



## WINGFIELD ASPHALT PLANT, SA, AUSTRALIA

CASE STUDY

# Australia's first Alimak SC-45 industrial elevator is installed at Downer's new Wingfield Asphalt Plant

Access anytime, anywhere

**ALIMAK**

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Australia's first Alimak SC-45 industrial rack and pinion elevator is installed on Downer's new state-of-the-art Wingfield Asphalt Plant. Alimak worked closely with Downer, engineering the SC-45 elevator to fit the plant's pre-designed vertical elevator shaft.

### A 'FIRST OF ITS KIND' ASPHALT PLANT

Construction of Downer Infrastructure's Wingfield Asphalt Manufacturing Facility was completed in June 2013, with the new facility designed to replace two 40-year-old plants nearing the end of their operational lives.

The manufacturing facility is the first of its kind outside of Europe, and marks a new benchmark in asphalt manufacturing in Australia, incorporating the latest recycling and process technology to reduce energy consumption, lower greenhouse gas emissions and reduce Downer's carbon footprint. Located in Adelaide, South Australia, the new Wingfield plant will have the capacity to produce asphalt mixes with up to 75% reclaimed asphalt pavement material (recycled road).

### PROVIDING ACCESS TO THE BATCH PLANT

In August 2013, Alimak completed the installation and commissioning of an Alimak SC-45 industrial rack and pinion elevator on the manufacturing facility. Located on the batch plant, the Alimak SC-45 will provide personnel access and materials transport to the 5 levels of the plant structure, reducing crane lifting requirements and improving safety of operations on site.

### MEETING PRE-DESIGN REQUIREMENTS

In designing the Wingfield Asphalt plant, Downer enlisted the design capabilities of the Amman Group, a European company specializing in the design and construction of standardized asphalt mixing plants. As the plant structure had been pre-designed to a template, an allowance for only a small 500kg materials-only hoist had been specified into the initial designs.

Alimak's challenge was to fit an Alimak industrial elevator, capable of materials and personnel transport, into the existing elevator-shaft design. In doing so, Alimak engineered the elevator to meet all structural load calculations provided for the pre-designed 500kg hoist, while ensuring compliance with Australia Elevator Standards (AS 1735: Part 9).



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## A FIRST ALIMAK SC-45 IN AUSTRALIA

To meet these requirements, the Alimak SC-45 industrial elevator was selected. As the first SC-45 installed in Australia, the elevator was chosen for several reasons:

- A 1300kg capacity would reduce crane requirements during the lifting of replacement parts on the plant;
- A car size of 1.4 m x 2.4 m would accommodate the dimensions of an emergency stretcher, improving site safety and emergency response;
- The flexibility of the SC-45 design allowed it to be easily configured to fit the pre-design requirements and load calculations of the plant.

## A 'VIRTUAL SHAFT' SYSTEM

Based on a one-size-fits-most-applications design, the Alimak SC-45 is perfectly suited for installation on new plants and retrofitting to existing structures. To meet the structural load calculations of the 500kg materials hoist template, Alimak designed the SC-45 elevator ties and fixings so that no more than a 6kn load would be placed on the existing structure.

Alimak used the Wingfield plant's existing stair tower for the fixing of the mast ties and brackets, while a vertical pipe enabled the elevator to be set back from the landings for better access. It is this unique 'Virtual Shaft' system that enables the SC-45 elevator to be installed quickly, with minimal work required to existing infrastructure.

## AN ALL - WEATHER MAINTENANCE ACCESS SOLUTION

While much of Downer's Wingfield Asphalt Manufacturing Facility is automated, routine maintenance and inspection of equipment is conducted daily. The Alimak SC-45 industrial elevator provides a safe means of gaining access to the upper levels of the batch plant in all weather conditions, and reduces crane lifting on site for the movement of replacement parts and equipment.



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### ELEVATOR DETAILS

Location:	Wingfield Asphalt Manufacturing Plant, SA, Australia
Product model:	Alimak SC-45
Application:	Asphalt plant, maintenance elevator
Capacity:	1300 kg
Car size:	1.4 m x 2.4 m
Speed:	0.6 m/sec
Lifting height:	24m



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