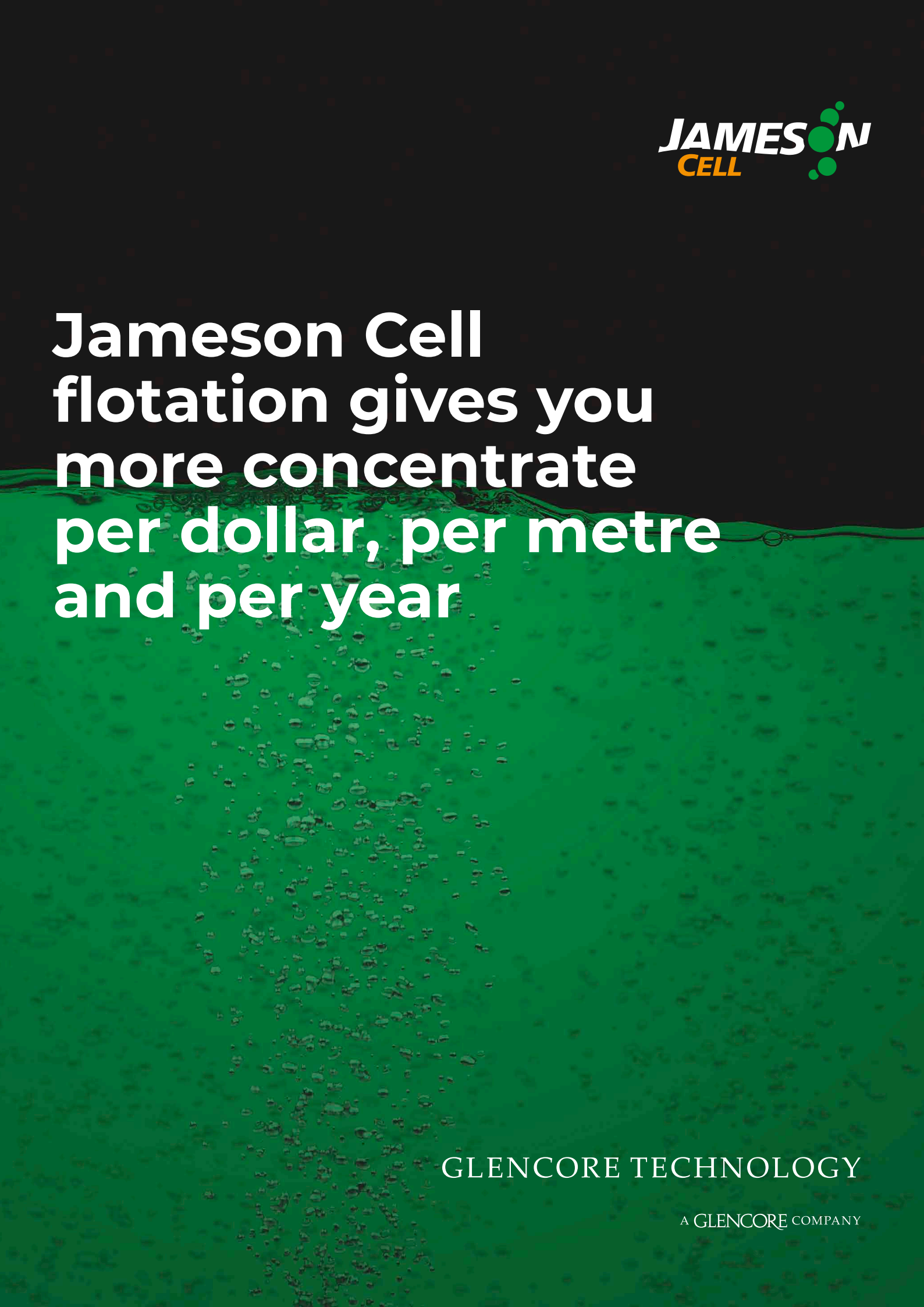
JAMESON CELL

Jameson Cell flotation gives you more concentrate per dollar, per metre and per year



GLENCORE TECHNOLOGY

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“The Mount Isa Copper Concentrator has operated two Jameson Cells in pre-flotation and slag cleaner duties, very successfully, for over 15 years. In 2015 we installed three 18 downcomer Jameson Cells to replace the cleaner circuit. We’ve seen significant improvements in operability and maintenance intensity translating to improved recovery at a reduced cost.”

