

GLENCORE TECHNOLOGY

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Flotation 2017 in Capetown And How Jameson Cells Deliver More Concentrate Per Dollar, Per Metre and Per Year

The 350th Jameson Cell was recently installed and it remains the most effective flotation technology in the world. The reason lies in the bubbles. The Jameson Cell consistently delivers smaller bubbles, creating more surface area for ore to collide with and attach to. So the amount of concentrate a Jameson Cell produces is consistent, impressive and unequalled.

Our own Virginia Lawson is presenting a paper on the Jameson Cell in Capetown for “Flotation 2017”. Here’s a little of it, below. And to request the full piece, simply email jamesoncell@glencore.com.au and ask for a copy of the *Flotation 2017 Paper*.

Small bubbles are one of the key drivers of good flotation performance because they improve reaction kinetics. It’s important to have high collision and attachment efficiency as well as high froth recovery.

The Jameson Cell combines these with its small footprint, efficient froth washing and low maintenance. Cleaner circuit design is using the Jameson Cell to improve circuit performance. And hybrid cleaner circuits represent a significant opportunity to improve metallurgical performance, reduce plant footprint and simplify plant flowsheets and operations.

The Jameson Cell produces finer bubbles courtesy of the shear action of the plunging jet in the downcomer. These fine bubbles increase the flotation kinetics and give high recoveries of both coarse and fine particles in a single stage.

Brownfield expansions of cleaning circuits with Jameson Cells have been very successful. In most cases the original cleaner circuit design wasn’t enough to remove the required amount of concentrate over the range of feed grades and process plant capacity.

The capacity limitation was often for concentrate removal rather than residence time due to varying head grades and tonnages in SAG circuits where high head grades often result in the highest tonnages treated.

But installation of a single Jameson Cell at the head of the cleaner circuit effectively doubling the cleaner circuit capacity has been shown to work. In more recent applications the use of Jameson Cells to remove all of the concentrate has effectively increased the concentrate grade by minimisation of misplacement of fine gangue.

In comparing a single Jameson Cell against a 100m³ tank cell or a set of 3 columns, the concentrate output was dramatically improved by the Jameson Cell... 76.5 tonnes against 22.3 and 35.3. *[More figures in the full paper]*

In a case study, since commissioning in late 2015 the operation of a new circuit improved both the grade and recovery of the copper concentrator. The plant performance improved and achieved all of the objectives of grade and recovery with 70% less residence time than the old cleaner circuit.

To get the full paper, email jamesoncell@glencore.com.au today.

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