

Maintenance Matters!

Historic buildings

Repointing in Lime



Llywodraeth Cynulliad Cymru
Welsh Assembly Government

www.cymru.gov.uk

You will need the following tools and equipment:

protective clothing, goggles, gloves and dust mask (if using hydraulic lime),	<input type="checkbox"/>
cold chisel and lump hammer,	<input type="checkbox"/>
narrow implements, such as hoof pick and hacksaw blade,	<input type="checkbox"/>
clean bucket for measuring materials,	<input type="checkbox"/>
mixing board,	<input type="checkbox"/>
shovel,	<input type="checkbox"/>
hawk and trowel,	<input type="checkbox"/>
pointing iron,	<input type="checkbox"/>
stiff bristle brush,	<input type="checkbox"/>
pump action garden sprayer,	<input type="checkbox"/>
hessian or plastic.	<input type="checkbox"/>

Remove loose, crumbling or cracked mortar joints using a cold chisel and lump hammer to a depth of about 1 inch (25mm) or twice the width of the joint. Fine joints will need to be cleaned out with a narrow implement, such as a hoof pick or hacksaw blade. Clean the joint out well to leave a square edge at the back of the recess. This will help to provide the new mortar with a firm base to hold it in place. As a general principle that applies to all pointing, if mortar is difficult to rake out by hand it does not need to be replaced. The exception is where a hard cement-based mortar is causing erosion of the masonry or internal damp problems. The use of disc cutters should be avoided, as they can easily damage the edges of the stone or brick, increasing the depth of the joint.

Once the joints have been raked out, flush them out with water and repoint using a lime mortar that is slightly weaker than the stone or brick. Avoid repointing when temperatures are likely to drop to 41°F (5°C) or below, as the new mortar can be damaged by frost, even several weeks after it has been applied. The new mortar should match

the texture and colour of the original mortar before weathering, and contain washed, well-graded sharp sand.

When repointing, mortar should be packed tightly into the joints using a pointing iron and finished to the same depth and style as the original pointing. In many cases this will be flush or very slightly recessed behind the face of the stone or brick. Wide or deep joints should be packed with mortar and small stones, known as pinnings or gallettes. These help to force the mortar deep into the joint, whilst aiding the setting process by reducing the volume of mortar. Clean off any excess mortar and protect the new pointing to prevent it from drying out too rapidly or from being damaged by frost by wrapping the area in hessian sacking or plastic sheeting. Once the new pointing has achieved its preliminary set, tap the surface with a stiff bristle brush to tighten the mortar in the joints and expose the texture of the aggregate.

One interesting pointing technique that was developed during the early eighteenth century for brickwork is 'tuck' pointing. However, it is now rarely seen as it is time-consuming technique and builders frequently lack the experience and skills necessary to reproduce it. The basic lime mortar includes brick dust and must be as close a match to the colour of the brickwork as possible. The joints are filled flush and while the mortar is still damp, small grooves are cut into centre of each joint, giving a pattern of neat horizontal and vertical lines. These are then filled with lime putty, which is pressed against a rule to give a sharp edge. The finished effect gives the impression of high-quality rubbed brickwork with fine, white, clean joints.

In contrast, there is little historic precedent for the use of 'ribbon' pointing, which is so commonly seen nowadays in cement. In this, the joints stand proud of the wall face to become the dominant visual feature. It is both ugly and poor practice as the technique slows down the run off of rainwater, which can increase the amount of moisture held in the masonry. The cycle of freezing and thawing, and the movement of dissolved salts can cause rapid erosion, particularly in soft brick and stone.