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# RECLAIM, REJUVENATE, RE-USE:

## SRIPATH'S ANSWER TO ASPHALT

HAVING RECENTLY DEBUTED IN AUSTRALIA, SRIPATH TECHNOLOGIES HAS BEEN IN THE BUSINESS OF ASPHALT REJUVENATION AND ENHANCEMENT FOR DECADES. *ROADS & INFRASTRUCTURE* SITS DOWN WITH THE MANAGEMENT TEAM TO REVIEW SOME OF THE COMPANY'S SIGNATURE PRODUCTS.

Using reclaimed asphalt pavement (RAP) as an alternative to virgin material for road construction was still in its infancy when the team at Sripath Technologies began their research back in 2011.

With a PhD in Materials Science from Rensselaer Polytechnic Institute in the US, and over 10 years of hands-on experience as the technical head of a global bitumen company, Krishna Srinivasan assembled a team of industry veterans. Their first task: Do something about the growing piles of RAP in the US and around the world.

"We knew there had to be a better solution," says Srinivasan. "We didn't want RAP sidelined with only a low value application as a filler. Rather, our goal was to upcycle it, to create higher value uses from it."

The key was in recognising that RAP contained valuable bitumen. A resource that could be used to augment or replace virgin bitumen in the asphalt mix. However, this RAP bitumen was aged, stiff and brittle. The challenge for the team was first to characterise the RAP bitumen, and to then find ways to restore its functional performance.

With the work that followed, not only did the Sripath research team achieve these primary goals, but they also worked with external labs and consultants on creating testing methods that could uniquely characterise RAP bitumen.



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

Additionally, they developed a proprietary elixir of bio-based oils. In addition to being highly dosage efficient, this elixir diffused rapidly into RAP particles, and rejuvenated and restored the aged bitumen in the RAP.

This research led to the development of ReLIXER, an environmentally friendly green blend of bio-oils. As an odourless RAP rejuvenator, ReLIXER is formulated from

prime ingredients with no animal fats or greases and specifically designed for high RAP use levels.

What makes ReLIXER unique, according to Sripath President Krishna Srinivasan, is threefold. It quickly penetrates RAP particles. It rejuvenates and restores the properties of aged bitumen. It supports long-term roadway performance.

**“WHEN WE TALK ABOUT A GREEN, ENVIRONMENTALLY FRIENDLY REJUVENATOR, MOST CONTRACTORS OFTEN ASSOCIATE THAT WITH A HIGHER COST. THAT’S NOT THE CASE WITH RELIXER.”**

“We also like to tout the fact that ReLIXER can be effectively used in asphalt mixes with a high RAP percentage,” he explains. “In Australia, a 10 to 15 per cent RAP mix is common. But globally, asphalt mixes with RAP average 40 to 50 per cent. Up to 100 percent is even occurring on projects. These high ratios are possible with ReLIXER, and it does it without compromising the mix performance.”

The benefits don’t stop there. “ReLIXER is highly effective at low dosage levels. It is easily incorporated at a mix plant. It is non-hazardous, safe to handle and transport, and compatible with a wide range of bitumen and RAP grades from around the globe.”

All these features come together to positively impact the bottom line. Deepak Madan, Chief Marketing and Business Development Officer at Sripath, explains the cost effectiveness.

“When we talk about a green, environmentally friendly rejuvenator, most contractors often associate that with a higher cost. That’s not the case with ReLIXER. It not only meets the performance specifications of mixes while using RAP, but costs are actually reduced by using ReLIXER in higher RAP mixes. Easy to use, effective, and cost-saving? That checks all the boxes for contractors,” says Madan.

To elaborate this further, he offers an approximate cost estimate.

“Typically, for a mix ratio with 40 to 50 per cent RAP material, you would use around one kilogram of ReLIXER per tonne of mix. By doing so, you can reduce the amount of virgin bitumen and aggregates, increase the use of RAP, and realise cost savings anywhere from 7 to 15 per cent per tonne of mix (compared to mix with no RAP.) All of this, without sacrificing any performance properties,” he explains.

Since ReLIXER was first introduced in the US market over a decade ago, and later globally, it has been successfully used on roads in multiple continents. Every day, new roads are being built with higher levels of recycled content.

Sripath also continually monitors the quality and properties of mixes laid down by their customers. They obtain

plant-production mix samples and core tests from the roadways that have used their products.

“What’s also unique about our model is that we work closely with our customers, providing a high level of technical support. In return, we receive data from our customers’ mixes, that allows us to continue enhancing our product lines,” he says. “The results are clear. Mixes that are properly rejuvenated with ReLIXER have the performance equivalent to low-RAP or no-RAP mixes, even after extended aging.”

“ReLIXER converts the existing network of roadways into the mines and refineries of the future,” says Kate Brough, Director Digital Marketing and Branding at Sripath.

#### **SUPERIOR ASPHALT PERFORMANCE**

While ReLIXER was among the first products Sripath launched to market, over the years a range of asphalt modifiers, oils and additives have emerged from the company’s research labs. One of them is SriCote.

“SriCote was developed in continuing our theme of safe-to-use, cost-effective products,” says Srinivasan.

When developing SriCote, the Sripath team set their sights on specifications that would enable better bonding between aggregates and bitumen. This included better moisture resistance, superior resistance to fuels and greases, and higher dosage efficiency.

“Irrespective of the type of mix, be it a hot mix, a RAP mix, or an emulsion mix, SriCote enhances the bonding between the aggregate and the bitumen. As a performance additive, SriCote was initially designed to target high-demand applications, such as airports, seaports, or anywhere where enhanced resistance to moisture and fuels is required,” Srinivasan says.

As with its entire product line, Sripath’s rigorous laboratory testing processes vet the performance over time and ensure longevity and durability.

“Customer and academics from around the world have put our products through their own testing – coming to the same conclusions. Our products are, in fact, highly effective in enhancing asphalt durability,” he says.

#### **SRIPATH IN AUSTRALIA**

Sripath offers a global network of plants dedicated to manufacturing its formulations for asphalt improvement. However, in order to more closely support the Asia Pacific market, Sripath recently launched Sripath Asia-Pac, headed by General Manager Ravi Rajagopalan, with a head-office in Melbourne.

Since its launch, Rajagopalan and his team are engaging closely with the departments of transport across all states, as well as with leading consultants and university academicians, and several key customers to make sure Sripath’s products meet the specifications of the local pavement industry. Together, they are fostering a technical exchange, and evaluating samples for approval.

Among these, Srinivasan says RMIT University’s Professor Filippo Giustozzi is currently in the process of incorporating Sripath’s additives with local asphalt products to ensure compliance with local specifications in Australia and New Zealand as part of a recent agreement.

“We are definitely doing our homework,” says Rajagopalan, who observes that the Australian culture is ahead of the curve when it comes to adopting environmentally friendly asphalt products.

“Almost everyone we have talked to in Australia has brought up the eco-friendly and sustainable ethos, but more importantly, there are clear call-to-actions by industry bodies like the Australian flexible Pavement Association and the transport ministries to increase adoption of recycled material from various waste streams into pavements. They are not simply talking the talk, but they are walking the walk,” says Rajagopalan.

Madan agrees. As an industry veteran with hands-on experience with pavement solutions, he too sees the Australian market ready for Sripath’s green products.

“Australian efforts to research green asphalt technologies is evident. Together we can work with local universities and academics to promote practices that benefit the environment. While globally, levels of commitment to the environment vary by country; in Australia, there’s definitely the desire for the sector to be environmentally more sustainable.” ■

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





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