

Significant reduction of dust and noise health issues by implementing pneumatic conveying solutions

The challenge

- The factory located in Slovenia produces non-combustible mineral boards, and is part of a global German group.
- The company experiences significant health issues with dust and noise from its conveying belt when transporting vermiculite from the silo to the production.
- The mechanical belt also generates a high level of noise with an extensive affect at the working conditions.
- The transport of expanded vermiculite generates heat under conveying and necessitates a cooling system. That's both costly and occupying unnecessarily space leaving less room and flexibility for production lines.
- Conveying belts requires a significant maintenance to the mechanical conveying line which will grow during years.

Facts

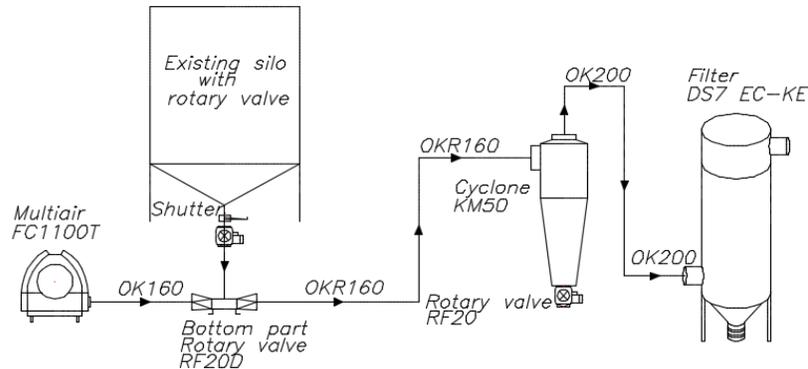
- Material: Expanded vermiculite
- Dimensions: granulate max Ø 3mm, grid max Ø 1mm
- Material temperature: approx. 200 °C
- Bulk density: approx. 100 kg/m³
- Conveying distance: H: max 8 m. V: max 6 m



The previously conveying belt solution.

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The solution



- The Kongskilde pneumatic conveying solution is a standard and modular solution built to the specific needs of the factory in Slovenia to control dust and noise.
- The solution consists of a Multiair 1100T blowing the vermiculite into a cyclone KM 50 through piping OKX160. The dust is controlled by the filter DS 7.
- Most of the horizontal pipelines are mounted in the ceiling and OKR 160 bends are built into an existing installation channel. This enables use of space previously used by conveyor belts.

The advantages and benefits

- The pneumatic solution has a considerable positive effect on the health and safety working environment with dust under control. Cleaner space area without dust brings better working conditions and less risk of work-related diseases .
- The noise reduction is also of significant importance for the health of the workers at the conveying lines.
- The new generation of blowers consumes less power due to the frequency converter, that automatically adjusts to the amount of bulk material transported. The high speed in the Kongskilde system and the inability to retain heat makes the cooling effect to another cost saving feature.
- Less need for maintenance of the pneumatic conveyor solution and even less need for cleaning the factory without the dust gives a net cost saving.
- High flexibility and the modularity means easy setup of the pneumatic conveyor solution which can be accomplished in a few hours. And with the pipes mounted in the ceiling it liberates floor space for other use.