniform and level surface fix vertical timber battens on the wall at 2-2.5 m. interval. If the wall is uneven use spacers and check that battens are straight with a plumb level. Screed off excess mortar between battens with a wooden straightedge spanning between the battens. When battens are taken down, fill in strips with the same mortar. An alternative is to make running screeds 10 cm. wide at regular intervals using the battens as described above and applying the float coat in between them.

Scour back and key with a devil float after initial setting. Check for shrinkage during the first 2 days and, if necessary, lightly dampen the relevant area, scour back and re-key. Do not apply a finishing coat for 3-5 days, until undercoat is adequately firm and any small amounts of shrinkage are complete.

Finishing Coat: Apply a tight finishing coat of approx. 3mm use one part of NHL 5 to two parts of a shorborne yellow sand, for a sponge finish or another good quality well graded building sand. This can be applied in two thin coats immediately after each other. Stock up finishing sand in one go, especially if no colouring or paint finish is being used. The mortar should always be weaker than the preceding coats, consult Womersley's Limited if in doubt.

Note: in all renders, coats should be applied firmly to exclude air and any excessive moisture. Suction needs to be carefully controlled at all times.

Reworking: all NHL mortars can be re-worked due to the absence of cement, gypsum and excessive aluminates in the binder. Please consult Womersley's Limited.

If you have any questions or queries please do not hesitate to contact Womersley's Limited on Tel 01924 400651 or call in at our workshop.