

Product Handling - Cement

Industry

Cement

Application

1-on-2 with on-line switching and 1-on-1 transfers

Material

Cement Clinker and Limestone

Objective

- Increase liner wear life
- Reduce downtime
- Reduce dust
- Replace worn chutes

Transfer Detail

The 1-on-2 system features a 6.1m vertical drop and utilizes a rotating hood that delivers material from a 91.5cm feed conveyor onto either a 91.5cm or 137cm receiving conveyor.

The 1-on-1 system features a 3.05m vertical drop height transfer and moves material from a 137cm feed conveyor onto a 91.5cm receiving conveyor.

Challenge

Upon initial review, the engineers encountered several problems with the design and operation of the old system. It produced significant airborne dust—primarily from the handling of clinker. The presence of elevated dust levels resulted in hazardous working conditions.

Another key issue was liner wear. Before installation of the solution, liners were repaired or replaced frequently.

Additionally, the old system utilised a bag house dust collection system that did not function properly because it was overloaded and it required constant maintenance.

Tasman Warajay Solution

A solution was designed, fabricated, and installed into both transfer point solutions. This provided better material flow and addressed the facilities problems.

A key factor in the new system is the use of tungsten carbide liners in combination with the new chute design method of minimising impact. This greatly reduced wear life for these systems.

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Result

Between 2011 and 2015, over 10,000,000 metric tons of material has moved through the chute with only minimal routine upkeep and without any liner replacement. This is a significant improvement when compared to the original transfer chutes, which required excessive repair on a yearly basis.

Also, the system has virtually eliminated dust generation and spillage. Maintenance time and costs are significantly reduced, and the bag house system is now able to function as intended to remove the small amounts of dust generated by the new system. Working conditions in the area of the transfer are significantly improved. The system is operating trouble free.

One major indicator of success is that this facility decided to partner with Tasman Warajay again and has plans to install another transfer chute.

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