



Enhancing Kelly Filter Life and Improving Worker Safety In Australian Alumina Plant

CHALLENGE

The production of Alumina from Bauxite is the first-step in aluminium production and manufacturing. Kelly Filters – and vertical leaf filters - are an important part of the solution set used in alumina plants' filtration processes, under high pressure and temperatures.

An Australian Alumina refinery approached us to see if there was a way to improve their important Kelly Filter operation and bag handling. The alumina refinery had increased the green liquor alumina-to-caustic (A/C) ratio to improve production yield. This unfortunately led to an increase in scale formation during clarification. Scale built up with each filtration cycle, eventually causing a reduction in the filter media permeability to the point where the set point liquor flow could no longer be sufficiently maintained.

The Alumina refinery was looking to reduce the scale build up especially where the filter attached to the filter frame. They were looking for a solution that would increase filtration equipment uptime and improve worker safety.

SOLUTION

Micronics – and its trusted SOLAFT® teammates in Australia - developed a custom-engineered fabric for the top section of the Kelly Filter, specifically to reduce the rate of scale formation under the lid of the filter vessel.

This resulted in extending the safe operating life of the filter media, minimizing filter leaf removal hazards, and reducing pressure leaf filter vessel down time. With this unique solution, the use of pneumatic tools has been eliminated, considerably reducing the hazards posed to operators.



SOLUTION

Our outstanding technical team worked with the on-site engineer to trial the newly constructed SOLAFT® Kelly Filters. After a successful trial, the new Kelly Filter was put into full production.

The benefits of our custom SOLAFT® Kelly Filters solution to the Alumina refinery included:

- 10-20% increase in filter life
- Up to 10% increase in equipment uptime
- Considerable improvement in worker safety

Our SOLAFT® Kelly Filters solution was a success in this Alumina industry application, providing the needed increase in equipment uptime and improved worker safety.

Around the globe, you can rely on the Micronics Engineered Filtration Group to be your trusted source for solving liquid filtration and dry filtration challenges.



The Micronics Engineered Filtration Group is the premier company in the alumina and aluminium industries for addressing all your filter media, filtration equipment, service, and parts needs - liquid and dry filtration. We have been partnering with the alumina industry since the 1960s and are proud to work with many of the largest and most sophisticated alumina producers in the world.