Re-Pointing Masonry Walls: Brick and Natural Stone with Pure Naturally Hydraulic Ironstone Lime Mortar

Choosing an appropriate strength re-pointing mortar.

The new mortar should be compatible with the old. Womersley's can supply premixed hot lime and different strength ready mixed Ironstone mortars. If you are unclear about the type of mortar that has been used to construct the building you are repointing then Womersley's can help. They can often give free advice by just looking at a sample out of the wall or can do a full analysis for a small charge. It is important not to introduce mortars which are too hard and containing potentially damaging elements or that can constitute an impermeable barrier obstructing vapour exchange over old lime mortars. Equally it is inappropriate to repoint with a weak lime mortar over a cement mortar in a rebuilt wall.

Resistance to salts

Soluble salts (sulphates, nitrates, chlorides) can be present in walls, they can be in the original mortar, in bricks and stones (often as a result of previous repair work), in ground water or from air bourn pollutants. All Ionic NHL ready mixed lime mortars are resistant to salts. They do not contain the reactive components such as high levels of aluminium, potassium and sodium oxides and gypsum. Existing salts will therefore be allowed to migrate out of the structure without affecting the soundness of the mortar and, in time, be washed off.

Protection and good working practice.

Current codes of practice for working with cement-gauged mortars are also relevant when working with lime mortars and cover most of the basic requirements for good working practice. For all mortar work, best practice requires proper curing and aftercare against the effects of drying winds, strong sunlight, rain and frost. Lime mortar may require slightly longer curing times but the methods and principles are the same.

Where scaffolding is in place, fine mesh debris netting securely fixed to the outside of the scaffold gives basic protection to the working area slowing down strong wind whilst allowing good natural light for the works. Securely fixed haps or polythene placed over plywood sheeting on to the top of the scaffold from the wall heads or just below the gutters will ensure that rain does not wash down the face of the walls. Scaffolding should always be erected in such a manner as to allow the highest point of the building to be protected. As regards external protection the work should be covered with hessian sheets, polythene or both. Polythene should never come in contact with the work. To avoid rapid drying and consequent high shrinkage, especially in hot or windy weather conditions keep all work damp by repeatedly applying a fine mist of clean potable water, if necessary several times a day, until the mortar has hardened.

Re-pointing.

It is essential that all pointing is carried out to match previously approved samples. The finish achieved on mortar joints can have a dramatic effect on the performance and visual appearance of the completed work an should be agreed before works start

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Preparation

Joints should be thoroughly cleaned from top to bottom after pre-wetting the wall. Use brushes, low pressure compressed air or wash out the joints with a hose. Remove all loose materials and dust. This is important as dust that is left in the joints will deplete the bond.

Application

The hot lime mixes need no more water adding but the hydraulic lime based ironstone mortars should be mixed for 10 minutes with water and be allowed to stand or mix for a further 10 minutes or more. Mortar should be plastic and workable but as stiff as possible. It should be pushed into the back of the joints in layers, avoiding large volumes of deep filling at all times. On rubble elevations, pinning stones should be used to fill wide and deep joints in the same style as the original build. This will reduce the volume of mortar required and will assist the process of setting and final full carbonation. A good yardstick is to keep the joint thickness to no more than a "finger" thick, if the joints are wider than this they should be pinned with compatible matching masonry. A "well filled" joint is close to flush with the surrounding masonry or to the weathered edge. Historically the common practice was to fully flush point and line out rubblework.

Finishing

To ensure good compaction and adhesion within the joint, the mortar can be tamped firmly back with a stiff bristle brush as it starts to firm up. The timing of this is critical. If it is carried out too soon after placing, fines in the mix will be drawn to the surface and will form a dense skin, inhibiting the proper curing of the mortar. Once the surface of the mortar is firm (usually the next day) lightly scraping the surface to expose the aggregate can improve the appearance of the mortar and make the joints less visible. This process should not be undertaken before the surface has stiffened or mortar will be smeared onto the face of the stone. Brickwork has a number of specific joint finishes too numerous to go into in this general guide, but the principles of timing the finishing of the joint still apply.

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