

O2 – Mastic Asphalt

The Other Products Zone of the Standards and Specification Area covers the use of aggregates in specialist products.

This Topic page covers:

- Mastic asphalt.

Mastic asphalt

Mastic asphalt is a blend of fine aggregate, filler and bitumen. The aggregate and filler are usually limestone.

Filler (passing the 0.075mm sieve) makes up about 50% of the mixture and the bitumen content is at least 11%. This gives a mixture that can be spread by hand when it is hot, does not need to be compacted and is very resistant to the effects of water.

The British Standards for mastic asphalt are:

BS 1447	Specification for mastic asphalt (limestone fine aggregate) for roads, footways and pavings in building
BS 6925	Specification for mastic asphalt for building and civil engineering (limestone aggregate)

BS 1447 will be replaced by BS EN 13108-6, Mastic Asphalt in January 2008.

BS 6577 is an equivalent Standard for mastic asphalt made with other crushed rocks, but is seldom used.

BS EN 12970, Mastic asphalt for waterproofing is also available, does is not used routinely. Most companies prefer to use proprietary products.

Guidance on the use of mastic asphalt is published as:

BS 8218	Code of practice for mastic asphalt roofing
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The trade association for all aspects of the mastic asphalt industry is the Mastic Asphalt Council (MAC).

The Mastic Asphalt Council publishes an extensive series of technical guides that can be downloaded from their website. Details can be found on: www.masticasphaltcouncil.co.uk

The main uses of mastic asphalt are:

- Internal floors
- Paving
- Roofing
- Tanking.

Floors

Mastic asphalt for internal floors can be used as a wearing surface or as an underlay to floor tiles and carpets.

Mastic asphalt has traditionally been used in hospital corridors and on covered platform areas at large railway stations.

Because floors often have to resist point loading, a very hard grade of bitumen (typically 10 pen at 25°C) is used. Resistance to point loading is assessed using an indentation test that gives a hardness number. Some grades of mastic asphalt for flooring contain a proportion of coarse aggregate.

Proprietary flooring mastics are available to resist electro-magnetic sparks, chemicals and acids.

Paving

Mastic asphalt paving is used to surface roof top car parks. Because the mastic asphalt resists water, it protects the structure below.

The mastic asphalt mixtures used in paving are made with 40 pen grade bitumen. Refined lake asphalt can be added. A number of methods are used to give skid resistance to the finished surface.

Companies have developed proprietary systems to waterproof and surface roof top car parks. Most use polymer modified bitumen to give additional benefits. The proprietary systems are covered by a certification system managed by the British Board of Agrément (BBA). Details can be found on: www.bbacerts.co.uk

Roofing

Mastic asphalt roofing is always part of roofing system that requires ancillary materials and products to resist a wide range of temperature.

Proprietary systems with BBA certification are often used.

Tanking

Tanking with mastic asphalt is a method of protecting the parts of a structure that are constructed below ground level.

Ground water usually exerts pressure that will result in the potential for movement of water through a concrete structure. Ground water may also contain chemical compounds that are potentially harmful to concrete and steel.

Mastic asphalt can also be used to line the inside of a structure that has been designed to contain liquid, but the design constraints are different to those for tanking structures below ground level.
