

5.2 REPAIR PROCEDURES

INTRODUCTION

Repair is probably the aspect of flat roofing which calls for the greatest roofing skills. Unfortunately, a large number of roofs are completely re-covered when skilled repair would have proved entirely satisfactory.

Once the faults in a roof are traced, a decision must be made on the extent of the repair. The specification of repair must take into account the form of failure which caused the leakage, and the extent of any movement.

BUILT-UP ROOFING

Polyester base or woven glass base torch-on materials are most often used for local repair provided that the naked flame of the torch does not constitute a fire risk. Torch-on felts save the time and cost of setting up a boiler to heat bitumen. Hot bonding bitumen would only be used if a decision had been taken to re-cover a substantial area, and even then there are many advantages in adopting torch-on materials for the repair.

Good quality torch applied polyester based material 4mm thick is recommended for repairs. This is suitable in a single layer and should extend at least 100mm either side of the split or damage which is being repaired.

Splits normally only occur on old roofs which do not include polyester base roofing. Dependable repairs are still possible, however, provided the original material has a sound surface and is free of water absorption. The old fibre or asbestos felts on a badly drained roof are unlikely to take a permanent repair, and re-covering the roof with a new overlay may need to be considered.

The old glass base specifications, or well drained fibre and asbestos felts will normally accept a repair successfully.

When a split is found along the joint line of an insulation board or deck unit, the repair should cover the entire line of the joint on which the split has occurred, to make sure that no further trouble arises on that obvious line of weakness. Small patches which cover only the visible split are seldom effective in the long term, as the split is likely to continue along the unrepaired sections. A small patch will, however, be appropriate on an area which has been damaged by a severe knock, and there is no question of splitting caused by movement of the insulation or deck.

After repair, it is essential that any protective surfacing such as stone chippings is replaced to provide protection to the repair and to the existing membrane in that area.

When repairing mineral surfaced roofing, great care must be taken to dry the surface. Primer should be applied if large areas of repair are to be carried out. Torch-on materials must be applied with plenty of heat to ensure a free flow of bitumen to fill the spaces between the mineral granules and form a good bond, even if this detracts from the appearance of the finished work.

ASPHALT

Asphalt has the advantage that damaged or cracked sections can be cut away completely and restored with new asphalt which is fused to the old by poulticing.

Asphalt should never be cut in the cold condition by hammer and chisel, the danger of causing cracks is far too great. The line of asphalt to be cut should be warmed by poulticing with hot asphalt which is placed on top of the asphalt to be cut, and left in position until the old asphalt is thoroughly warmed through to remove all brittleness. The asphalt may then be cut with a trowel or with the gentle use of a hammer and chisel if necessary.

When the old asphalt is removed, the new asphalt can be applied and made good with poulticing as for normal bay joints in the traditional way.

An alternative method of removing the asphalt is by use of a powered disc cutter. The cut can be made on cold asphalt provided reasonable care is taken. Replacement with new asphalt is again with joints made good by poulticing.

If impact, movement or shrinkage has caused widespread damage along a skirting, it is perfectly in order to remove the skirting and replace with a new skirting fused to the old horizontal asphalt.

If it is not practical to heat new asphalt to carry out urgent repairs on site, a temporary repair can be carried out with polyester base torch applied roofing, and permanent asphalt repairs can be completed at a later stage.

It is extremely difficult to cut and poultice paving grade asphalt due to the hardness of the material and the difficulty of softening it. Paving is normally cut with a disc cutter and made good with roofing grade. The narrow widths of roofing grade will perform well, having more elasticity than paving, and will normally bond well to the paving. Whilst gas torches should never be used to soften asphalt, due to the risk of harming the asphalt with intense heat, a good asphalt spreader will sometimes use gentle heat from a torch to freshen the edge of paving grade, before making good with roofing grade. Naked flames should not be allowed to contact the asphalt. Hot air gas torches are useful for this purpose.

Alternatively, special proprietary bituminous strips are available which are placed against the cut edge of the paving. The new paving is installed against the strip, with no poulticing. The bitumen strip melts with the heat of the new asphalt, and forms a powerful adhesive joint between the new asphalt and the old.

RECORDS

Finally, a record should be kept of the date and location of the repair and the cause of failure. This will maintain a systematic approach to the maintenance of the roof and be a helpful guide in the event of future problems.

Occasions will arise when leakage cannot be traced and it is thought best to re-cover the entire suspect area. There are times when this is the only solution, but it is better to pursue a systematic investigation to determine the exact cause of the leakage if this is at all possible.