

Polymer Modified Mastic Asphalt

*“Seamless,
durable systems
for all climatic
extremes ...”*

Why Polymer Modified Mastic Asphalt? ...

Mastic asphalt is the ultimate protection for a wide range of construction applications. Its seamless nature offers total waterproofing integrity for roofing and tanking applications.



and tanking applications.

Whilst it is one of the world's most traditional construction materials, it has continued to develop with the times and even in today's fast-track

building industry Polymer Modified Mastic Asphalt remains the unrivalled choice for many designers and specifiers.

The addition of **SBS (Styrene Butadine Styrene)** Polymers to the bitumen binder gives an increased tolerance to building movement, climatic extremes and thermal shock.

Polymer Modified Mastic Asphalt is installed by trained operatives who have undertaken the mastic asphalt industry's extensive training programme, which lasts for a minimum of 3 years to NVQ level 2/3 or equivalent.

Polymer Modified Mastic Asphalt can only be installed by listed contractors. As a result we can offer comprehensive guarantees with complete confidence in both labour and materials.

ParaPhalt or ParaPave?

Langley Waterproofing Systems Limited offer solutions to a variety of applications requiring Polymer Modified Mastic Asphalt.

ParaPhalt is designed for flat and sloping roofs, terraces and roof gardens. It can be utilised in cold or warm roof situations and is also suitable for inverted roof waterproofing systems.

It offers:

- Greater stability at high operating temperatures.
- Greater flexibility at low operating temperatures.
- Prepared and laid in the same way as traditional mastic asphalt.
- Available in blocks or hot charge.
- Guaranteed systems – materials and workmanship independently insured for 20 years.
- Systems include insulation vapour control layers and accessories.

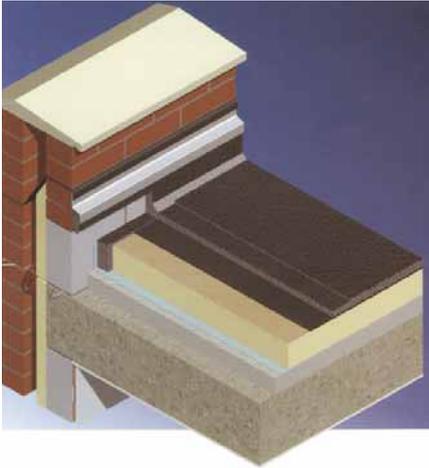


ParaPave is polymer modified mastic asphalt paving for roof top car parks. ParaPave offers all the above benefits in addition to:

- Increased flexibility and greater resistance to cracking and opening of bay joints.



Design Considerations ...



Design of the base

Substrates 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 or dips, therefore enabling the mastic asphalt to be applied to a reasonably uniform thickness.

All materials should provide a substantial and continuous support to mastic asphalt application and should be able to sustain the loads imposed by traffic, both during and after asphaltting operations. The designer should study the need for movement joints in the structure. Movement joints should be continued at upstands, walls and perimeters of buildings.

Tolerances

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

Damp-proof courses

It is essential that a waterproofing membrane does not override a damp-proof course in vertical applications.

Ideally, damp-proof courses should be positioned one brick course above the chase into which mastic asphalt is applied, with the exposed course of brickwork normally being protected with a cover flashing extending 75mm down the face of the mastic skirting.

Where site restraints dictate that it is necessary to install a chase at the same level as the damp-proof course, there is a risk of damage occurring to the continuity of the damp-proof course, and special care is required during installation and cutting the chase.

Falls

Whilst ponding is not detrimental to the life of mastic asphalt, it is generally desirable that falls are incorporated on flat roofs to assist in the discharge of rainwater and to minimise ponding.

All flat roof surfaces should be laid to cross falls and/or falls to ensure proper drainage as recommended in BS 6229: 2003. Rainwater outlets should be sited at low points in the general roof area, well clear of other penetrations, where possible.

