

# Mastic asphalt information

## INTRODUCTION

This information is intended to provide information to Principal Contractor and CDM Co-ordinator for the inclusion in Construction Phase Plans and Health and Safety Files. The information is obtained from previous experience of undertaking mastic asphalt works but may require adaptation to suit the particular conditions of the project. Mastic asphalt works, when completed, generally present low risks to building users. The risks which exist during construction can be effectively controlled when the works are undertaken by specialist contractors in suitable conditions.

Mastic asphalt is not readily combustible, but the heat required to remelt it can be a hazard. Properly handled, by fully trained certificated Mastic Asphalt Council operatives, these potential hazards are reduced to a perfectly acceptable low risk level.

The information on its own does not satisfy the requirements concerning provision of information to employees.

## CONTRACTORS' COMPETENCE

The specialist contractor appointed to undertake the works must have the competence to carry out the works. Assessment of such competence may include:

- an examination of the contractor's familiarity with similar projects;
- verification of membership of the Mastic Asphalt Council;
- an examination of the contractor's health and safety policies and procedures for managing health and safety.

## MATERIALS

Major risks from materials used in mastic asphalt work and some appropriate control measures:

- Mastic asphalt is delivered to site either in solid block form or in a 'Hot Charge' tanker in molten form.
- Materials should be checked immediately they are received on site to ensure they comply with the specification and are correctly wrapped/labelled. Non-compliant materials should be labelled, recorded and removed from site.
- Mastic asphalt is not normally affected by ambient climate. Outside storage is acceptable. Pallets should never be stacked more than two high, on uneven ground or near other site hazards.
- Care should be taken when removing individual blocks from the stack. Safety footwear and gloves should be worn. If stacked at roof level, the bearing capacity of the roof or scaffolding must be checked to ensure no overloading takes place.

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## RE MELTING

For remelting, the blocks should be broken into suitable sizes by use of a club hammer or mallet. Goggles should be worn for protection against splinter chips. Care should be taken to ensure that smaller broken pieces do not fall onto other people.

Blocks should be remelted to the correct laying temperature of 200°C to 230°C. Strict temperature control should be maintained throughout the remelting process. Generally, temperatures should not exceed 230°C.

When adding smaller pieces to molten material in the cauldron or mixer, great care should be taken in order to avoid “splashing”. Gloves should be worn at all times.

The heat to remelt is normally supplied by propane gas or diesel fuel oil, and this should be started in the correct manner as laid down by the LPG safe storage and handling regulations (see section on liquid petroleum gases).

Regular temperature checks should be made and recorded by the mixerman/potman to ensure no overheating. Thermometers must be re-calibrated at least every six months and records kept.

Fires must be extinguished at least one hour before the mixerman/potman leaves the pot or mixer to ensure no smouldering can occur leading to later conflagration. When a hot work permits system has been agreed, permits should be filled in and recorded with the site manager.

## TRANSPORTATION

Molten mastic asphalt should be transferred into purpose-made sturdy buckets by means of ‘dipping’ into a cauldron, or by the banjo on a mixer. Care should be taken to avoid burns or spillage.

Buckets should be carefully cleaned and stored in order to maintain them in good working order. Damaged buckets should be discarded.

Gloves and boots should always be worn when carrying and/or tipping out buckets of hot mastic asphalt.

Suitable safety tools should be used when buckets are to be hoisted. When wheeled, proper bucket trolleys should be utilised. Buckets should not be wedged into wheelbarrows.

## EQUIPMENT

Mixers should be in a good condition, regularly serviced and maintained and with well-fitting lids.

Cauldrons, with appropriate properly fitting lids, should be stood in a correct sized tray on suitably flat hard standing, filled with dry sand to contain the heat. Old, badly worn or damaged cauldrons should not be used.

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## FIRE EXTINGUISHERS

At least two dry powder fire extinguishers should be located adjacent to the remelting equipment at all times which should be regularly checked and replaced after use. They should be rechecked and dated at least every six months by a competent extinguisher agent.

Operators should be trained and certificated in the use of these fire extinguishers.

## PROTECTIVE CLOTHING

Hot mastic asphalt and gas burners can cause severe burns. Operatives should be instructed in their correct use and protective clothing, including gloves and footwear should be worn.

## FIRST AID EQUIPMENT

Suitable equipment should always be available on all roofing sites.

## Bitumen

### RE MELTING

Bitumen bonding compound is melted down from a solid block to a liquid state by heating in a bitumen boiler. This is done on site.

Prolonged high temperatures can change the physical characteristics of bitumen although such changes will not significantly affect its suitability for use as an adhesive in the application of built-up felt vapour control layers, or when bedding thermal insulation boards. Excessive high temperatures will increase the risk of fire.

Oxidized bonding bitumen should not be heated above 260°C or above flash point less 15°C, whichever is the lower. It is generally at the correct viscosity for roofing application at a temperature of approximately 240°C. The temperature of bitumen in the boiler will normally exceed the application temperature by some 20°C depending on air temperature and distance of carry.

### EQUIPMENT

The use of a thermostatically controlled boiler is recommended but manual temperature control may be adopted using standard calibrated thermometers. Except when placed at ground level, boilers should be stood in trays to contain their content in case of spillage.

When it is necessary to place a bitumen boiler on the roof, it should be centred over a main beam that will carry the load. The boiler should be set in a tray with a greater capacity than the contents of the boiler.

The bitumen boiler performance when lit should be monitored at all times by a responsible person.

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