Fat lime mortars

Application Guide

Description

Tŷ-Mawr Lime Mortars are made from a high calcium lime (also known as a fat /air/putty or non-hydraulic lime) blended with carefully selected aggregates. Lime mortars require exposure to Carbon Dioxide in the presence of moisture to harden. Preparation and protection are just as important as correct application.

Colour and texture

Old mortars can be seen in a wide range of colours and compositions across the country, they will vary from region to region as local sands, local sources of lime and pozzolans would traditionally have been used. It is the aggregate/sand that predominantly effects the colour and texture.

Mortar analysis and matching

There are several different types of mortar analysis commonly used depending on the level of information required, to help you match a mortar - please contact Tŷ-Mawr for further advice.

Choosing a mortar

It is vitally important to choose a mortar of an appropriate strength for the job that you are doing.

Application	Type of Lime	Suggested Mix Ratio by volume	Notes
Pointing/building stone/ brickwork	Fat lime mortar	Premixed or 3 Sand*: 1 Lime Putty	■ The exact ratio will depend on the sand/aggregate used. ■ The colour, texture and workability of the mortar is predominantly influenced by the selection of sand/aggregate. ■ The softer the stone/brick, the softer the mortar must be.
	NHL2 or NHL3.5	2.5 Sand*: 1 Hydraulic Lime	
	glaster®	Premixed	
Flag stone bedding	NHL3.5 or NHL5 glaster®	2.5 Sand*: 1 Hydraulic Lime Premixed	For smaller tiles, please contact us.
Paving, copings chimneys, parapets	NHL5 or NHLZ glaster®	2 Sand*: 1 Hydraulic Lime Premixed	Very exposed areas, high weathering applications.

*It is important to choose a sharp, well-graded, well washed sand.

Preparing the mortar

- do not add water - a premixed mortar when purchased may appear too dry. It must be 'knocked-up' (the process of chopping, beating and turning) which will release the water already present in the mix. Water should only be added CAUTIOUSLY if the mortar is still too dry AFTER 'knocking-up'. For small quantities, an ordinary drum mixer will be sufficient, if you are going to mix large quantities then a mortar mill is recommended (Tŷ-Mawr has several types to hire/purchase see www.lime.org.uk).
- keep the mortar stiff - mortar for pointing should be kept stiff and dry in order to compress it into the joint without smearing. Take care not to get mortar on the face of the brick/stonework. Mortar for laying/bedding work needs to be a little wetter but should still be kept as stiff as possible to avoid excessive shrinkage. The mortar needs to be just wet enough to be workable.

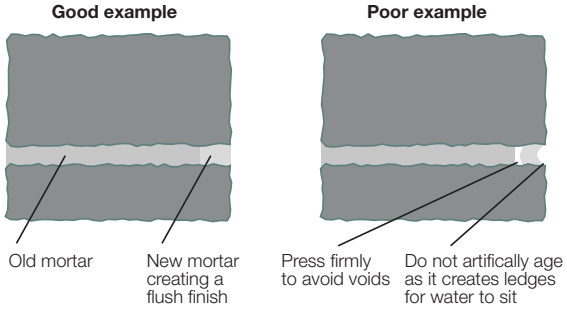
Pointing

Preparing the surface

- loose existing mortar must be raked out and dust removed, usually to a depth equal to twice the width of the joint. Sound mortars should be left.
- assess the moisture content of the background - for dry substrates, dampen all stones/bricks and adjoining surfaces by spraying with water or immersing in water, otherwise they will 'suck' the moisture out of the mortar before it sets, causing it to turn to dust. However, if the wall is already wet, do not add more water, in fact it may be necessary to encourage it to dry out first.

Application

- do not overwork mortar - pointing mortar should, initially, be pressed into the joint without any attempt to 'finish it'.
- large holes should be packed with gallets/pinnings - small pieces of stone or bricks, as large volumes of mortar will shrink.



Cross sections of good and bad pointing

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- bring out mortar joints in layers of up to 10 - 15mm thick to allow carbonation, using a pointing or finger trowel from a small plastic hawk.
- leave each coat until it is hard i.e. set, but not dried out - the mortar should be 'too hard to dent with a knuckle yet soft enough to mark with a thumbnail.'
- it should be left to 'stiffen up' for up to 24 hours (depending on the speed of drying). Only then can it be worked over to compress it (to overcome shrinkage) and to produce the required finish.
- brush when firm with a churn brush, to achieve desired finish.
- we do not advise the use of pump-action mortar guns.

Leave unfinished for approximately 24hrs, brush when firm.

Protection of the work

- gently spray the work in dry or windy conditions. If a mortar is drying too quickly, it will not carbonate and hence it will fail.
- protect external work with damp hessian or plastic sheeting to prevent rapid drying in hot or drying weather.
- different elevations may need different levels of protection.
- avoid the frost - before lime mortar has carbonated, it is particularly vulnerable to frost damage. External work should be avoided when the temperature is likely to drop below 5ºC.

(See winter weather warning on www.lime.co.uk)

- protection should be removed when the conditions are right to encourage carbonation.
- protect from rain - heavy rain can wash the lime out before the mortar has carbonated. It should be protected at least until carbonation has taken place.

Storage

- store airtight and frost-free.
- mortars will start to harden from the day they are made (but will not carbonate in a sealed bag). The older the mortar, the harder it will be to 'knock up' will take longer to mix. Therefore, use as soon as possible after purchase. Alternatively purchase the components and mix as required. Use within 4 weeks of purchase

After care

Your finished lime mortar will protect your building for years to come. We highly recommend that if you are intending to paint the wall, then it should be finished with a 'breathable' and preferably a natural paint, your choice will depend on the level of durability, required vapour control and desired aesthetic. Call 01874 611350 for advice or visit www.lime.org.uk.

Approximate coverage rates

Mortar - Building

1 tonne will lay 900 bricks in a 225mm thick wall.

(1 x 25 kg bag will lay 22 bricks in a 225mm thick wall.)

1 tonne will lay 4sqm of 450mm thick rubble stonework (varies depending on size of stone).

(1 x 25 kg bag will lay 0.1sqm of 450mm thick rubble stonework.)

Mortar - Pointing

1 tonne covers 100sqm brickwork.

1 x 25 kg bag covers 2.5sqm brickwork.

1 x 25 kg bag 45 linear metres @ 10mm x 25mm joints.

1 x 25 kg bag covers 30 linear metres @ 15mm x 25mm joints.

1 tonne covers 40sqm stonework (varies depending on size of stone and joints).

1 x 25 kg bag covers 1sqm.

See our quantity calculator on www.lime.org.uk for assistance with calculating the quantity as well as the type of materials you may require.

Health and Safety Information

WARNING

Skin Irritation 2 H315 Causes skin irritation.

STOT SE 3 H335 May cause respiratory problems.

DANGER

Eye Damage 1 H318 Causes serious eye damage.

Precautionary Statements

P102 Keep out of reach of children.
P280 Wear protective gloves, eye protection/face mask.
P305 + P351 + P310 If in eyes rinse cautiously with water for several minutes and immediately get medical assistance.
P352 + P352 If on skin, wash affected parts immediately with plenty of soap and water.

*For further information about the whole subject and illustrated diagrams of lime plastering and pointing techniques, see **The Lime Handbook** now available to order on www.lime.org.uk*

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