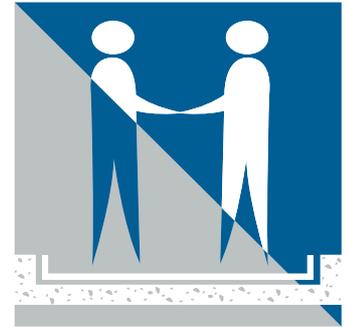


Falls should normally be provided in the base on which the roof covering is to be laid. To ensure adequate drainage, allowance should be made for normal construction tolerances and deflections in order to achieve a minimum finished fall of 1:80. Particular attention should be paid to areas subject to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

By choosing asphalt roofing, adequate drainage is achieved by using a minimum finished fall of 1:80.

Drainage

Drainage should be provided and designed in accordance with the requirements of BS 6367:1983, Code of Practice for drainage of roof and paved areas. Outlets should always be located at the level of the waterproof membrane and should be suitable for use in conjunction with mastic asphalt.



Polymer Modified Mastic Asphalt

“Seamless, durable systems for all climatic extremes ...”

Design Considerations ...

Substrates

Concrete

For in situ concrete or hollow block/pot constructions with an irregular surface, all falls, except when provided as part of the structure, should be formed by a screed such as given in BS 6229: 2003. 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 and finished with a surface suitable to receive mastic asphalt.

Falls should be incorporated in the supporting structure or formed in a suitable screed.

Trafficked applications

ParaPave 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.

Please contact us for your detailed ParaPave specification.



Surface Protection

The use of solar reflective paint on mastic asphalt skirtings and vertical work is recommended. **Langley ParaFlect** reflective treatment should be applied as soon as practicable after the mastic asphalt has been laid.

Typical ParaPhalt Polymer Modified Mastic Asphalt build-up

- **ParaFlect** solar reflective treatment
- ParaPhalt Polymer Modified Mastic Asphalt
- Sheathing felt (by others) BS 747 Type 4A
- **ParaFoam** plus composite PUR/CORK rigid insulation board (available in tapered format) or **ParaFoam PMA** tissue faced high density PIR roof insulation board
- **Paravapo SBS** metal lined, reinforced, torch on vapour barrier
- **Siplast Primer** cold applied, quick drying universal elastomeric bitumen primer
- Structural deck



Thermal Insulation

A wide choice of insulation is available within our ParaFoam range. **ParaFoam PMA** (Polymer Modified Mastic Asphalt) is our preferred option for use with ParaPhalt systems. An adequate fall on a roof is essential; we are therefore pleased to offer **ParaFoam Plus tapered insulation** as our available solution.

For trafficked areas, walkways and balconies, Langley **ParaGlass**, cellular glass insulation is available.

Please consult our Thermal Insulation literature for full details.

Technical Data ...

ParaPhalt

Description

ParaPhalt is manufactured in the same manner as mastic asphalt to BS 6925:1988 but the bitumen binder is modified by the addition of a selected SBS polymer.

Product Data

External fire resistance: P60 when tested in accordance with BS 476: Part 3.
 Typical density: 2400 kg/m³.
 Thermal conductivity: 0.43 – 1.15 W/mK.
 Vapour resistivity: may be assumed to be not less than 100,000 MNs/gm.

Supply

ParaPhalt can be supplied in blocks for re-melting on site or hot charge ready for immediate use.

Approximate block dimensions: 300mm x 300mm x 100mm (approx. 58 blocks per tonne).

Hot charge option offers:

- Convenience – material supplied ready for immediate use.
- Round-the-clock service.
- Cost effectiveness – no plant or labour on standby.
- More accurate incorporation of added coarse aggregate for paving.
- Reduced waste.
- Services of trained driver/mixerman on site.

Approximate Coverage

- 10mm thickness: 42m²/tonne (approx. 24kg/m²)
- 15mm thickness: 28m²/tonne (approx. 36kg/m²)
- 20mm thickness: 21m²/tonne (approx. 48kg/m²)
- 25mm thickness: 17m²/tonne (approx. 60kg/m²)

Preparation

Re-melting on site should be in mechanically-agitated mixers. Strict temperature control should be maintained throughout. ParaPhalt must

not be heated to a temperature in excess of 220°C and prolonged heating should be avoided. Cauldrons should not be used.

