

## Shell Bitumen

# Familiar brand refreshed

Shell's Cariphalte range of polymer modified bitumens has been updated and simplified with the introduction of six binders developed for specific applications.

Six products have been launched by Shell Bitumen to bring the Shell Cariphalte range of polymer modified bitumens bang up to date with latest British Standards. Shell is now offering three core and three 'speciality' binders to the UK market – designed to provide high resistance to rutting, cracking and permanent deformation.

The six Shell Cariphalte polymer modified bitumens (PMBs) were launched in January this year in line with specifications set out in British Standard BS EN 14023 for PMBs. The standard was introduced in 2008, giving new specification classes for polymer modified binders and giving Shell an opportunity to review its well known Cariphalte range.

This is a popular brand that has been in use around the world for the more than 40 years. "As bitumen technology advanced, more products were added to the range of binders, but too many products in the portfolio over complicated the choice for our customers," says Shell's UK Technical Service Manager Lee O'Nions.

"The Shell Cariphalte range of products has been simplified to a smaller, more adaptable and innovative selection of high performance PMBs offering increased durability and reliability. The new range should allow customers to choose the right product to satisfy their exact requirements."

**"Shell Cariphalte Dense Mixture has been recognised as one of the best PMBs in the UK market for the past 20 years, and has a proven track record in high performance asphalt."**

Lee O'Nions

The new range includes three core binders – giving two options for thin surfacing and one for base course asphalts called Shell Cariphalte Base. Shell Cariphalte Thin Surfacing and Shell Cariphalte High Performance have been designed for use in surface course asphalt.

"The standard performance binder (Shell Cariphalte Thin Surfacing) offers a flexible material that can be used in thin surfacing and mastic asphalt applications," says O'Nions.

"The high performance thin surfacing binder (Shell Cariphalte High Performance) gives a very durable alternative. It is a multi application binder which is highly modified."

Shell Cariphalte High Performance is also a highly elastic binder. As such it can be used with porous asphalts for sustainable urban drainage systems (SUDS). It is also well suited for high stress and heavily trafficked locations such as airfields, roundabouts and bus lanes.

The Shell Cariphalte Base binder is designed for use in the lower pavement layers to reduce cracking, avoid moisture damage and provide better adhesion between bitumen and aggregate. "Using polymer modified binder in all layers of the road can give even greater confidence in a pavement's end performance. Each of the core binders on offer, as well as the speciality materials, have been developed for specific applications and their formulations are all different and unique. Throughout the process of developing the new bitumen range we looked at all of the specialist asphalts available on the UK market to ensure we had a binder that is suitable for as many uses as possible," O'Nions says.

The three speciality binders – Shell Cariphalte Racetrack, Shell Cariphalte Fuel Resisting and Shell Cariphalte Dense Mixture have been designed to perform in a variety of testing circumstances. One of these innovative binders can be selected for projects that would normally require a bespoke binder for that particular application or asphalt mix.

Speciality binders of Shell Bitumen's Cariphalte range have been developed to perform in extreme circumstances, including racetracks





Asphalt containing Shell Cariphalte Racetrack was laid in Singapore on roads used for the city's first Formula 1 Grands Prix in 2008

For instance, Shell Cariphalte Racetrack is in use within asphalts laid on a number of Formula 1 circuits around the world including Sakhir in Bahrain, where Shell Cariphalte Racetrack was selected for its high resistance to deformation and cracking. Last year asphalt containing this binder was laid on the new Formula 1 circuit in Singapore as well as a number of test tracks. The binder has a much higher cohesive strength than conventional bitumen allowing it to better withstand the high horizontal shear forces exerted by race cars accelerating out of or braking into corners.

"We are pleased to see Shell Cariphalte Racetrack selected as the binder for a number

of Formula 1 circuit resurfacing projects. Shell has been involved in Formula 1 since 1950 and fully understands the importance of cutting edge technology in this area. For this application, the track surface has to remain constant, whilst being subjected to a range of weather conditions and extreme punishment from the Formula 1 cars," O'Nions says.

Shell Cariphalte Fuel Resisting is well suited to a variety of locations that require increased resistance to petroleum based fuels such as petrol, diesel and kerosene. The binder offers greater durability and consistency compared to conventional bitumen and its increased resistance to fuels means that it is a good

choice for use in areas such as airports, ferry and freight ports, car parks and bus lanes.

The sixth product in the new range is Shell Cariphalte Dense Mixture (previously known as Cariphalte DM). It is formulated to provide a high resistance to permanent deformation and cracking. It can be particularly beneficial in high stress situations such as bridge decks, crack relief systems or overlaying concrete pavements and expansion joints.

"Shell Cariphalte Dense Mixture has been recognised as one of the best PMBs in the UK market for the past 20 years, and has a proven track record in high performance asphalt," says O'Nions. "Improvements in wheel tracking rate and fatigue life have been reported from projects where particularly strenuous conditions apply."

Shell's polymer modified bitumen for the UK market is manufactured at the company's PMB plant located at the Stanlow refinery in Ellesmere Port where there are storage capabilities for all finished PMBs. From Stanlow the bitumen can be delivered to anywhere in the country. "We use a specialist base binder which offers a higher polymer compatibility. This means that it can be stored for a longer length of time either on site or for long distance transportation," says O'Nions.



Shell Bitumen's Cariphalte Racetrack binder has a high cohesive strength for withstanding high forces

**email:** [info@modernasphalts.com](mailto:info@modernasphalts.com)  
[emma.mallinson@shell.com](mailto:emma.mallinson@shell.com)