– Mount Isa Copper Concentrator, Mount Isa Mines

Jameson Cell at a glance

- → Real-world success in 431 installations across 30 countries since launching in 1988
- → It creates the smallest bubbles of any flotation cell, to deliver the best grade and recovery
- → No moving parts for maximum availability and easy maintenance
- → Strongest performance guarantee in the world
- → 100% scale-up reliability

JAMESON CELL

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Jameson Cell is the most effective froth flotation technology in the world and the reason is in the bubbles

The Jameson Cell creates smaller bubbles than any other flotation cell, so it creates more surface area for the particles to collide with and attach to – six times as much! Jameson Cell Flotation gives you more concentrate per dollar, year after year.

Jameson Cell has been used and proven in base and precious metals, coal, industrial minerals, oil sands and solvent extraction. There were 431 Jameson Cells installed around the world by the beginning of 2022.

The Jameson Cell has no moving parts, so it delivers reliable froth flotation with a promise of 99% availability. It's so predictable that it's guaranteed to deliver 100% scale-up performance, across all applications.

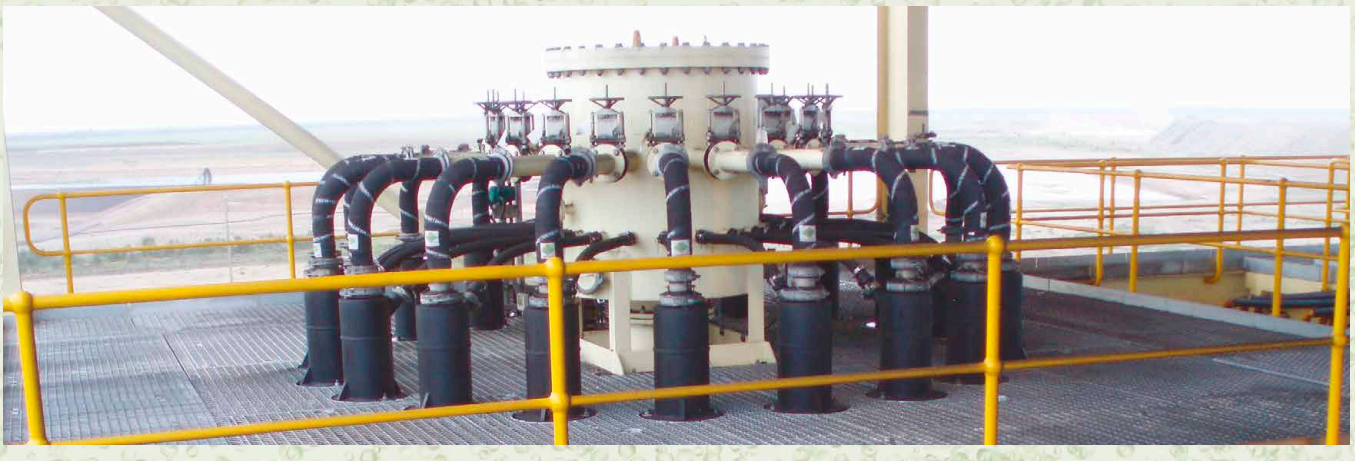
The Jameson Cell is smaller than many flotation cells because it doesn't need a long residence time. The Cell's downcomer sees feed pumped under high pressure to shear and entrain air from the atmosphere into fine bubbles. Particle to bubble interaction happens immediately in the downcomers high shear mixing zone.

Jameson Cell designs are flexible so they're ideal for any new project and a great option for low cost plant expansions. They're easy to install, very easy to operate, deliver excellent availability and are simple to maintain.

The inclusion of a recycle mechanism means the Jameson Cell is also very tolerant of feed variations, so they're made for the real world.

Glencore Technology provides accurate Jameson Cell design and scale up, engineering, manufacturing, flotation circuit design and review, installation support, cell commissioning and ongoing technical support.

A Jameson Cell is the most risk-mitigating and reliable froth flotation system you could buy.



How Jameson Cell delivers more concentrate and reduces risk for your project

1. More accurate scale-up

The Jameson Cell is proven in the real world. The hydrodynamics for particle collection inside the Jameson Cell are identical between laboratory, pilot plant and full scale Jameson Cells, so scale up is direct, proven and guaranteed.

For that reason, choosing a Jameson Cell for your flowsheet significantly reduces project risk. When you choose a Jameson Cell, the scope includes process and design, supply and commissioning by experts with real-world experience, for easy installation by a local contractor or EPCM.

2. Easier installation

There are no rotors, compressors or blowers to install, operate or maintain. There are no moving parts in the cell, and the only other equipment is a feed pump, so the Jameson Cell is quick and simple to install.

Your Jameson Cell undergoes a full trial assembly prior to delivery to your site. All the parts fit perfectly together during plant installation, making the whole process straightforward.

3. Simple operation and rugged tolerances

After installation, start up and commissioning is even simpler – it only needs the feed pump to operate to the designed flow and pressure. Commissioning is simple and the cell will reach design capacity quickly.