Installation

ParaPhalt should be installed and maintained in accordance with BS 8218:1998, BS 8000: Part 4:1989 and the recommendations of the Mastic Asphalt Council.

The optimum laying temperature of ParaPhalt is in the range 175-195°C.

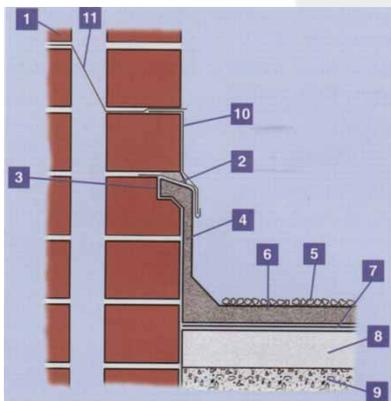
ParaPave Physical Properties

Test (Units)	Method	Result
Density (kgm ³) 25mm ParaPave	Direct measurement	2177
Weight per unit area (kgm ³) 25mm ParaPave	Direct measurement	54

(Please contact us for your detailed ParaPave specification).

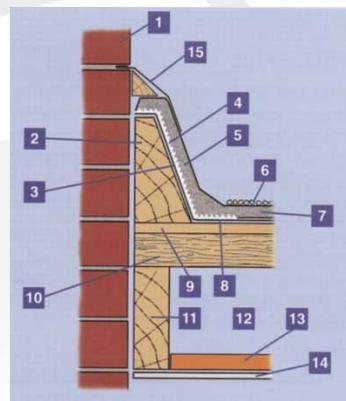
Technical Details ...

Concrete roof deck & skirting (cold roof)



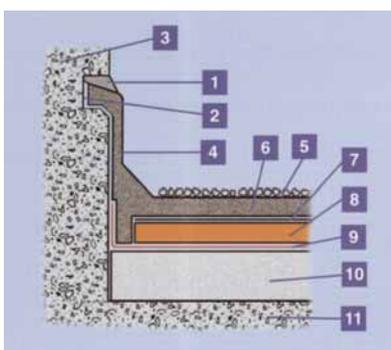
1. Brickwork
2. Cement mortar pointing
3. Chase in brickwork
4. Min. 150mm high 13mm two-coat ParaPhalt skirting
5. ParaFlect reflective treatment
6. 20mm two-coat ParaPhalt
7. Sheathing membrane
8. Asphalt or cementitious screed laid to falls
9. Concrete roof deck
10. Flashing fixed with traditional plumber's detail
11. Cavity tray or DPC

Timber roof deck with free-standing kerb (cold roof)



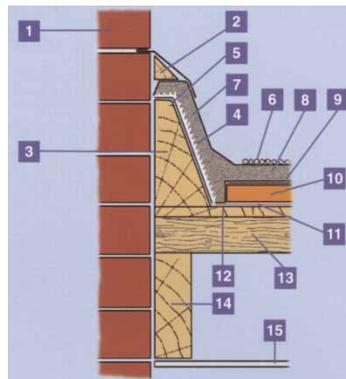
1. Brickwork
2. Free standing timber kerb
3. Separating membrane
4. Expanded metal lathing
5. Min. 150mm high three-coat ParaPhalt skirting
6. ParaFlect reflective treatment
7. 20mm two-coat ParaPhalt
8. Sheathing membrane
9. Plywood boarding or similar
10. Cross furring
11. Timber joist
12. Ventilating space
13. Thermal insulant
14. Foil-backed plasterboard
15. Flashing fixed with traditional plumbers detail including timber fillet.

Concrete roof deck & skirting (warm roof)



1. Cement mortar pointing
2. Chase in concrete
3. Concrete
4. Min. 150mm high 13mm two-coat ParaPhalt skirting with angle fillet and solar reflective paint
5. ParaFlect reflective treatment
6. 20mm two-coat ParaPhalt
7. Sheathing membrane
8. ParaFoam PMA thermal insulant
9. Vapour control layer
10. Asphalt or cementitious screed laid to falls
11. Concrete roof deck

Concrete roof deck & skirting (warm roof)



1. Brickwork
2. Flashing fixed with traditional plumbers detail including timber fillet
3. Free standing timber kerb
4. Expanded metal lathing
5. Sheathing membrane
6. ParaFlect reflective treatment
7. Min. 150mm high 20mm three-coat ParaPhalt skirting with angle fillet and solar reflective paint
8. 20mm ParaPhalt
9. Separating membrane
10. ParaFoam PMA thermal insulant
11. Vapour control layer
12. Plywood boarding or similar
13. Cross furring
14. Timber joist
15. Foil-backed plasterboard

Accompanying Services and Guarantees ...

