

JULY 2021

ROADS & INFRASTRUCTURE

AUSTRALIA

PLAYING THE LONG GAME

InEight's Brad Barth on
infrastructure lifecycle planning

DIVERGING FROM THE NORM

A look at novel designs for
Bruce Highway upgrade

AFPA 2021 SYMPOSIUM

What to expect at the event

Official media partners of





MAKING ASPHALT BETTER

SUSTAINABLE ASPHALT REJUVENATION AND ASPHALT MODIFICATION USING ENVIRONMENTALLY FRIENDLY ADDITIVES IS OFTEN PERCEIVED IN THE INDUSTRY AS EITHER IMPRACTICAL, OR TOO COSTLY. SRIPATH TECHNOLOGIES WANTS TO CHANGE THAT VIEW. *ROADS & INFRASTRUCTURE* REPORTS.



ReLIXER is Sripath's 'Green' asphalt rejuvenating bio-oil, engineered for High RAP mixes.

When Sripath Technologies, a US-based company with a global footprint, first introduced their bio-oils based asphalt rejuvenator product ReLIXER to the market in 2013, it culminated over 18 months of research and development by the team.

Made with a blend of bio-oils and green ingredients, ReLIXER mixes with reclaimed asphalt pavements (RAP) and reclaimed asphalt shingles (RAS) – commonly used in the US for roofing purposes – to rejuvenate the bitumen in the paving mix, allowing the reuse and recycling of high levels of RAP, while minimising need for virgin bitumen and aggregates. Thereby, this product restores lasting functional performance while reducing carbon footprint.

ReLIXER, as President Krishna Srinivasan tells *Roads & Infrastructure*, is just one example of innovative products the

company's technical team has developed over the years.

In 2006, Srinivasan was already a "grizzled veteran" of the industry – as he refers to himself – when he set out to establish the Sripath Technologies business in New Jersey with a small team.

When asked about where his knowledge of the pavement industry came from, Srinivasan's answer is simple: "You could say I've got tar under my fingernails. I was in the bitumen industry for the better part of ten years before forming Sripath."

Having worked as materials engineer in the civil, structural and aeronautics industries, including as Vice President of Technology for the world's largest roofing business, GAF Materials Corporation, he already "had the pulse of the bitumen industry" when Sripath was launched, as he recalls.

"Roofing and paving use a lot of the same raw material sources. When you have been in the roofing industry for so long, you know about the issues affecting the paving industry as well."

STARTING SMALL

As Sripath Technologies took its first steps in developing products to "make asphalt better," as the company's slogan suggests, the search for an environmentally friendly bitumen rejuvenator became one of the key projects that put Sripath on the path to recognition.

"We have a passion to bring new products and new ideas to the market. Most of our products are new ways of looking at solving problems that the industry faces every day," Srinivasan says.

Even though the US market for asphalt rejuvenators was relatively non-existent in 2006, Srinivasan says he knew the need for more recycling was an issue the industry would need to deal with eventually.

Coincidentally, around the same period, the Federal Highway Administration (FHWA) in the US was working on promoting the production of high-quality high RAP mixtures and had initiated an Expert Task Group (ETG) in 2007 with the aim of advancing the use of RAP in asphalt paving applications.

"When we started developing the ReLIXER asphalt rejuvenator, there was hardly any market for it in the US. We were ahead of the times, but we worked the problem from a fresh perspective, trying to figure out where the industry was headed and that led us to the whole concept of RAP management," says Deepak Madan, Chief Marketing and

Business Development Officer.

Research by the team and collaboration with the roads authorities led to ReLIXER being successfully used in the heavily trafficked Illinois Tollway – a 750-kilometre multi-lane highway. The Tollway Authority was looking for a way to increase their recyclables percentage without compromising performance specifications. ReLIXER passed all laboratory tests and proved to be the most dosage efficient option for the project.

In 2015, after two years of development and testing, ReLIXER was commercialised in the United States. Since 2017, Sripath has helped lay out millions of tons of high RAP mixes using ReLIXER in projects worldwide including in Canada and Southeast Asia, with the rejuvenator also marketed under the ReJUVN8 brand name in some countries.

FOCUS ON SOLUTIONS

For a company of their size, Sripath invests heavily in research and development for new products and innovative technical solutions. Apart from their flagship asphalt rejuvenator, Sripath offers a range of unique polymers, bitumen modifiers and oils to improve the performance of bitumen and asphalt mixes.

All these products, Kate Brough, Director of Digital Marketing and Branding says, were developed to address long-standing issues facing the asphalt industry.

One such problem in the industry is related to dispersing styrene-butadiene-styrene (SBS) into bitumen. Here too, Sripath's solution followed a practical approach, as Brough explains.

"Polymers are very important to the road building industry, but despite all of the good properties they bring to asphalt, historically trying to disperse SBS into bitumen has been like trying to disperse chewing gum in water. These two materials just do not like each other," she says.

Sripath's answer to this issue was PGXpand, a unique and highly compatible polymer modifier that helps Polymer Modified Asphalt (PMA) producers eliminate or reduce their SBS content and reduce viscosity.

