

Q&As with Eriez chief executive Lukas Guenthardt

With processing technologies for comminution and ore sorting coming much more into focus in the mining industry, Mining Magazine wanted to check in with how one supplier is doing things, and what the future of processing looks like

Comminution, ore sorting and pre-concentration is not just a significant piece of the total mining picture, it is among the most cost-intensive. Mine operators seek efficiency more than ever, and suppliers are working constantly to match and exceed that need. MM recently spoke with new Eriez chief executive and president Lukas Guenthardt about this issue, where Eriez stands and what the future holds.

Q What is the most impactful thing Eriez has done to improve comminution, ore sorting and pre-concentration circuits for mines?

The Eriez team is promoting coarse particle flotation through innovations such as HydroFloat, which allows mining companies to separate ore from rock at a much coarser size than conventional technology. This aids in reducing comminution energy and capital requirements.

Newcrest's Cadia operation in New South Wales, Australia, is already benefiting from this approach. Eriez will soon be adding several additional full-scale demonstration plants that it will run with other companies based on this technique.

Q In your opinion, what is the greatest innovation Eriez has introduced? Why is it so different from what others are doing?

Eriez has introduced two technologies for reducing the mining footprint: HydroFloat and StackCell. Both technologies were developed with primary consideration for principles of flotation rather than incremental improvements of existing technologies.

The HydroFloat enables an improvement in ore recovery and a reduction in four areas: comminution,



tion, conventional flotation, water use and fine tails generation.

The StackCell is a high-rate mechanical cell that uses the 'two-stage' approach to reduce the amount of flotation time by a factor of five, allowing the concentrator circuit to be 'shrunk'. Preliminary benchmarking shows a StackCell rougher flotation circuit would have a footprint that is 50% less with 40% reduced need for electrical power compared with a conventional flotation circuit.

Since almost all capital and operating costs scale with footprint, the StackCell can greatly reduce a miner's costs to build and operate these plants. StackCell accelerates the flotation process so that it can be condensed into approximately 20% of the working volume of conventional flotation units.

Q How does Eriez work with customers to respond to their commitments to ESG —

environmental, social and corporate governance issues?

Our customers are on the leading edge of improving the mining business in terms of energy and water intensity. We support these initiatives by working closely to improve the equipment as well as the technology around how the equipment fits into our customers' flowsheets and operations.

Eriez customers are very motivated to improve ESG and excited about breakthrough technologies; Eriez's HydroFloat and StackCell will make step-change improvements in these areas. Eriez' technical staff works closely with customers to develop and perfect applications using these technologies.

For example, the use of the HydroFloat can reduce the amount of fine tailings and water sent to storage facilities by 30% or more, we have found, substantially decreasing environmental and safety costs and risks.

Eriez Flotation industrial HydroFloat CrossFlow copper installation

Q What do you believe does the future hold for the mining industry? How is Eriez preparing for what lies ahead?

The mining industry is heading towards more efficient operations, achieving its output with operations

that have a much-reduced footprint regarding the use of energy, materials, water and the environmental impact.

At a time when mining suppliers are merging, centralising their technical groups and outsourcing test work, Eriez is hiring technical experts that reside in all of our major market

areas. The key to our success is local technical expertise and support.

We are also increasing our lab capabilities in the US, since we have found that it is an excellent way to demonstrate our equipment and build close collaborative relationships with customers. ♥

HydroFloat's key role in environmental and economic stewardship

Earlier this year, Eriez shared with MM information on a paper the company plans to present at a trade show in Toronto, Canada, in August on coarse particle flotation (CPF) circuit configurations.

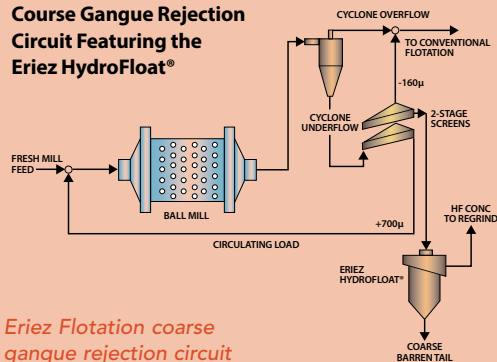
The paper, "Novel Technologies for Environmental Footprint Reduction in Mineral Processing Operations," compares two popular CPF configurations that use resources and data from an existing medium-scale polymetallic concentrator in Mexico.

"The study considers benefits in terms of improvement in metal recovery, reduction of fine tails and water entrainment in tails, reduction in grinding energy, reduction in conventional flotation and possibilities for increasing plant capacity with existing capital assets," Eriez researcher Eric Wasmund says.

Eriez has already seen results from this work. "The 'tail scavenging' application has already been commercialised by a number of companies," Wasmund notes, also pointing to its own application of CrossFlow and HydroFloat.

"This configuration allows an incremental recovery of about 80% or greater of the top three pay-metals occurring in the final plant tail stream at a size greater than 160 microns. In the 'coarse gangue rejection' application, the HydroFloat is used as an ore-sorting technology and permanently removes 30% of the plant feed as a coarse barren tail prior to conventional flotation."

Course Gangue Rejection Circuit Featuring the Eriez HydroFloat®



Eriez Flotation coarse gangue rejection circuit

He says Eriez estimates fine tails in this method could be minimised by 30%, replaced instead with a similar mass of tailing material that is greater than 500 microns. In that, less water would then be sent to the operation's tailing storage facility (TSF).

"Grinding energy in the ball mill could be reduced by 30% to 50% and conventional flotation capacity could be reduced by 40%," he says. "In a brownfields application, de-rating the mill power and conventional flotation requirements could allow a significant increase in plant throughput without adding additional conventional equipment."

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