Understanding what is required

A successful project is dependant on three integral factors, namely; Quality Product, Quality Design and Quality Workmanship.

At Langley Waterproofing Systems Limited we help our clients achieve satisfaction in these key areas by assuming a duty of care throughout the duration of any project.

This 'Partnering' approach in project planning and management is intended to eliminate unnecessary workload from our clients and give them complete peace of mind.

Product Specification

Whether it is new build or refurbishment, Langley Waterproofing Systems Limited will have a range of products suitable for your requirements. It is essential to choose a suitable product in any given structural situation. Langley Waterproofing Systems Limited will assist you with that choice.

Designing the system into the project

Throughout the UK our Regional Technical Managers work tirelessly with our clients. These key people are trained and experienced to meet your expectations of a genuine 'Technical' Manager. They will meet, advise, and formulate specifications, on both New Build and Refurbishment projects. This will include the formation of specific details for areas of the project where standard practices will not suffice.

This information is analysed by the Technical Department at our Head Office, who in consultation with the Regional Manager, will compile full specification packages that are unique to our client's requirements.

The final documentation is a real aid to the specifying client, for use within official contract documents. This information can be supplied in a format to match standard forms of contract and electronically, to aid today's paper free environment.

Services with the system include:

- Roof surveys
- Specific detailing
- Thermal calculations
- Thermal imaging
- Core sampling
- Budget pricing
- Full specification
- Detail drawings

Langley Listed Contractors

Unfortunately a correctly specified and designed project, being compromised on site by inferior contracting methods, remain all too common place. Langley Waterproofing Systems Limited understand the need to reassure our clients in this area.

Over our history we have formed alliances with the country's most proficient contractors. Our listed installers are constantly monitored for 'delivery' in the key areas of quality workmanship and contract management.

We can assist you with the contractor selection process and we insist on monitoring ongoing projects to ensure compliance with our demands and the criteria of our **Insurance Backed Guarantees**.

You can rely upon our ceaseless endeavours to partner with only the contracting companies, whose customer service principles mirror our own.

BBA Approval ...

It is important to our clients that certain products carry British Board of Agrément (BBA) approval. The existence of a BBA Certificate for many of our products is all the independent reassurance you require that our products are fit for purpose.



Single Premium Guarantees with no strings ...

The products and related services provided by Langley Waterproofing Systems give us the confidence in turn to provide guarantees for our systems. These warranties are available for up to a twenty year duration.

We have deliberately steered away from guarantees that are dependent upon the continuation of **annual premium payments**, by either manufacturer or contractor.

We have opted to supply single premium insurance backed guarantees that cover your specific project against failure in product, workmanship, design and third party consequential damage (membranes).

The principle behind our scheme is simple. In return for a single premium payment by **Langley Waterproofing Systems Limited**, your project obtains its own insurance policy. This policy is not dependant on any change in building owner or the ongoing existence of original contractor or supplier. Quite simply it is a form of guarantee you can rely on to still be in existence on completion of the period of cover.

The guarantees issue is dependent on a survey by the insurance backer. Comfort can be taken from this independent approach. Only when both Langley Waterproofing Systems Limited and the insurance company are happy with the completed project, will the certificate be issued.

The success of our systems over eight decades speaks for itself, but it is comforting to know that a worthwhile guarantee is in place should problems occur.



Many Satisfied Customers ...

Langley Waterproofing Systems Limited would like to thank all our clients that have chosen to rely on our high performing waterproofing products and services over the years.

Below is just a small selection from our client portfolio stretching across the UK.

