Nynas Bitumen

Modified binder benefits spelled out simply

Choosing the right binder for asphalt applications has been made a whole lot easier following the launch of Nynas Bitumen's 'Performance Programme'.

Asphalt producers looking for enhanced durability from their road surfacing materials are becoming more aware of the benefits of selecting polymer modified bitumens. These special binders contain additives designed to make an asphalt more workable during application, and – once in situ – more resistant to deformation, fatigue or cracking.

Recent advances in materials technology have increased the range of polymer modified binders available from Nynas Bitumen. But the ever growing suite of products left some customers unsure which binder was right for their particular needs.

To make things easier, Nynas has decided to rebrand its entire range of bitumen products, including its polymer modified binders, or PMBs. Nynas now offers three categories of bitumen binder as part of a new sales and marketing initiative it calls the 'Performance Programme'.

The first category of binders is described as 'Regular'. Products that belong here do not contain special additives. They include penetration grade bitumens which meet European specifications and are designed to suit conventional asphalt mixes for road construction and maintenance applications.

Next up is the 'Extra' range, which includes Nynas PMBs such as Nypave and Nypol. These binders tend to give an asphalt mix a greater degree of elasticity, helping to improve a material's durability. Products within the Extra range also feature those which provide a greater resistance to 'shearing' stresses, which is important when sports or racing cars, for instance, corner at high speeds on a track. This range of PMBs also contains products suitable for asphalt mixes designed to resist fuel.

> "Clients are starting to realise the considerable performance benefits that PMBs deliver." Jukka Laitinen.

The final category in the Nynas 'Performance Programme' is the 'Premium' binders, which contain far more complex polymers designed to offer a superior level of performance. Premium binders such as the Nynas Endura range are suitable for sites where heavy stresses are placed on a road surfacing, such as docks and bus depots. Large vehicles at these types of site often exert great pressure on an asphalt material when manoeuvring at slow speeds and require a high performing asphalt.

The table (below) gives an overview of Nynas Bitumen's binder range and shows in which category each of the products belong.

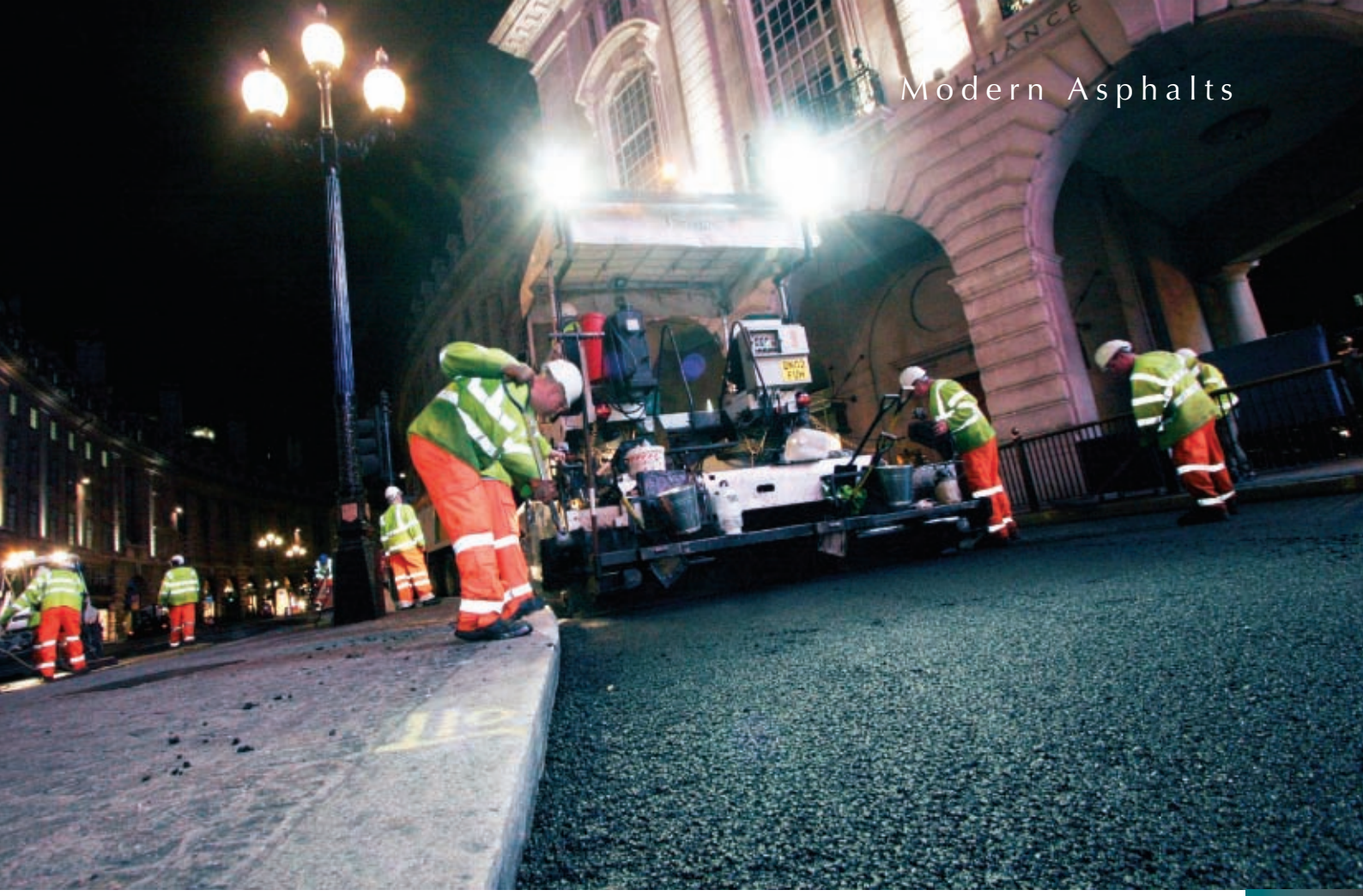
Rebranding of the company's binders has been a thoroughly worthwhile exercise, says Nynas Bitumen's Asphalt Engineering Support Manager in the UK Jukka Laitinen. "The Performance Programme has been launched so that we can clearly explain to customers from all across Europe the benefits of each binder within our entire product range. Not all products are available in each country and some have been developed specifically for local markets, but each binder is now named and ranked in a consistent manner," Laitinen says.

