DOCUMENTATION AND PREPARATION

Full documentation should be prepared as described. There should be a full exchange of information before the work begins on site.

Any queries should be resolved before the work begins. Clear instruction on all aspects of the work involved should be given to personnel.

Before work begins all necessary scaffolding should be in position together with sufficient hoisting facilities and measures appropriate for the protection of personnel and the public. It is particularly important that roofs be provided with safety rails and all openings adequately protected.

The deck should be in an adequate condition to receive the mastic asphalt and all necessary builder's work should have been completed.

Only sufficient materials for the day's requirements should be taken out of store and placed convenient to the area being worked, they should only be unwrapped immediately prior to use and all wrapping materials should be disposed of carefully.

Equipment should be sited as close as is practicable to the area being worked.

RECEIVING AND CHECKING MATERIALS

Roofing materials should be checked upon arrival on site to ensure that they:

a) Are correctly marked and/or, where applicable, are in the manufacturer's original wrappers
b) Conform to the specification
c) Are sufficient for the work.

Goods that do not meet requirements should be removed from site.

Workmanship

REMELTING

Strict temperature control should be maintained throughout the remelting process. Generally, the temperature of the mastic asphalt should not exceed 230 degrees Centigrade.

Remelting should be carried out in mechanically agitated mixers, and cauldrons should only be used in exceptional circumstances, governed by site conditions and the areas of mastic asphalt to be laid.

TRANSPORT OF MOLTEN MATERIAL

When the material is sufficiently molten to be workable, it should be carried in buckets, wheelbarrows or heated dumpers to the point of laying. To prevent the molten material from sticking to the buckets, wheelbarrows, etc. they may be sprinkled inside with a minimum quantity of inorganic dust such as limestone dust. For acid resisting mastic asphalt a silica or similar acid resisting dust should be used.

SETTING OUT AND PLANNING THE WORK

The design of the application and the number of operatives engaged determine, at the discretion of the spreader, the setting out and the size of the bays. The dimensions of each bay should be such that easy control by the spreaders is ensured during the process of laying and rubbing. Mitred bays may be laid dependent upon the nature of any falls provided.

The whole of the structure should be rigid. In a timber substrate, the construction should minimise the effects of shrinkage, warping or displacement or relative movement of timber. Care should be taken to guard against any conditions which might allow decay, partly through the moisture already in timber or resulting from the ingress of water from other parts of the structure or from abnormal condensation.

Immediately after all the work on preliminary activities has been completed, installation of the mastic asphalt application will proceed to project specification.

LAYING VAPOUR CONTROL LAYERS

Whenever a vapour control layer is specified the spreader should ensure its integrity, any damage being made good before the insulation boards are applied.

Particular care should be taken at all detail work to ensure the insulation is completely enclosed and protected against water vapour from below.

LAYING THERMAL INSULATION BOARDS

WARM ROOF CONSTRUCTION

Boards should be fully bedded to the vapour control layer in hot bitumen in a brick bond pattern and with edges firmly pushed together in accordance with the board manufacturer's instructions.

The thermal insulation should be laid with a margin between the edges of the boards and all skirtings and abutments. The margin should be subsequently filled, prior to laying the first coat of horizontal mastic asphalt.

INVERTED ROOF CONSTRUCTION

Thermal insulation boards should be loose laid in a brick bond pattern with edges pushed firmly together in accordance with the board manufacturer's instructions on a suitable non-woven polyester isolating membrane.

LAYING THE SEPARATING MEMBRANE

HORIZONTAL WORK

On all flat roofs a separating membrane should be loose laid with not less than 50mm lapped joints beneath the mastic asphalt as a partial separator and to obviate blistering.

SLOPING OR VERTICAL LIGHTWEIGHT CONCRETE OR TIMBER

A sheathing felt should be used in conjunction with expanded metal lathing mechanically fixed at not greater than 150mm centres in all directions.

LAYING THE MASTIC ASPHALT ROOFING

Due to the nature of mastic asphalt, the nominal thicknesses given are indicative rather than precise. Any irregularities in the horizontal substrate will be reflected in the final surface with accompanying inconsistencies of thickness.

