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SRIPATH ON PATH TO BITUMEN ENHANCEMENT

Sripath's products are used to enhance the performance of bitumen for paving and roofing applications.

WITH DEMAND FOR MODIFIED BITUMEN INCREASING WORLDWIDE, SRIPATH TECHNOLOGIES IS ENSURING BITUMEN MANUFACTURERS AND CONTRACTORS HAVE ACCESS TO QUALITY ADDITIVES TO ENHANCE BITUMEN PERFORMANCE.

The global market for polymer modified bitumen (PMB) is projected to witness significant growth in the coming years. This, as a recent global polymer bitumen market outlook by research firm Goldstein Market Intelligence suggests, is mainly due to the enhanced characteristics of such bitumen, including extra strength, high cohesiveness, and resistance to fatigue, deformations, and stripping.¹

Addition of polymer or crumb rubber to bitumen has shown to improve resistance to temperature variations, weather, and high traffic loads, while reducing maintenance costs and offering excellent driving comfort. The 'Asia Pacific Bitumen Market Forecasts 2027' report by Graphical Research suggests the market for PMB in the Asia Pacific region is likely to grow remarkably through to 2027, driven mainly by higher demand from countries such as China, India, and Indonesia.²

With that growth comes demand for quality bitumen additives, including rejuvenators, polymers and oils that help enhance the properties of native asphalts. Sripath Technologies has been actively developing such products, investing heavily in research and development for innovative solution-oriented bitumen additives.

Established since 2006 in New Jersey, US, Sripath's products are used by customers in North America, Asia, Europe and South America to enhance the performance of bitumen for paving and roofing applications.

The company has recently launched Sripath Asia-Pac with an office in Melbourne

to better serve the Australian and New Zealand bitumen and asphalt markets. *Roads & Infrastructure* caught up with Sripath's management team to find out more about what the company has on offer.

EXPANDING THE TEMPERATURE RANGE

PGXpand is one of the most globally sought-after products in Sripath's paving portfolio, according to Ravi Rajagopalan, General Manager of Sripath Asia-Pac.

"PGXpand was developed as an easy to make, easy to use and easy to handle modifier for bitumen," he says.

"The role and benefits of polymers in bitumen is clearly demonstrated. However, customers using the conventional polymers available in the market often struggle with issues such as easy dispersion of the polymer in the bitumen, the stability of the PMB and the difficulty in laying down such a high viscosity mix."

To help overcome those practical challenges, the team at Sripath investigated the base chemistry and characteristics of the bitumen and set out to engineer an innovative polymer which is easier to disperse into the bitumen for the manufacturers and to lay down for the contractors. Out of that research, PGXpand was born.

"The key in developing PGXpand was to develop a user-friendly PMB additive that increased the high temperature stiffness of bitumen, while maintaining the low-temperature performance of the

paving binder. PGXpand is also an efficient workability and compaction aid in paving formulations, particularly in those stiffer mixes incorporating high amounts of recycled asphalt pavement (RAP)," Krishna Srinivasan, President, Sripath USA, explains.

More importantly, Srinivasan says, PGXpand is dosage-efficient and consumes minimal energy during production.

"Dosage efficacy is a big advantage with PGXpand that our global customers greatly appreciate. For a project in Andhra Pradesh, India, which experiences high summer temperatures of 40-42 °C, PGXpand was selected primarily for its dosage-efficiency. In addition, rigorous testing showed that PGXpand also provided very good rutting resistance and a high softening point," says Srinivasan.

"The time to manufacture a mix with PGXpand are also vastly lower than when using alternate polymer technologies. PGXpand can be incorporated into a mix at significantly lower temperatures of production, which leads to increased energy efficiency in dispersing polymer into bitumen."

While that's beneficial for the manufacturer, the end-user is also benefited.

"From the end-users' point of view, the viscosity of bitumen modified with PGXpand is significantly lower than that of conventional bitumen mixes. That helps with easy lay down, easy compaction and long-term storage stability of PMB," says Deepak Madan, Chief Marketing Officer of Sripath.

