

Dust management, Features, Hazardous materials, Surface operations

## A Super dust control solution

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Superchute and Mincore are teaming up to help mining and industrial sites tackle dust at their stockpiling and loading applications.

From preventing silicosis to protecting neighbouring worksites to minimising valuable product loss, there are a lot of reasons to take dust suppression seriously.

And few take dust control more seriously than Mincore, a local provider of engineering, contracting and equipment-supply services to the resources industry.

With over 25 years in the industry, [Mincore has an arsenal of solutions](#) at its disposal. One of its most impressive is [Superchute, a dust control system](#) for bulk material handling.

At many mines and quarries, as well as other industrial facilities around the country, conveyed material freefalls from the end of conveyors to the stockpile below. This material stream can generate a considerable amount of dust, often exacerbated by local wind conditions.

That's where Superchute comes in.

One end of the Superchute is fixed to a stockpiling conveyor, and the body of the chute extends to nestle onto the stockpile below. The telescopic interlocking design with a flexible bottom skirt creates a sealed path through which material can fall, dramatically reducing dust from the stockpiling operation.

Dust in this situation often contains silica, heavy metals or other potentially harmful minerals, which can add significant costs if carrying through the facility or operations, and can negatively affect long-term health of people working there.

"With Superchute, even on a windy day all you're getting is a minimal amount of dust at the stockpile itself," Mincore general manager John Tusa told *Safe to Work*.

"By mitigating dust, the health of the workers is protected."

Beyond significant benefits in guarding the physical health of workers, effective dust suppression also comes with a number of operational advantages.

"Dust can get into electrical equipment and machines and can block filters and cause premature bearing failures," Tusa said.

"Ventilators for electrical rooms can become blocked, which causes all sorts of problems with the electricals."

All of these issues add up and can ultimately sting operators in terms of maintenance downtime and clean-up.

"There are very real cost consequences to leaving dust uncontrolled," Tusa said.

Aside from clogging machinery, dust can disperse widely across natural and built-up environments, causing significant issues with neighbours and regulators.

One of the Superchute's key features is the automatic operation mode, which allows the chute length to adjust automatically, thereby maintaining close contact with the top of the stockpile.

In automatic mode, the Superchute will lower itself down from the gathered position until the skirt encapsulates the top of the stockpile. This discharge skirt at the bottom end of the Superchute creates a seal to prevent dust-laden air from escaping into the environment. The chute will then incrementally raise itself as the stockpile grows, allowing the skirt to remain in contact with the stockpile.

Mincore's engineering expertise, coupled with Superchute's flexibility as a manufacturer, allows the product to be expertly tailored to a range of different applications.

"Superchute has a team of flexible designers with considerable experience across a broad range of installations," Mincore business development manager Clive Higgins said. "They're capable of adjusting the design to suit different needs."

"In mining applications, the Superchute system is typically constructed from ultra-high-molecular-weight polyethylene, which offers a superior wear resistance, with very low surface friction, high impact strength and excellent corrosion resistance."

The telescopic design means sections of the chute can be added or removed to suit the particular operation, making it ideal for almost any height of stockpiling operation, and for ship-loading operations. And a fast turnaround of 4–5 months for delivery of customised Superchutes means site operators can solve their dust issues quickly and with ease.

The Superchute is being used in mining and quarry operations all around the globe, including in Australia at a Boral cement plant in Geelong, Victoria.

Boral, one of the biggest names in the Australian building materials industry, was looking at ways to improve its recently built Geelong operations. In the design phase for this cement grinding and blending plant, the managers at Boral wanted to be proactive about mitigating dust for its ship-unloading gypsum stockpile, so they contacted Mincore for a solution.

"Having a discharge height of approximately 30m above Boral's gypsum bunker floor, this Superchute is designed to span the full height, containing the gypsum within the close-fitting telescopic chute sections, which otherwise would be releasing significant dust throughout the freefall down to the stockpile," Higgins said.

"With the help of the Superchute manufacturing team, we worked with Boral in the design and installation of this gypsum stockpile Superchute, tailoring it specifically for the site."

"Boral took the initiative in assessing dust suppression options, anticipating that the gypsum stockpile feed would be prone to release significant dust even in light winds."

"Choosing Superchute for this operation was a key strategy."

The next step for Boral in terms of the gypsum Superchute is to tackle the dust generated at the actual stockpile surface. This is being addressed over coming months by introducing a larger skirt and automating the operation of the Superchute

In addition, Mincore and Boral are currently evaluating the installation of an additional Superchute to handle a ship-unloading stockpile for fine granulated slag, a more abrasive material than gypsum, to similarly mitigate dust from its stockpiling operation.

Superchute is also set for a gold mine operation in WA, with Mincore currently working through the final stages of the design process with the customer.

"The client has a large stockpiling conveyor operating at 800 tonnes per hour, but the issue they were facing was that the conveyor couldn't support the weight of the Superchute without some changes to its design," Higgins said.

"We went through a long sequence of exploring other options. We considered high-pressure fogging sprays, wind walls, wind fences and adding water to the material being stockpiled – but each alternative can create problems of its own."

"The client has ultimately come back to the Superchute as the equipment of choice, noting that nothing will really suppress the dust like the Superchute will."

"When it comes to dust suppression, the Superchute's design and its ability to contain the dust at its source is just superior to anything else."

Mincore is in the process of firming upgrade design options for the conveyor structure to support the weight of the Superchute.




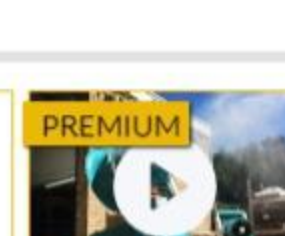








Outside of Australia, Superchute is supplying its highly regarded equipment solutions globally, with Superchutes helping a wide range of operations to suppress dust in Singapore, Canada, Norway, the US, and beyond.

The Superchute system, under the local guidance of Mincore's engineers, is helping mine and quarry sites around Australia keep a leash on dust. The precision modular design is helping to keep workers safe and sites virtually free from stockpile-dust-related issues.

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