

Millar - Plastering, Plain and Decorative

There are three methods of slaking 'lump-lime' - the first by immersion; the second by sprinkling with water; and the third by allowing the lime to slake by absorbing the moisture of the atmosphere. Rich limes are capable of being slaked by immersion and kept in a plastic state. They gain in strength by being kept under cover or water. All rich limes may be slaked by mixing with a sufficient quantity of water, so as to reduce the whole **to a thick paste**. Lump lime should be first broken into small pieces, placed in layers of about 6 inches thick and uniformly sprinkled with water through a pipe, having a rose at one end...**and covered quickly with sand. It should be left in this state for at least 24 hours before being turned over and passed through a riddle [dry-slaking]**. The layer of sand retains the heat developed and enables the process of slaking to be carried out slowly through the mass...the quantity of water should be properly regulated, as if over-watered a **useless paste** is formed. If a sufficient quantity is not supplied, a dangerous powdering lime is produced. Slaking by **sprinkling and covering the lime lumps** is frequently done in a very imperfect and partial manner, and portions of the lime continue to slake long after the mortar has been used. Special care must be exercised, and sufficient time allowed for the lime to slake when this method is employed....

In most parts of England the lime for making coarse stuff [*for plastering*] is generally slaked by immersion, and is run into a pit, the sides of which are usually made up with boards, brickwork, or sand, the lime being put into a large tub containing water. When the lime is slaked, it is lifted out with a pail, and poured through a coarse sieve. It is sometimes made in a large oblong box, having a moveable or sliding grating at one end to allow the lime to run out, and also to prevent the sediment from passing through.

In preparing lime [*mortar - for Millar lime and mortar are interchangeable*] for plasterwork, the general practice in the north of England is to slake it for three weeks before using...**Now, while all this precaution is taken in regard to plastering, in making mortar for building, the lime is slaked and made up at once, and it is frequently used within a day or two. But this is not all. Limes which are unsuitable for plasterwork, known as hot limes, and which, when plasterers are obliged to use, must be slaked for a period of - not three weeks, but more - nearly three months before using, and are then not quite safe from blistering, are the limes mostly used for building purposes.**

MORTAR ...for plasterwork it is usually composed of slaked lime, mixed with sand and hair and is termed 'coarse stuff'...In Scotland the coarse stuff is generally obtained by slaking the lump lime... with a combination of water sprinkling and absorption. **The lime is placed in a ring of sand, and in the proportion of one of lime to three of sand, and water is then thrown on in sufficient quantities to slake the greater portion.** The whole is then covered up with the sand, and allowed to stand for a day; then turned over, and allowed to stand for another day; afterwards it is put through a riddle to free it from lumps, and allowed to stand for six weeks to further slake by absorption. It is next 'soured' - that is, mixed with hair ready for use. Sometimes when soured, it is made up in a large heap, and worked up again as required for use. This method makes a sound, reliable mortar. In some parts lime slaked as above is mixed up with an equal part of run lime. This latter method makes the coarse stuff 'fatter' and works freer....

Grinding is another process for making mortar or 'lime', and **if made with any kind of limestone is beneficial**. It thoroughly mixes the material, increases the adhesion, adds to the density, and prevents blistering. When there is a mortar mill, **either ground or lump lime can be used**, and the coarse stuff may be made in the proportion of 1 part lime and 3 parts sand....The process should not be continued more than thirty minutes. Both material and strength is economised if lump lime is slaked before being put [immediately?] into the mill....It should be borne in mind that a complete incorporation of the ingredients is essential **in the slaking and mixing for coarse stuff**, whether done by hand or machine.

...Smeaton found that well-beaten mortar set sooner and became harder than mortar made in the usual way...

...Lias lime should be mixed dry with sand, and damped down for seven or ten days to ensure slacking. It should not be used fresh for floating or rendering.

...Mortar made from Hydraulic Limes should be mixed as rapidly as is compatible with the thorough incorporation of the materials, and used as soon as practicable after mixing, because if put aside for any length of time *[or knocked up later] its setting properties will deteriorate.*

...proverb among Scotch masons: "when a hundred years have past and gane, then gude mortar turns into stane" ...

,,,many of our limes are comparatively poor in carbonate, and associated with silica, alumina, magnesia, and oxide of iron, which may either be partially combined in the natural state, or enter into combination with the lime during the process of calcination *[and perhaps during hot mixing, if same present in sands or other aggregates]*, **and these limes might be termed slightly hydraulic.**