"We started by asking the question 'is there a different way to look at this?' and the answer was in the molecular composition of bitumen. So rather than reinforcing one aspect of the bitumen, we chose to reinforce another aspect of it to deliver the same level of performance. And along the way, we discovered that you could be more energy efficient and obtain materials that dissolve

more easily into bitumen, while providing exceptional high temperature properties and rusting resistance.”

More recently and following intensive research, Sripath developed SriCote, an amine-free anti-stripping agent that provides an answer to the moisture and fuel resistance issues in demanding applications.

“Many aggregates around the world are deficient. They need anti-stripping agents to help better bind bitumen to the aggregate and resist stripping due to moisture and ageing. Historically, the anti-stripping agents of choice have used an amine-based formulation which has had question marks about health and environmental safety,” Brough says.

“So, we set out to develop a more health-conscious anti-stripping agent, and as always, we wanted it to not only be safer, but to also perform better, while being easier to use and handle. Out of this effort came our new anti-stripping agent.”

SriCote is used to produce binders with an enhanced moisture and fuel resistance. It significantly improves Tensile Strength Retention (TSR) and jet fuel resistance values in asphalt mixes even at low use levels.

Some of Sripath’s other products for the bitumen industry include the PGXtend asphalt modifier, used for increasing the high temperature stiffness modulus of the binder, and ReNUBIT, a special blend of petro-chemical oils, developed for improving polymer compatibilization and low temperature properties for both the paving and roofing industries.

ROADS AS FUTURE MINES

With all their research and development, Sripath seeks to develop products with four key characteristics: sustainable, superior performance, practical and economical.

“Most of the time, when you want to use an asphalt additive that’s environmentally friendly, you end up paying a premium price. That was never our philosophy as a company. We are in the business of making products that are easy to use, deliver performance, are sustainable and at the same time, provide cost benefits to our customers and the community at large,” says Srinivasan.

“Moreover, for us asphalt recycling is not just about preventing material from going into landfills and using it as a filler for future roads. What we have done with ReLIXER, is develop materials that add more value to the recycled asphalt; in other terms, we upcycle it. In this way, our roads can be our future



Sripath offers a range of asphalt rejuvenators, polymers, compatibilisers and modifiers for asphalt improvement.

mines or future refineries, from which we can draw valuable raw material indefinitely.”

With the need for high quality asphalt growing worldwide, Srinivasan sees a strong potential for Sripath’s solutions in Australia and elsewhere in the world.

SRIPATH ASIA PAC

Sripath recently registered its company in Australia, under the banner of Sripath Asia Pac, to better support the Asia Pacific market, including Australia and New Zealand.

When asked about the key solutions Sripath can offer the Australian market, Madan says the answer is multi-faceted.

“Australia is a net bitumen importer. So, anything that can help reduce bitumen usage will be beneficial to the country as it helps improve the balance of trade. Also, worldwide, the supply and the quality of bitumen is being threatened by various factors. We see ourselves to be at the nexus of great change within the industry, and we are a technology-driven company trying to deal with the challenges the industry faces going forward.”

Ravi Rajagopalan is the General Manager for Sripath Asia Pac. Having only recently finalised the paperwork for registering the company in Australia, Rajagopalan has already begun conversations with customers, academicians and key industry players to identify areas where the company’s products can best be applied.

“One of the things that we do everywhere we go, and what we plan to do here in Australia, is to work with the leading thinkers, the leading academicians, the leading

Department of Transport people, and the leading consultants. We give them a chance to work with our products, have an open technical exchange, so that they can develop a trust for our material,” Rajagopalan says.

The approach, as Rajagopalan sees it, comes down to Sripath being a technical company at its core that follows a ‘small company’ model when it comes to customer service and technical support.

“We are not here to just take sales orders and ship our products to customers. One of our key differentiators is that we become an extension of our customers’ research and development departments and we guide them throughout the operation, helping solve issues one by one with the strong support from our network of global affiliates,” says Rajagopalan.

“That’s what makes the experience of using our products different, it’s the customer relationship and the 24/7 support,” adds Brough.

Still in its early days in the Australian market, Srinivasan can already imagine Sripath becoming a key player in the industry for asphalt rejuvenators, polymers, compatibilisers and modifiers.

“We are here to stay, we want to be associated with success stories in Australia, like we have been in the rest of the world. And for that, we are ready to collaborate with the industry,” Rajagopalan announces. ■

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



**Innovative.
Impactful.
Cost Effective.**

Tested. Proven. Trusted.

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

PGXpand® *Polymer Additive.*
Increases high temperature grade and the rutting resistance.

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

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

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

Now Available in Australia and New Zealand.

Based in the United States, we have delivered innovative products around the globe since 2006. We are passionate about problem solving and offering solutions to your asphalt challenges. We now bring our unrivalled customer service and technical support to Australia and New Zealand.

We are proud to introduce:



Contact our Sripath Asia-Pac team at info@sripathapc.com or 1800 191 799
Learn more about our products at sripath.com