

DIOCESE OF CHELMSFORD  
DIOCESAN ADVISORY COMMITTEE

REPORTING

GUIDELINES TO ASSIST PARISHES

JULY 2004

# REPOINTING

## SCOPE AND FACULTY CONSENT

- 1.1 This note is relevant to repointing of historic masonry or brick walls of whatever period. It also applies to new work.
- 1.2 Although it may seem simple, repointing is a highly skilled job. It requires a specification prepared by an architect and based on a careful examination of the masonry.
- 1.3 Parishes should note that **all but the very smallest areas of repointing will require faculty consent.** In recommending such consent to the Chancellor, the DAC will have regard to the advice in this note.

## MORTAR AND POINTING

- 2.1 Mortar is the material used in walls between brick or stone; in some cases it may act as little more than a packing, separating the bricks and stones and allowing the structure as a whole to flex; elsewhere it may stick the building blocks together, making them adhere one to another. Mortar joints also act as the pores of a brick or stone wall, allowing it to absorb and then release rainwater. Good mortars will act as an effective packing and allow flexibility, will only be weakly adhesive, and will look right for the building in which they are used.
- 2.2 Pointing is the external finish given to the mortar where it is visible: it contributes to the weathering and protection of the structure, and also aesthetically, often significantly affecting its appearance.
- 2.3 The original pointing of most old masonry and brickwork was probably not a separate operation but part of the mortaring of the joints. In the 17<sup>th</sup> and 18<sup>th</sup> centuries, it became common practice in quality work to cut the joints back during mortaring and to return, as a separate operation, with a new mortar mix for the pointing. This could include special treatments such as ‘penny’ or ‘tuck’ pointing. (see below, 7.3)

## **TRADITIONAL MORTARS**

- 3.1 In old stone walls of the 12<sup>th</sup> or 13<sup>th</sup> centuries, the mortar may be a little more than a slightly sandy earth (often a brick-earth i.e., a slightly sandy silt usually an orange brown in colour), to which a little lime has been added. Similar earths were often used to bond early brickwork in the 15<sup>th</sup> and 16<sup>th</sup> centuries. Such mortars have proved surprisingly durable so long as they are protected from direct action by the weather. Medieval rubble walls were originally protected by a thin layer of render.
- 3.2 In better quality and later mortars, a true sand aggregate, rather than earth, will have been used, though it will also contain finer particles, and there will be larger quantities of lime. The aggregate will also include small lumps of chalk, probably unburnt lime. 12<sup>th</sup> and 13<sup>th</sup> century mortars sometimes contain shell. Thus the aggregate used is variable both in size (it was not sieved) and in type of components. In old stone walls, colour changes can be seen as they were gradually raised in height reflecting the different sources used to obtain the earth or aggregate.
- 3.3 In the 18<sup>th</sup> and 19<sup>th</sup> centuries, as has already been mentioned, mortars were often prepared with care to achieve particular aesthetic effects. They were often lime rich – mixes were often in a ratio of about 2:1 rather than 3:1 – and tend to be whiter in colour than earlier ones. From about the middle of the 19<sup>th</sup> century in Essex, mortars often became grittier, probably reflecting the availability of sands from commercial pits. Portland cement was being produced from the mid 19<sup>th</sup> century but only became widely used in the 20<sup>th</sup> century.

## **THE DAMAGE DONE BY CEMENT**

- 4.1 Cement mortars, usually made in a 3:1 mix, are much harder than soft red bricks and many building stones. Where such mortars have been used, moisture and salts cannot move through the joints and instead are forced through the bricks or stone, causing their

surfaces to break up or spall. In the long term, the hard mortar will have the effect that the brick or stone will need replacing.

## IS REPOINTING NECESSARY?

- 5.1 Old mortars are impossible to reproduce today, either in terms of their colour or texture. Repointing usually involves raking out large quantities of the good quality original mortar to ensure a key. Repointed rubble walls are lighter and different in colour to what they were before. Repointing of brickwork alters the appearance of a building and rarely looks satisfactory, at least not until it has weathered down, which may take several years. For these reasons, repointing should not be undertaken until it is really necessary.
- 5.2 Repointing is only necessary if rainwater can find surfaces on which to lodge in masonry and stones are becoming loose; if brickwork joints are weathered back more than 15mm, or if existing pointing is too hard and so causing damage to the masonry. **Repointing for purely cosmetic reasons is never advisable.**
- 5.3 There is a temptation, when some repointing is necessary, to think in terms of 'getting it all done whilst we are about it'. This approach should be avoided. Sound pointing should not be disturbed just to 'tidy up' a wall.
- 5.4 Often relatively modern cement pointing is thin and can be pulled away in strips, leaving the old mortar intact so that the wall may not need repointing. However, if set deeply in the joints, removal of cement mortar may be damaging to the materials around, so that it becomes necessary to evaluate this damage against the damage caused if the cement is left in place.
- 5.5 It needs to be recognised that repointing can significantly change the appearance of a building.