Accumen Facilities
Anglia University
Atkins
ATP Group
Aylesbury Dist. Council
Baily Garner
Barker Associates
Barrie Vincent & Partners
Basildon District Council



Bath & North East Somerset Council
Brent Housing
Brooke Vincent & Partners
Building & Property Ltd
Building Design
Building Link Design
Calfordseaden
Capita Property Services
Cardinal Property Design
Carillion Services Ltd
Chelsea B.S
Chelmsford Borough Council
Chesterton
Chetwood Associates
City of Nottingham
Cluttons
Colliers CRE
Conrad Ritblat
Countryside Properties
Crawley Borough Council
Dearle & Henderson
Dobson & Poole
Donaldsons C S



East Riding of Yorkshire Council
Ellesmere Port & Neston Council
Enfield Council Design & Maintenance
Exeter City Council
Fulcrum Design
Harlow Council



Haywards Property Services
Horsham D.C.
HSB Partnership
HSBC Bank
Hunter & Partners
Ingleton Wood C.S
Keith Snell & Partners
Kendall Kingscott
King Sturge & Co
Kingston upon Hull City Council
Knight Frank
L B Tower Hamlets



L B Hackney
L B Hammersmith & Fulham
L B Haringey
L B Islington
L B Lambeth
L B of Barnet
L B of Enfield
L B of Greenwich
L B of Hackney
L B of Hammersmith & Fullham
L B of Hounslow
L B of Islington
L B of Lambeth
L B of Newham
L B of Redbridge
L B of Tower Hamlets
L B of Waltham Forest
L B of Wandsworth



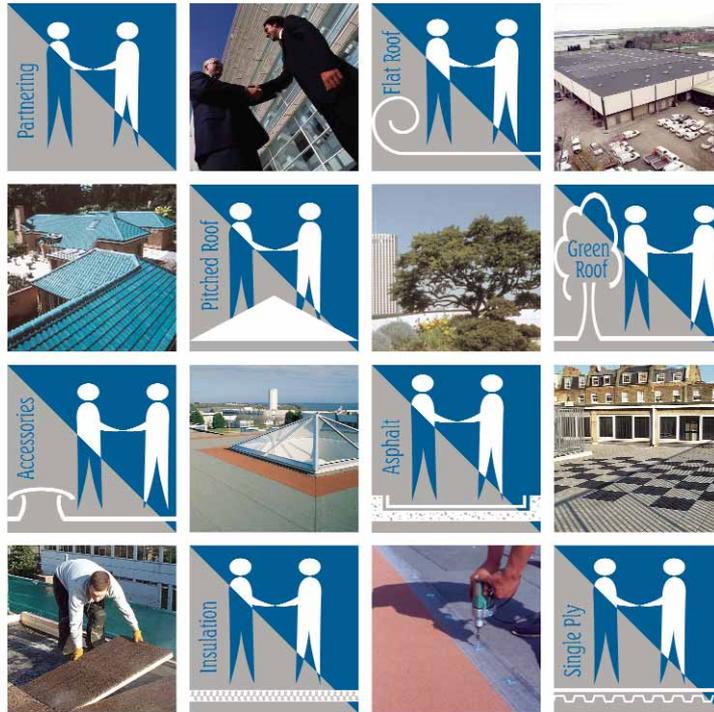
Lambert Smith Hampton
M.E.P.K Architects
Malcolm Hollis
McBains Cooper
Monk & Partners
Paddington Churches
Parkman
Pellings
Peterborough City Council
Pinnacle Housing Ltd
Poole Borough Council
Portsmouth City Council
Royal Borough of Kensington & Chelsea
Serco Property & Design
Shepherd Epstein Hunter
Shropshire County Council
Steve Frankham Associates
Swansea University Estates



Tuffin Ferraby & Taylor
UCI Cinemas
Unicorn Consultancy Services Ltd
W S Atkins Architects
Watford Council
Welwyn & Hatfield Council
West Midlands Police Headquarters



West Sussex County Council
William Martin & Partners
Yorkshire Building Society



Bishop Crewe House, North Street, Daventry, Northants NN11 5PN
 Telephone: 01327 704778 Fax: 01327 704845
 E-mail: enquiries@langleywaterproofing.co.uk
 Website: www.langleywaterproofing.co.uk