



# Limetec Hydraulic Lime Mortar

## Maintenance of lime mortar - repointing

### 1. Introduction

In general, lime mortar requires little or no maintenance. However there may be times when some re-pointing is necessary should the joints suffer any frost damage.

It should be appreciated that if frost damage does occur, this is not considered serious as it actually prevents frost damage to the actual brickwork.

For full detail of repointing, following the guidance set out in step 3.

### 2. Site Practice

To achieve optimum results and enable work to be carried out year round, it is important to give adequate protection to the mortar once it has been laid with the masonry. When compared to cement, lime mortars build up strength or achieve a set over a longer period of time and are susceptible to adverse weather conditions whilst the setting process is occurring.

**Mortar should not be used if the temperature is at 5°C and falling.** Attention must be given to the weather forecast before and for at least 24 hours after laying masonry.

**Work should not be carried out if the temperature reaches 30°C.** In warm weather it is advisable to damp down the brick/stone to avoid the substrate taking moisture from the mortar.

### Protection

Protection guards against the extremes of direct sunlight, driving rain, fluctuations in temperature and drying winds. It enables the mortar to build up strength during the early stages of set. The amount of protection that is needed is directly proportional to the prevailing weather conditions. The optimum condition for laying masonry is when the temperature is between 8°C and rising and 18°C and falling, and when the sky is overcast. During these conditions there is little or no need to give protection to the mortar. Work must not be undertaken in freezing conditions as this will inevitably lead to frost damage – see later sections.

### Wetting of masonry units

It is important to create a bond between the masonry and the mortar and to achieve this certain amount of suction is required. Masonry with high porosity should be pre-wetted in advance of being used, as too high a suction rate will “kill” the mortar.

**EXPLANATION:** if the suction is aggressive, moisture will be pulled from the mortar resulting in reduced workability and prevent easy adjustment of laid masonry together with a weakening of the bond.

Wetting may be necessary in most weather conditions if the masonry units are dry; however the amount of pre-wetting will vary accordingly and will range from dipping the unit into a bucket of water to spraying the units with a water hose. Care should be taken to ensure that the masonry is not overly wet, as this will completely kill the suction, cause the masonry to slip and the mortar to stain the face of the work. Water should be absorbed into the masonry and not run off of the face. Over wetting in cool conditions will also increase the setting time. Pre-wetting should not be necessary in the winter.

**EXPLANATION:** Hydraulic lime mortars achieve a set through two processes. The first set is achieved through a reaction with water; this is known as the hydraulic set. This occurs relatively quickly but can be influenced by weather conditions, especially temperature. The second set is achieved through a reaction called carbonation.

This is a much slower process and is produced by calcium hydroxide combining with carbon dioxide (in the atmosphere and in solution) to create calcium carbonate. This reaction is much slower and can take months to achieve, but builds on the strength of the mortar already achieved through the hydraulic set.

### 3. Preparation & Application

Joints must be raked out to a minimum depth of 2 x joint width, or until stable material is reached. Use appropriate hand tools (joint raker) Brush out any loose materials and dust from the open joint.

Damp down the stonework/ brickwork and the mortar joints, but ensure there is no excess water on the surface. The mortar mix needs to be as stiff as possible but workable.

- Mortar needs to be pushed firmly into the joint in layers.
- Allow the mortar to firm up (or wait until the surface of the mortar takes on a leathery texture).
- Compress the surface of the mortar using a hardwood stick approximately the same width of the joint (10mm) with a face cut at a 45° angle. This is also known as “rubbing up” as the stick is being pulled along the face of the joints. This action, as well as compressing/consolidating the mortar is also opening up the texture of the joint. If any holes appear in the joint fill them with mortar and repeat the process. A flat profile must be maintained on the surface of the stick otherwise the joint will become rounded (this step may be omitted if the work is very tidy).
- Using a churn brush or naturally bristled stiff brush, beat the surface of the joint flat on (do not drag as this may lead to staining of the brickwork). This will compress/consolidate the mortar and exposes the coarser aggregate. If holes appear in the mortar, fill them and repeat the process. Loose material should fall away from the brickwork.
- To finish the area off use a soft brush across the face of the whole wall to remove further loose material.

NOTE: If mortar gets onto the face of the brickwork/ stonework brush or beat it off when it is dry. Removal whilst the mortar is wet will spread staining. Stains can be removed using a mild brick acid however; the natural weathering process will remove most stains over the winter period.



### 4. Tools required

Few tools are needed for the “jointing up” process, but include; a stick (see later), phosphor bronze brush, a churn brush, and a naturally bristled or soft textured broom head/brush.

Outlined below are two processes used for producing a flush joint to brickwork. They differ little up to the point of exposing the aggregate.

### 5. Health and Safety

Refer to Health and Safety datasheet.