HORIZONTAL WORK

Mastic asphalt roofing should be laid in bays. The number and thickness of coats will depend on the purpose and use of the application.

Each coat of each bay should be spread evenly and uniformly by means of a float, to the recommended thickness, onto the previously prepared surface, the separating membrane or the preceding coat. Timber or metal gauges should be used in order to ensure accuracy.

Each coat of mastic asphalt roofing should be followed by any succeeding coat as soon as is practical, since exposure to contamination, for example, by dust or dirt, might impair adhesion and cause blistering.

If 'blowing' occurs, the bubbles should be stabbed and the affected area carefully made good while the mastic asphalt is still hot.

JUNCTIONS

Special care should be taken in laying mastic asphalt to form an efficient junction with the edge of a bay already laid. The hot mastic asphalt is taken over the edge of the existing bay and allowed to remain for a sufficient period of time to ensure complete fusion between the two bays. When the edge of the mastic asphalt bay is contaminated it should be cleaned by a temporary application of hot mastic asphalt.

Care should be taken to arrange that the junction between the two adjacent bays of a coat of mastic asphalt should not be less than 75mm from a corresponding junction in a preceding coat.

Where bays of mastic asphalt have been left open due to phasing of the contract, or for other reasons, the edges of previously laid bays should be warmed and cleaned by the application of hot mastic asphalt before the joint with the new material is made.

This procedure should also be adopted at junctions between vertical and horizontal surfaces.

SKIRTINGS

Skirtings should be executed in not less than two coats, particular care being taken to ensure proper adhesion of the first coat to the base. The first coat should be applied with a steel trowel or a small wooden float, with the second, and any specified subsequent coats, being applied with a wooden float.

ANGLE FILLETS

At the internal intersection of two planes, and after the mastic asphalt has been laid to each face, the final coat of mastic asphalt should be warmed and cleaned by the temporary application of hot mastic asphalt. A solid angle fillet of mastic asphalt should be formed in two coats with a face of not less than 40mm.

EXTERNAL ANGLES

Special care should be taken that the full thickness of mastic asphalt is maintained at all external angles formed by intersecting planes, whether horizontal or vertical.

SURFACE FINISHES

The horizontal surface of the mastic asphalt roofing should be sand rubbed.

Whilst the mastic asphalt is still warm, horizontal surfaces should be well rubbed with a wooden float, using clean, sharp sand. Special attention should be given to the junction between bays. All surplus material should be removed after rubbing is completed.

Maintenance and repair

GENERAL

Mastic asphalt roofing which has been designed and installed in accordance with the recommendations of this technical guide and the relevant British Standards can be expected to provide trouble-free service provided it is properly maintained.

Maintenance inspections should be carried out regularly by persons knowledgeable in mastic asphalt work.

Mastic asphalt roofs should be inspected annually, preferably in the autumn, to clear leaves, debris and dirt, which may prevent proper drainage or cause deterioration, and to identify at an early stage any signs of failure. Where the roof is in an area of high dust or pollution, or in close proximity to trees, more frequent inspections may be necessary.

Inspection should be carried out both internally and externally. Particular attention should be given externally to roof covering abutments, joints, gutters and outlets and internally to corners, abutments and penetrations. Observations by occupants of the building should be noted.

CHECKLIST FOR ROOFS

During the course of regular maintenance inspections the whole of the roof should be systematically checked and a note made of any items requiring attention. The following checklist should be used:

a) Surface finish and solar reflectors. Check that surface chippings are evenly distributed and unaffected by wind scour and that ballast has not been displaced. Note any cracked or damaged tiles or slabs. Where a reflective paint has been used, assess the necessity for renewal, taking into account the roof's age and formation of the roof, ie. the presence and type of insulation etc.

b) Skirtings, kerbs and turndowns. Check that upstands are intact and fully adhered. Note any blistering, distortion or slumping. Pay particular attention to fillets and arrises for cracks from movement or impact. Where skirtings are tucked into a chase in concrete or brickwork, check the condition of the pointing.

c) Edge trims. Check for signs of movement, displacement or stress, particularly at the joints between adjacent sections of trim and for retraction between asphalt and back edge of the trim.