Polymer modified binders account for around 5% of the bitumen produced in the UK, which lags behind continental neighbours such as Germany and France where polymers are used in 25% and 12% of bitumen respectively. But the UK shortfall shows signs of disappearing.

"There has been a sea change in attitudes over the past two years as clients in the UK are starting to realise the considerable performance benefits that PMBs deliver," says Laitinen.

A key driver on many projects is the need for speed. Using polymers is seen by those in

	Hot Mix Applications	Cold & Semi-Warm Applications: BITUMEN	Cold & Semi-Warm Applications: EMULSIONS	Cold & Semi-Warm Applications: CUT BACKS	Industrial Applications
Regular	Nynas (EN spec)	Nynas (EN spec)	Nynas (EN spec)	Nynas (EN spec)	Nynas (EN spec)
Extra	Nypave Nypol Nybit	Nybit E Nyfoam	Nymuls	Nyflow	Nytop Nybit
Premium	Nynas Endura	Nynas Endurabit	Nynas Enduramuls	Nynas Enduraflow	Nynas Enduratop



Clients are realising the benefits of specifying PMBs in all asphalt layers – for long term performance and lower life time environmental impact

the know as a great way of allowing roads to be reopened sooner, as PMBs can allow materials to be laid at cooler temperatures.

"Workability can be an issue with asphalt when time is tight due to restricted closures of roads for surfacing works. Contractors need materials that can be used at lower temperatures and be fully compacted quickly, yet still have the vital high performance characteristics and environmental benefits on offer," says Laitinen.

He adds that PMBs are used mostly within surface courses, but there is much to be gained from using them in base layers. Major schemes have been carried out in recent months where both the surface and base layers contain PMBs, to ensure maximum longevity and minimum future maintenance.

Polymers are specially selected to give performance characteristics required to suit a particular application. These can be made to increase flexibility, resistance to rutting or greater workability.

Nynas' knowledge of which additive works best to achieve a desired result follows 10 years of research, development and investment by the company across Europe. Dedicated polymer production plants are in operation at Dundee and Ellesmere Port to ensure the PMBs can be supplied quickly to asphalt batching plants throughout the UK. Laboratory technicians based in this country are on hand to check for quality control, and mixes are subjected to a full range of asphalt performance tests.

Nynas staff in the UK liaise closely with the company's laboratories across Europe to help develop products and applications for the future. Facilities on the continent include a state of the art laboratory in Antwerp, Belgium and a 'blue sky thinking' research centre at Nynashamn in Sweden.

Jukka Laitinen says that Nynas prides itself in the close contact it keeps with not only its customers but their clients as well, such as local authorities and the Highways Agency. He says this helps the company to advise on the right polymer modified binder for use on a particular contract. Senior members of staff actively participate in the development of new standards and specifications for asphalt and bitumen technology through their membership of various national and international standards committees and working groups.

Major schemes have been carried out in recent months using PMBs in surface and base layers

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