

Design of roof or area to be asphalted

GENERAL

The design of roofs and areas to be covered by mastic asphalt waterproofing and paving should conform to the following recommendations:

- 1) BS 6229:1982 Code of Practice for flat roofs with continuously supported coverings
- 2) BS 8110:1985 Code of Practice for design and construction
- 3) CP3 Chapter V dead and imposed loads
- 4) The Building Regulations where applicable

SELECTION PARAMETERS

It is important that consideration is given at an early stage to the following:

- a) The type of deck construction to be employed
- b) How anticipated movement is to be accommodated and the location of movement joints
- c) What trafficking is anticipated
- d) The means by which the Building Regulations are to be met, particularly the maximum thermal transmittance values of the Building Regulations
- e) How condensation problems are to be avoided
- f) Detail considerations
- g) Drainage of asphalt surfaces
- h) What falls and/or cross falls are required to achieve the minimum permissible fall
- i) How skirting heights and minimum threshold heights are to be incorporated
- j) The correct location of damp-proof courses relative to the mastic asphalt waterproofing
- k) Sufficient working space for the application of materials
- l) Any other relevant information

Design of the base

GENERAL

Generally timber joisted constructions should only be regarded as suitable for light occasional foot traffic such as private balconies or similar situations. Otherwise, the structural base should be of concrete either in situ or precast and designed to support the anticipated imposed loads without appreciable deflection or other movement.

In the case of precast concrete beams and similar units, adequate end and side restraint should be provided to reduce structural movements to a minimum.

Surfaces to which mastic asphalt is to be installed should be prepared to a true and even surface free from irregularities such as abrupt changes in levels, hollows, ridges, dips, concrete, mortar or plaster droppings. The building design should therefore enable the mastic asphalt to be applied to a reasonably uniform thickness.

PAVING Pt 1



All materials should provide a substantial and continuous support to the mastic asphalt application and should be able to sustain the loads imposed by traffic both during and after asphaltting operations.

Any substrate to receive mastic asphalt should be reasonably dry, even, free from dust, laitance, grease, dirt, projecting nail heads, sharp arrises or holes. The designer should study the need for movement joints in the structure. Movement joints should be continued at upstands, walls and edges of buildings.

DRYING OUT THE BASE

Concrete slabs and concrete decks cast in situ should be drained downwards through temporary drain holes formed in the low points of the deck. Subject to checking their effect on structural strength, the holes should be 25mm diameter, positioned to avoid reinforcement bars in the concrete in accordance with BS 6229:1982. The holes should not be filled until seepage and damp have ceased, before finishing work on the ceiling is commenced. Precast concrete roof decking units with open joints are self draining and holes are not required, but if the joints are subsequently sealed, they should be left open for as long as possible.

FALLS

The falls should normally be provided in the base on which the asphalt covering is to be laid. To ensure adequate drainage, allowance should be made for normal construction tolerances and deflections in order to achieve a minimum finished fall of 1:80. Particular attention should be made to pedestrian traffic such as access balconies, drying areas or playing areas.

DRAINAGE

Drainage should be provided and designed in accordance with the requirements of BS 6367:1983, Code of Practice for drainage of roofs and paved areas. Outlets should always be located at the level of the waterproof membrane and, except on small roofs, a minimum of two outlets should be provided. The type of outlet used should be suitable for use in conjunction with mastic asphalt.

SUBSTRATES

CONCRETE

For in situ concrete or hollow tile constructions with an irregular surface, all falls except when provided as part of the structure should be formed by a screed as given in BS 6229:1982. The surface should be provided with a float finish to a plane even surface free from ridges and indentations.

PRECAST CONCRETE UNITS

Precast concrete units should be used and fixed in accordance with manufacturer's instructions, finished with a suitable screed or concrete topping to receive mastic asphalt. Falls should be incorporated in the supporting structure or in the screed or concrete topping.

CEMENT AND SAND SCREEDS

When a reinforced concrete roof slab is overlaid with a screed to provide falls, the screed should be laid in accordance with BS 6229:1982. The surface should be provided with a float finish, even and smooth, free from hollows and ridges. The screed should be designed to remain free from cracks.

SUBSTRATES FOR RAMPS

The surface of the concrete or screed on a ramp should be cross-tamped to provide a key. The height of the tamp should not exceed 5mm.

Mastic asphalt paving

GENERAL

The number of coats should be appropriate to the waterproofing requirements and traffic conditions of the roof.

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.

TRAFFICKED APPLICATIONS

Mastic asphalt provides a versatile answer to the problem of providing paving or combined waterproofing and paving to structures and areas subject to traffic.

The specification to be used is dependent on a number of factors such as the type and degree of traffic to which the paved area will be subjected, whether point loading is anticipated and whether the paving is over accommodation areas.

PAVING Pt 1