A WELL-BALANCED SOLUTION

ReNUBIT is another highly popular product in the Sripath paving portfolio and among the first products the company developed. The key here, Rajagopalan says, was to develop a proprietary blend of petrochemical oils which enable easy dispersion of polymers and crumb rubber in bitumen, while improving the low temperature properties of bitumen, including cold adhesion, cold bend, cracking and flex properties.

“With ReNUBIT, we set out to engineer an oil that was broadly compatible with a wide range of bitumen products and made dispersion of polymers and crumb rubber in bitumen easy. We also wanted to develop something that helped improve the low temperature cracking, fatigue, and failure properties of bitumen. ReNUBIT is a well-balanced bitumen additive that also functions as an effective cutter in bitumen,” he explains.

From the early days of being launched in the market, Madan says ReNUBIT was well-received in both the paving and roofing communities in North America.

“ReNUBIT is easily our best-selling product tonnage-wise,” he says, noting that ReNUBIT’s popularity owes to its high compatibility with a wide range of bitumens.

A ‘GREEN’ OPTION

Sripath also offers NuMIXER, an innovative green bio-oil that, in addition to providing many of the same benefits as ReNUBIT, delivers greater dosage efficiency and ease of use.

“ReNUBIT was remarkably successful in the oil additive segment for bitumen modification, so we set about thinking what the next-generation oil for the marketplace could be. We learned a lot from our experience of developing bio-oil bitumen rejuvenators, so we used the findings to create a green, sustainable, non-bituminous oil that would serve the same segment,” says Rajagopalan. Out of this thinking, NuMIXER was born, giving Sripath customers an option to choose between two types of oils.

“NuMIXER is very effective in aiding polymers and crumb rubber to be compatible with bitumen, while improving low temperature cracking, fatigue and failure and adhesion properties of bitumen. This is particularly useful in more demanding applications. It also helps lower the viscosity of the base bitumen,” says Srinivasan.

“Add to that the fact that NuMIXER is a ‘green’ product with sustainable chemistry and better dosage efficiency than petrochemical oils. It’s also a product with zero volatile organic compounds (VOCs), so it’s completely worker friendly. Moreover, NuMIXER is effective in bitumens used world-wide,” says Madan.

“Despite a small premium, NuMIXER is more dosage efficient, has a lower carbon footprint, and delivers overall cost-savings compared to petrochemical oils. It is not surprising that NuMIXER has been well received in various markets around the world,” says Rajagopalan.

“The larger users in the market are migrating towards bio-oils and they prefer such products over petrochemical oils.

There are also changes occurring in bitumen supply patterns and quality worldwide that are increasing demand for additives like NuMIXER. These changes have created a tailwind that we were able to capitalize upon resulting in many success stories,” says Digital Marketing Director, Kate Brough.

With an eye for problem-solving, Sripath Asia-Pac is already engaging with universities in Australia to identify the gaps in the market to ensure that Sripath products meet local compliance requirements utilising materials available locally.

Madan says the team has already received a warm welcome from major industry players. “We are looking to repeat our success stories from the European, Asian and North American markets. We are ready to bring our innovative product portfolio to Australia,” he says.

“We are used to identifying pain points and then finding the solutions for them. This is our core strength, as our product history clearly shows. Our team of industry veterans have a strong track-record for delivering top-notch technical support, and we stand behind our products, 100 per cent of the time,” says Rajagopalan. ■

References:

¹Global Bitumen Market Outlook 2017-2030, Goldstein Market Intelligence

²Bitumen Market Size and Share 2021-2027, Graphical Research

* All of Sripath Technologies’ product names are trademark registered and properties of Sripath Technologies.



Sripath products meet local compliance requirements utilising materials available locally.



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Tested. Proven. Trusted.

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Increases high temperature grade and rutting resistance.

ReNUBIT® *Special blend of petrochemical oils.*
Improves polymer compatibility and low temperature performance of bitumen.

NuMIXER® *Specially formulated blend of bio-based oils.*
Improves polymer compatibility and low temperature performance of bitumen.

ReLIXER® *Proprietary blend of bio-based oils.*
Rejuvenates bitumen in mixes with high levels of Reclaimed Asphalt Pavement (RAP).

SriCote™ *Dosage-efficient amine-free anti-stripping agent.*
Improves moisture and fuel resistance of roadway.

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