

THE PATH TO NET-ZERO

AS THE GLOBAL PUSH TOWARD NET-ZERO ACCELERATES, SRIPATH® IS AMONG THOSE LEADING THE CHARGE IN THE ASPHALT INDUSTRY WITH SUSTAINABLE, HIGH-PERFORMANCE ADDITIVES DESIGNED TO REDUCE EMISSIONS, EXTEND PAVEMENT LIFE, AND SUPPORT A CIRCULAR ECONOMY.

In a rapidly evolving world, Sripath exemplifies what it means to innovate with purpose.

Across industries and around the globe, from energy to construction, environmental responsibility is reshaping how companies operate, design, and deliver. The paving and road construction sector is no exception – sustainability now influences materials selection, mix design, production, and business operations.

With over 107 countries, including Australia, committing to net-zero emissions by mid-century, the pressure is on to rethink materials, technologies, and lifecycle performance.

The Federal Government's Net Zero Plan is just one such example, targeting greenhouse gas neutrality by 2050.

In this context, Sripath stands out as a company that has embedded sustainability into the very fabric of its operations.

"Sustainability for us has long been a huge part of our DNA, our vision, and our mission," says Dr. Deepak Madan, Chief Operating Officer at Sripath Technologies.

"We integrate sustainability principles from the outset of our product design process, carefully selecting sources and ingredients that are more environmentally friendly and have a lower carbon footprint.

"Similarly, we choose manufacturing methods that minimise environmental impact and reduce carbon emissions."

Through a science-driven approach, Sripath develops high-performance additives that help asphalt contractors and agencies reduce carbon footprints and deliver desired performance.

PRODUCT PORTFOLIO

Sripath's product portfolio is purpose-built to tackle key environmental challenges in asphalt paving by reducing carbon emissions, excessive virgin material usage, and

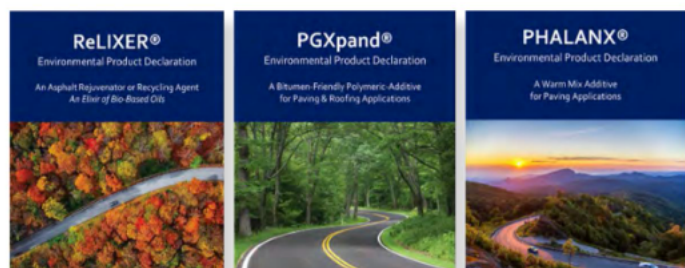


Image: Sripath

premature pavement failure.

Through a combination of science-backed additives, rigorous lifecycle assessments, and region-specific collaboration, Sripath is helping the asphalt industry shift toward a more sustainable, resilient future using products like ReLIXER®, PHALANX®, and PGXpand®.

ReLIXER is a Bio-Oil Rejuvenator used for High-RAP (Recycled Asphalt Pavement) Mixes, specifically designed to restore the functionality of the aged binder in RAP.

One of the biggest hurdles to increased use of RAP is the aged RAP binder, which can limit workability and performance.

A notable case study comes from Queensland where the Australian Flexible Pavement Association (AFPA) led a rehabilitation project using mixes with up to 40 per cent RAP. ReLIXER outperformed other rejuvenators in fracture toughness and ageing resistance. Laid as a wear course on a quarry road in Gaven, Queensland, the trial clearly demonstrated the product's field viability.

From an environmental perspective, ReLIXER delivers renewable raw materials and carbon sequestration benefits, allows for reuse and recycling of higher levels of reclaimed pavements, makes a high-RAP mix easy to pave, and delivers desired roadway performance and durability.

Dr. Krishna Srinivasan, President of Sripath

Above: Sripath's Environmental Product Declarations (EPDs) are helping to increase the transparency of performance and sustainability levels.

Technologies says the development of advanced asphalt additives aid the asphalt industry in delivering pavements that perform better while aligning with global sustainability goals.

"Bio-oil based rejuvenators like ReLIXER enable the use of higher levels of RAP and reduce the reliance on virgin materials. Our innovative warm mix technology, PHALANX, helps lower the energy demand and emissions, both during mix production and paving operation," he says.

"By focusing our innovation on these practical, high-impact solutions, we can help contractors and agencies achieve measurable progress toward net zero while ensuring long-term roadway performance."

Another avenue for decarbonising paving operations lies in reducing the heat and energy required during asphalt production and compaction. With heating responsible for roughly 80 per cent of construction-phase energy use and emissions, the right Warm Mix Additive (WMA) technology can offer considerable savings.

Sripath's warm mix additive, PHALANX, is highly dosage efficient and is designed to lower mix production and paving temperatures, enabling temperature

reductions of up to 30 degrees Celsius (°C), significantly cutting energy consumption and emissions.

