



White Peak Natural Hydraulic Lime in Renders and Plasters

Lime renders and plasters have been successfully used in building throughout the world for many centuries. In recent years their main use in this application has been in renovation and repair of historic buildings, however the benefits of durability and breathability have led to a revival in the use of lime render and plasters in modern buildings.

Choosing the correct mix is important. In general the harder and denser the background the stronger the mix in contact with the substrate should be.

The strength of the mix will be affected by:

1. The type of sand

Sands for lime plasters and renders should be clean and free of clay and silt. Clay and silt in sands have a negative effect because they demand more water which reduces the strength and promotes shrinkage.

Soft sands with fine rounded grains make weaker mixes, more suitable for top coats. Sharp sands with angular particles make stronger mixes, more suitable for base coats.

2. The water content

Adding too much water will reduce the strength and leave an open structure, which will be prone to crumbling and frost damage.

Storage of Lime and Aggregate

It is important that you store the Natural Hydraulic lime in a clean and damp free environment, preferably off the ground, as exposure to moisture will weaken the strength of the NHL. Opened bags should be folded over at the end of the day and stored in a dry place. Opened bags will be suitable for use for up to three days and should then be discarded. The aggregate should be covered when left for periods of time to avoid contamination and the loss of fines due to rainfall.

Mixing

An ordinary drum mixer can be used on small projects or a paddle mixer for larger projects. Use a gauging box or bucket rather than a shovel for measuring the amounts of hydraulic lime and sand.

Add a small amount of water to the mixer first while it is not rotating and then add the hydraulic lime. Switch the

mixer on and make a wet slurry. Add the sand and more water and mix for 20 minutes. Do not cut back on the mixing time. Initially the mix will appear to be very dry but workability will improve during mixing.

After 20 minutes more water can be added if required to get the desired workability. Add with caution, as too much water will lead to shrinkage and reduction in the final strength.

Recommended Mix Proportions for Renders & Plasters

Application	Proportions by volume NHL 2 : Sand	Proportions by volume NHL 3.5 : Sand	Proportions by volume NHL 5 : Sand	Approx. Coverage per bag for a 10mm layer
External Render Basecoat to weak backing e.g. soft brick / porous stone	1:2	1:3	1:4	8 to 14m ²
External Render Basecoat to moderately strong backing e.g. medium brick or block		1:2	1:3	8 to 12m ²
External Render Basecoat to strong backing e.g. dense bricks, stone, concrete		1:2	1:2½	8 to 10m ²
External Render Topcoat	1:2	1:2½	1:4	8 to 14m ²
Internal Plaster Base Coat	1:2	1:2	1:3 or 4	8 to 10m ²
Internal Plaster Second Coat	1:2	1:2		8m ²
Internal Plaster Finishing Coat	1:1	1:1½		14 to 22m ² (at 3mm thickness)

Assessing the site

The following considerations should be given to factors which may affect the drying and curing of the newly applied render, such as:

1. Exposure to wind
2. Ambient temperature.
3. Aspect - wind and sun will cause rapid drying so it is often advisable to leave rendering of south facing walls to cloudy days.
4. Allow for easy access to water for damping down.

Surface Preparation

Always prepare the surface thoroughly before you commence work:

1. Remove loose material.
2. Prepare a good keying surface for the render.
3. Moisten the surface to prevent rapid suction.

Point 1 and 2 are standard steps for any work. For rendering or plastering with lime mortars, special attention needs to be paid to step 3 as some surfaces can have rapid suction and need adequate damping without saturating the masonry.

If applying more than one coat of render each coat should be no stronger or thicker than the previous one. The same general rule applies to plaster except that final plaster finish coats may be richer but are much thinner than previous coats.



Application

1. Fill any large holes to within 10mm of the wall surface. 2. Damp down the surface. On very porous walls repeat several times 1 - 2 hours before rendering.
3. Apply the first coat (scratch coat). Two 6mm skins are recommended in rapid succession. The first coat should be left to stiffen then floated over the whole area.
4. With 1 -2 hours the surface can be scratched over using a suitable comb.
5. Allow 24 hours for hardening in warm conditions or several days in cold conditions. Once the first coat has hardened it is possible to apply the second coat. A fine spray of water is recommended between the coats.
6. A third coat can be applied as required.
7. If a smooth final coat is required then fine sharp sand can be used in the mix and floated up as the surface stiffens. Use a wooden, sponge or metal float, depending on the finish required.
8. Use all made up render or plaster within 2 hours. 9. Do not use at temperature below 5°C due to risk of frost damage.

Protection and After Care

1. Keep the material moist for several days after application of the final coat to aid the hydraulic set and avoid excessive shrinkage. Water will drain down from the top, so pay particular attention to the upper section.

2. Cover the work with damp hessian or sheet in scaffolding around the work (if applicable) to protect from frost, wind and sun. Use light water spray if required to maintain moist condition.
3. Maintain air circulation between the hessian cover and the work.
4. Lift the covers on warm days and recover in later afternoon.

Prevention of Shrinkage

Cracks due to shrinkage can occur to some degree with all renders. Small cracks in the scratch coat are generally acceptable and will be filled by subsequent coats.

Shrinkage is caused by:

1. Too much water in the mix.
2. Excessive suction from the substrate. This can be avoided by damping down before applying the render.
3. Rapid drying. This can be avoided by protecting the work with sacking/hessian.

Safety Precautions

When White Peak Natural Hydraulic Lime is mixed with water, alkali is released. When working in places where dry Natural Hydraulic Lime becomes airborne, protection for the eyes, mouth and nose should be worn. When working with wet White Peak Natural Hydraulic Lime mortar, suitable protective clothing should be worn such as long sleeved shirts, full-length trousers, waterproof gloves and Wellington boots. Clothes contaminated with wet Natural Hydraulic Lime mortar should be removed and washed before further use. If White Peak Natural Hydraulic Lime enters the eye it should be immediately washed thoroughly with clean water and medical treatment should be sought without delay. White Peak Natural Hydraulic Lime mortar should be washed off the skin immediately.

Further safety information is available from the address below.

Availability

White Peak Natural Hydraulic Lime is supplied in 25Kg paper sacks. Orders of 1 tonne and over are stacked 40 bags per pallet and shrink wrapped.

White Peak Natural Hydraulic Lime is available in quantities over 1 tonne direct, or via Distributors - details of stockists are on our website www.tarmac.co.uk/buxtonlime

Quality

White Peak Natural Hydraulic Lime complies in all respects with BS EN 459-1:2001. It is manufactured under a quality assurance scheme complying with ISO9001: 2000

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