Your Jameson Cell will be sized to accommodate the design flowrate based on the number of downcomers. The tank can be designed to fit into restricted spaces, making it ideal for retrofits/replacement and expansion projects. The construction materials are flexible and your cell can be fabricated to suit your application.

4. Smaller bubbles and more concentrate

The Jameson is a step change in flotation efficiency. Feed is pumped into the downcomer, creating a high-pressure jet that entrains air. That aerated jet plunges into the slurry, where the kinetic energy of impact breaks the air into fine bubbles which collide with the particles, carrying them into the froth phase.

Those bubbles are smaller than other flotation systems, creating six times more surface area for the particles to attach to.

The rapid kinetics mean the Jameson Cell simply needs contact and not residence time, so it's much smaller than equivalent mechanical and column cells and fewer units are required.

The grade of the concentrate is controlled by froth drainage and froth washing. Your Jameson Cell ensures an efficient, quiescent zone that maximises froth recovery, and is perfect for froth washing. The high carrying capacities mean you can process large tonnages in a small volume.

5. Easier operation and maintenance

Your Jameson Cell quickly reaches equilibrium and can continue operating if feed supply is interrupted.

Automatic tailings recycle eliminates fluctuating feed flow, to give you constant flow, consistent performance and a simple start-up.

The cell operates at a constant feed pressure and the hydrodynamic action inside the downcomer, essential for particle collection, is always consistent.

Maintenance is rare and simple. The highest wear component, the slurry lens orifice, has a wear life of more than five years! Downcomer maintenance can be performed while the cell is operating and takes less than 10 minutes.

How we help you get more from your Jameson Cell

Commitment in a partnership

The Jameson Cell was developed and proven in real world mining applications, so we've built up a suite of services in a Technology Partnership concept.

As a Partner:

- You will have access to training and learning opportunities at real client sites.
- You will always have access to our most experienced technology experts around the world.
- Your team will have opportunities to learn from other users.
- You will have access to service and parts help.
- You will secure an ongoing technical relationship with us.

A strong performance guarantee

Jameson Cell Flotation gives you more concentrate per dollar, year after year.

The commitment and agreement is complete:

- The lab results will scale up, with 100% accuracy.
- Your Jameson Cell will perform at a minimum of 99% availability.
- We will work with you to ensure your needs for feed variability, operations and maintenance will be built in.
- Training and support will be included.

Examples of how others have gained from their Jameson Cell

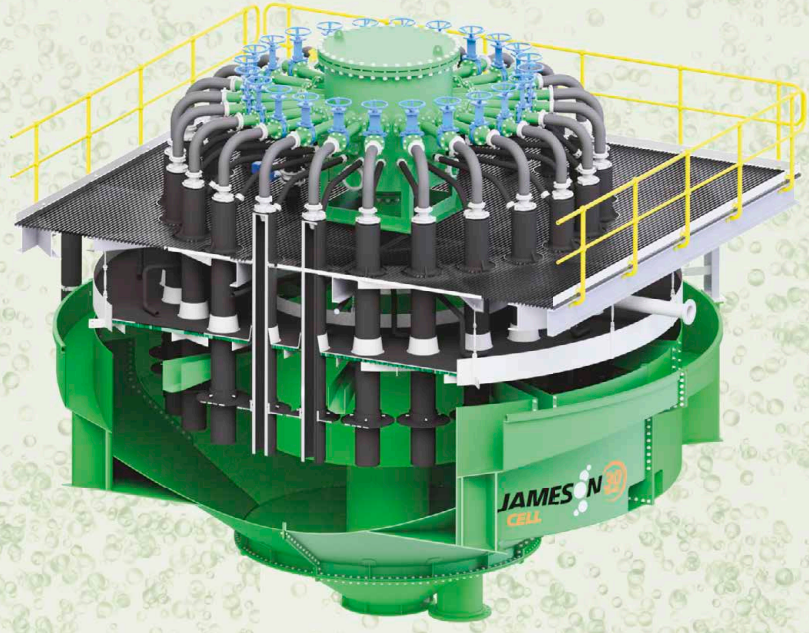
More concentrate, less energy and a broad range of applications

A set of just twelve Jameson Cells at Curragh (Australia) treats over 5 Mtpa of coal fines. Jameson Cells are also installed in coal operations in Africa, North America, Asia and Europe.

A retrofit Jameson Cell at Mount Isa achieved energy savings of up to 76% when it replaced 16 mechanical cells with one Jameson Cell.

The biggest operating cell, a J7250/10 recovering organics from 3,000 m³ per hour of raffinate at Olympic Dam's copper SX plant in Australia, was commissioned in 2003.

There are 431 Jameson Cells operating around the world.



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