

ADVERTISING FEATURE

Road infrastructure



General manager Sebastien Chatard says SAMI is working to cut bitumen's environmental impacts.

Paving the way with 'greener' bitumen

Bitumen has been an essential, if often overlooked, ingredient of economic development for more than 40,000 years. It is the glue that holds most of our roads together, allowing us to go where we need to be and move the goods that drive our economy.

Despite its crucial role in facilitating transport, trade and social activity, this humble hydrocarbon has been taken for granted for a long time.

But bitumen's profile as a basic building block of society is about to take on a more prominent role as one of the solutions to the growing problem of how to handle some of the waste created by the modern economy.

Bitumen is emerging as a major player in the recycling of used tyres, helping reduce the incidence of tyre mountains and the polluting, dangerous fires they sometimes create. Road-makers are incorporating the crumb rubber from old tyres into their bitumen binders to produce roads that are longer lasting and crack-resistant.

"About 30 per cent of the bitumen products we make are made with crumb rubber from tyres," says Sebastien Chatard, general manager at SAMI Bitumen Technologies.

"It's more than 600,000 old tyres that we are recycling every year."

The crumb rubber is dissolved or melted into the binder that is sprayed onto the surface before the aggregate is added on top and rolled into the binder. This not only recycles old tyres, but it reduces the volume of bitumen needed to make the road.

Chatard says SAMI – founded in Sydney in the 1970s – is a leader in bitumen technology and was

one of the first bitumen companies to incorporate crumb rubber into its road-making products.

Its advanced bitumen technology led to a collaboration with the COLAS group, one of the world's largest road-making companies and a leader in the development of bituminous products. After acquiring a stake in SAMI in 2008, COLAS became the sole owner in 2013.

The acquisition was timely as it guaranteed SAMI a competitive supply of bitumen at a time when Australian oil refining – the principal source of bitumen for decades – was dwindling as the smaller local refineries were closing and giant refineries were being built in Asia. SAMI was, in fact, the first Australian company to see the looming shortage and import bitumen.

COLAS itself built a refinery in Asia, through Tipco Group – in Malaysia – but it only refines the heaviest crudes and focuses only on bitumen products.

"The group gives us the facility to buy bitumen wherever," Chatard says, "but the Malaysian refinery gives us security of supply."

"In future, bitumen will come mostly from specialised bitumen refineries and, thanks to the COLAS refinery in Malaysia, SAMI will become one of the biggest suppliers to the Australian bitumen market."

SAMI has port facilities and bitumen modification plants in Brisbane, Sydney, Melbourne and Perth – a \$100 million investment – and can service the whole country with its fleet of bitumen road tankers.

In comparison to the three other bitumen suppliers in Australia, SAMI is a bitumen specialist

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Sebastien Chatard

that develops its own products in its Sydney laboratory, as well as having access to new products developed by COLAS.

"That is the main difference between them and us, because we are part of the industry in that we have our own collaboration through the COLAS group. So, we bring bitumen and make a full range of products, not just a few products," Chatard says.

"It is extremely important to us to have the best quality product because it's not just a commodity for us, it is not something we just sell and forget about."

"When we blend the bitumen, if the quality is not guaranteed, our own (COLAS) road surface contracting businesses may be undermined," Chatard says. "So, we have to doubly ensure that what we are bringing is of the best quality."

SAMI's work on incorporating crumb rubber into its bitumen-based binders has led to the development of two industry-leading products.

The first is a binder that does not allow the rubber to segregate from the bitumen during transport.

"There are problems with transporting the material long distances, like 2000 kilometres, for example, in Western Australia. SAMI developed a special product to do the job of keeping the crumb rubber in suspension, which reduces the cost," Chatard says.

The second reflects SAMI's focus on minimising the environmental impact of bitumen.

The usual method of applying crumb rubber bitumen is to dilute it with a solvent, usually kerosene, so that it can be easily sprayed onto the prepared surface. This means that the kerosene then evaporates off into the atmosphere.

"So, SAMI made a product that can be used without kerosene," Chatard says. "One of our major customers has reported a 30 per cent reduction in the use of solvent in its road-making."

"And it's not just in financial savings, because we are more concerned about the environment and sustainability. A certain portion of that kerosene is affecting greenhouse gases."

SAMI is also working on mitigating bitumen odour emissions and parent company COLAS has developed a carbon-neutral binder that will be available to SAMI in future.

"SAMI not only manufactures the products, it delivers them. We supply the entire range of products. We are the only one-stop shop for bituminous binders in Australia."

 An advertisement for SAMI bitumen. It features a large, multi-axle tanker truck with three large cylindrical tanks, parked at night. The truck is illuminated by its headlights and the ambient light of the scene. The SAMI logo is visible on the side of the tanks. The background is dark, suggesting a night setting.

TIMES CHANGE. WE HAVEN'T.

Even though time moves on, technology improves and regulations change, some roads are just meant to last. We continue to supply Australian grade bitumen from consistent sources better than anyone else in today's challenging climate.

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