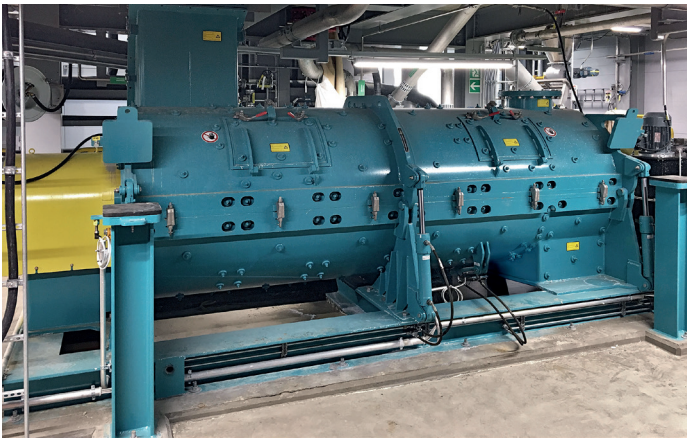


TREATMENT OF MINE WASTE AND TAILINGS



- Tailings treatment
- Continuous operation
- High throughput capacities
- Low dwell times
- Low maintenance and good access
- Easy cleaning due to the split design





To meet the requirements of Agnico Eagle Finland Oy, some adaptations were made to a horizontal Ploughshare® Mixer of the type KM 4200 DW.



Lödige Ploughshare® Mixer for batch operation type FKM 1200 D

Continuous mixer in use in Europe's largest gold mine

Ploughshare® Mixer with application-specific design

Lödige Process Technology has been producing mixers for various applications for 85 years. To meet the requirements of the Finnish customer, some adaptations were made to a horizontal Ploughshare® Mixer of the type KM 4200 DW:

The drum is designed with an axial division, facilitating hydraulic opening for high-maintenance work. This permits easy access to the entire mixing compartment, making it easy to clean.

Due to the pasty to liquid consistency of the mixed materials, the greatest challenge was secure sealing of the machine. Lödige solved this problem by developing a new sealing system for pasty, sludge-like products.

In addition, the Lödige mixer is characterised by low dwell times and high throughput rates, as a continuous intensive mixer KM 4200 DW permits throughput rates of 86 m³ per hour.

Well-established mixing principle

The continuous Ploughshare® Mixers operate on the principle of a mechanical generated fluid bed introduced by Lödige to mixing technology. In a horizontal, cylindrical drum, the Ploughshare shovels rotate close to the walls.

The circumference speed and geometric shape of these mixing tools is designed so that they throw the mixing components from the product bed into the free mixing compartment and lift them off the drum wall against the centrifugal force. This generates a mechanical fluidised bed, in which the entire product mixture is constantly gripped, resulting in extremely thorough mixing, even with high mixture throughput and short dwell times.

The mixing elements are shaped to ensure continuous product transport. The solution developed for Agnico Eagle Finland Oy is not just low-maintenance and efficient; the intensive mixer is also characterised by its highly sturdy.

Simple, quick cleaning for high-maintenance applications

It goes without saying that this process generates huge volumes of mill tailings. These tailings are then mixed with water and cement and pumped back into underground cavities created by the gold mining process.

The special challenge of this process: The mixture of mill tailings, water and cement hardens very quickly. However, many continuous mixers are full of areas in which materials can accumulate. Before now, removing these deposits was extremely time-consuming. For this reason, Agnico Eagle Finland Oy started to look for an efficient, long-lived solution for mixing mill tailings, which also had to be particularly easy to clean without any remaining residue.

Conclusion

Agnico Eagle Finland Oy requires an easily cleaned, low-maintenance mixer with a high throughput rate for its mines. Lödige's continuous Ploughshare® Mixer KM 4200 DW is a sturdy solution that is perfectly adapted to the requirements of the company's Finnish location. The machine's automated, folding mixing drum top section, which permits easy and thorough cleaning, and its high throughput rates of approx. 86 m³ per hour make it an excellent choice.