In a Queensland field trial using M1000 binder, a small dosage of 0.25 per cent PHALANX delivered a mix production and paving temperatures of 136°C and 120°C, respectively. In comparison, conventional mix production and paving temperatures were at 163°C and 150°C, respectively.

Sripath's next-generation polymeric additive, PGXpand, has been designed to solve the challenge of pavement distress, such as rutting, cracking or fatigue, which result in more frequent road repairs and higher levels of lifecycle emissions.

Ravi Rajagopalan, General Manager, Sripath Asia-Pac, says that Sripath customers are looking for solutions that are both practical and measurable.

"Sustainable additives like bio-based rejuvenators, warm mix technologies, and advanced polymers give our customers a way to lower emissions without sacrificing performance," he says.

"It's about delivering materials that work in the field today while supporting the industry's long-term carbon reduction goals."

According to Steve Halligan of Road Surfacing Solutions, "It is important for us to find the right blend of both focusing on sustainability and delivering desired roadway performance."

"Results show Sripath products can deliver both performance and sustainability, helping the industry move toward net-zero."

ENVIRONMENTAL PRODUCT DECLARATIONS

Sripath's Environmental Product Declarations (EPDs) further highlight its commitment to transparency and continuous improvement.

The company has invested in conducting EPD's for its core products, offering independent, third party-verified data on environmental impacts from cradle to gate for its products.

"As part of our EPD journey, we took a close look at our technologies, manufacturing processes, and overall operations to identify areas for improvement, and we've been actively working to implement those changes," says Madan.

"We're focused on increasing the use of recycled materials, sourcing more sustainable and lower carbon-impact materials, incorporating more sustainable energy sources, and making conscious choices at



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every step of the product lifecycle."

"We recognise that sustainable solutions aren't always possible in every situation, but wherever we can, we aim to make a meaningful difference. These considerations are deeply integrated into our product development and manufacturing processes."

As an example, Sripath's bitumen-friendly polymeric additive PGXpand, has a Global Warming Potential (GWP) value of 2.95 kilograms (kg) of CO₂ (carbon dioxide) eq / kg (kilograms of carbon dioxide equivalent) PGXpand. In comparison, the GWP value of a traditional elastomeric polymer is typically reported to be around 4.5 kg CO₂ eq / kg polymer.

During the production of a Polymer Modified Bitumen (PMB) based on an elastomeric polymer, such as a PMB with 5 per cent SBS (Styrene-Butadiene-Styrene), the process has an estimated GWP value of 375 kg CO₂ eq per tonne.

A PMB produced using 2.0 per cent PGXpand delivers the performance equivalent to the 5 per cent SBS based PMB, but with PGXpand, the PMB operation generates considerably lower levels of carbon dioxide emissions, as is evident by its significantly lower GWP value of 64 kg CO₂ eq / tonne PMB. Thus, by using PGXpand-based PMB, an 83 per cent reduction in GWP can be achieved.

Jill McConaghie, Marketing Specialist at Sripath, says Sripath is helping to bridge the knowledge gap in the industry by advocating knowledge sharing and promoting educational seminars or webinars showcasing its sustainable additives.

"There's growing advocacy for solutions like high RAP or warm mix asphalt," she says.

"But some jurisdictions remain hesitant, often due to a lack of awareness or comfort with these technologies.

"At Sripath we believe in sharing our

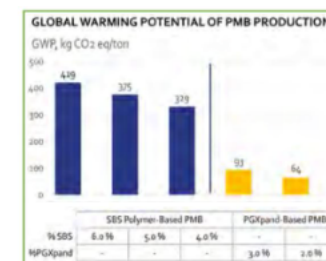


Image: Sripath

Above: Clear performance improvements can be seen when Sripath's additives are deployed.

knowledge, explaining the science and the data behind our products, and demonstrating that our products and technologies are no longer 'new', but have been tested, proven and trusted by our customers worldwide."

LOOKING AHEAD

Rajagopalan says Sripath's focus remains on expanding the reach of its products in the Australian market.

"That's why we've established a strong presence here. We believe the Australian economy is positioned for growth," he says.

"Like any evolving market, there are short-term challenges, but we're confident that in the long-term, Australia's economy and paving industry will grow."

Sripath currently have a robust pipeline of products in development.

"Some are expected to launch within the next six months, while others are scheduled for release over the next one to three years," he adds. "Our innovation strategy always includes a mix of short-, mid-, and long-term projects, all designed with sustainability at the core."

With Sripath leading the charge, the road to net zero is not just possible, it's already being paved. ■