## **REPOINTING MORTARS**

- 6.1 The mortar used for repointing should be porous and no harder than what it is bonding. In old buildings, this means using a lime mortar. Even if the wall is made of a hard material such as flint, cement repointing will eventually crack, allowing water to penetrate behind it into the wall core where it will wash away the old mortar creating voids. Hydraulic limes, which have a more rapid 'set' than lime putty, are currently popular, but care needs to be exercised with these as they can go off as hard as cement. Only the weakest grades should be used (preferably NHL2). Alternatively, lime putty mortars can be given greater 'set' through the use of pozzolanic additives such as brick dust. When preparing the mortar, the minimum amount of water should be used, sufficient only to ensure a cohesive and workable mix, so that the inevitable shrinkage is minimised.
- 6.2 Repointing mortars should be chosen from a series of sample panels made up to match the colour and texture of the existing mortar in the wall. These qualities can be reproduced by using sands of varying size and colour, and also additives such as brick dust. The repointing mortar should not be so hard that it cannot be scratched with the fingernail.

## **REPOINTING FINISHES**

- 7.1 Repointing should replicate the profile of the original, where this can be ascertained. In general, it should always be either flush with the face of the masonry or slightly set back from it.
- 7.2 In repointing rubble walls, the mortar is usually brought up almost flush with the stones and then brushed back to expose the aggregate. Often the effect is to produce large areas of mortar in comparison to the exposed stonework, giving the wall an unattractive appearance. This can be reduced by adding small stones or pebbles to break up the extent of the repointing mortar.

7.3 A variety of pointing finishes have been used in the past for historic brickwork, such as scribed or penny-struck (with a line scored down the middle of the joint), or tuck (a bead of lime set in a mortar coloured to match the bricks, to give the impression of very precise work). Old brickwork should be examined for evidence of such finishes, and where there is evidence of them, they should be carefully reproduced.

7.4 **‘Struck’, ‘weather-struck’, ‘bucket-handle’ ‘strap’ or ‘ribbon’ joints must not be used in historic masonry or brickwork.** In general, they are not traditional and are visually unsatisfactory, tending to dominate the appearance of the wall surface (see illustration of varieties of period joint finishes).

## **PREPARATION**

8.1 The existing joints must be carefully raked out, cleaned of dust and residual loose mortar, brushed clean and flushed out with clean water, but not pressure hosed or saturated. Joints should be wetted before pointing starts. A pointing iron or wooden spatula should be used rather than a steel trowel, and the mortar pushed firmly into the joint.

8.2 Power tools must never be used to rake out joints in old masonry or brickwork.

## **CARE OF WORK IN PROGRESS**

9.1 Lime is adversely affected by extremes of temperature, which can cause the work to fail. The work should therefore be postponed in very cold or very hot weather. If delay is not possible, new pointing should be protected with sacking or tarpaulins suspended over the work. In hot weather, the sacking should be kept damp to avoid drying out. If a sudden frost is anticipated, the covering should be sufficient to insulate against the mortar freezing.

**VARIETIES OF PERIOD JOINT FINISHES**

## **POLICY**

1. Repointing should be carried out according to an architect's specification based on a careful assessment of the historic fabric.
2. All but the very smallest areas of repointing will require faculty consent.
3. Repointing should never be carried out for purely cosmetic reasons.
4. Repointing types listed in 7.4 should never be used.
5. New mortar should be no harder than the original, and should be a good match for it in terms of colour and texture. Specifications will normally be recommended subject to a condition requiring approval of a sample panel of repointing.
6. Repointing should never be carried out in unsuitable weather conditions. (i.e. during winter conditions or when there are extremes of temperature.

**N. B. The attention of the contractor should be brought to this guidance.**



