Copper Refinery Modernisation in Zambia

Glencore Technology is currently commissioning one of its largest copper refinery conversion projects to date, the modernisation of Glencore's Mufulira Copper Refinery, in Zambia.

The refinery, having a capacity of 220 KTPa of copper, was a copper starter sheet operation, and has been modernised using ISAKIDD™ proprietary technology. As part of the modernisation Glencore Technology has supplied electrode handling equipment including 3 Cathode Stripping Machines, an Anode Scrap Washing machine, and an Anode Preparation Machine. The cathode plates used at Mufulira are manufactured using Glencore Technology proprietary Duplex stainless steel. Glencore Technology personnel also assisted with the detailed design, planning, commissioning and training.

Brendan O'Rourke, Glencore Technology Senior Project Manager, said that Mufulira is now producing LME Grade A Copper. Mufulira is now the single largest user of Duplex cathode plates, which have become the benchmark in electro refining and electrowinning due to their superior mechanical strength and corrosion resistance properties. This results in better flexing performance in the cathode stripping operation, reducing the chance of permanent deformation of the cathode plate blade, resulting in longer cathode plate life

Operator conducting cell inspections

High grade copper cathode production

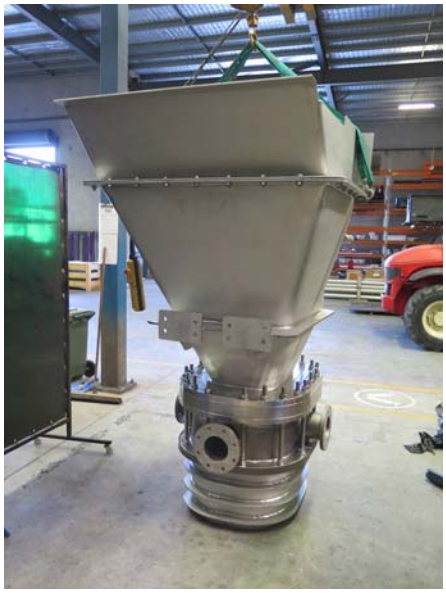
ISAKIDD™

New Feed Port design – for better IsaSmelt™ pressure control

The Mount Isa Copper Smelter, in conjunction with Glencore Technology, has been working towards improving the system that controls the Mount Isa IsaSmelt™ furnace pressure at the port where the feed is added to the furnace. Together they have developed and installed a new Induced Draught IsaSmelt™ feed port which will be offered to all IsaSmelt™ customers.

Previously the Mount Isa IsaSmelt™ furnace was charged with fluxed concentrates which were delivered via conveyor into an open chute at the feed port. This feed port was open to atmosphere, and difficulties in fine control of the furnace internal gas pressures in this region, made it hard to avoid pressure fluctuations during operation, which resulted in poor workplace hygiene.

The inductively sealed feed port makes the internal furnace pressure much easier to control and significantly improve the workplace hygiene in this area. In addition, the inductively sealed feed port lessens the build-up of unburnt concentrate on the vessel wall.



Induced Draft feed port prior to installation

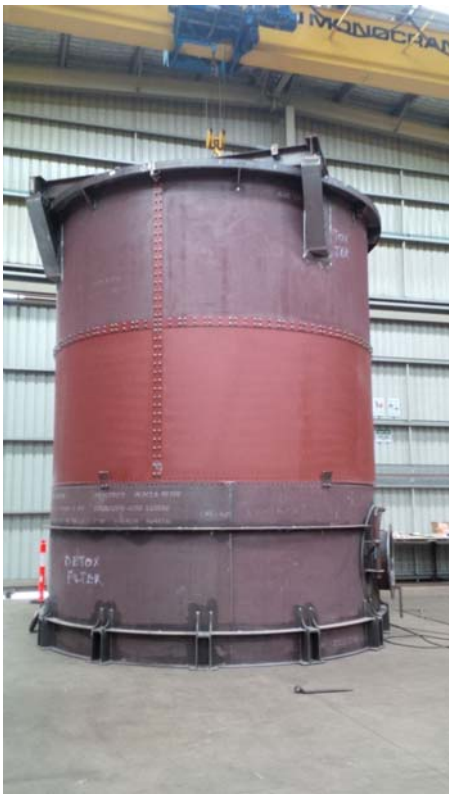
ZipaTanks™ under Construction in the Arctic Circle

Glencore Technology's unique slurry tank design, the ZipaTank™, is under construction at TMAC's Hope Bay gold project, located in the article circle, Nunavut, Canada. The plant consists of grinding and flotation circuits, with the concentrate undergoing leaching to produce gold bullion. The ZipaTanks™ will be part of the leaching circuit.

Paul Voigt Hydrometallurgy Manager at Glencore Technology, said the ZipaTanks™ were well suited to remote and harsh conditions such as Hope Bay, as they were easy to containerise, with the shell, base and associated auxiliary equipment being able to fit in a standard shipping container.

The rubber lined tanks were manufactured, constructed and water tested in Australia under controlled conditions, before being disassembled and packed for shipment. Paul said the volume of the tanks were just over 90m3, and said the tanks were to be used in leach residue storage and detox duties at the site, where cyanide underwent chemical reactions to render it harmless. Each tank is complete with baffles, nozzles, overflows and agitator platforms as well as other equipment suited to each duty.

The ZipaTank™ is designed as a modular slurry storage and agitation system, for rapid site installation with only the tank base requiring welding at site. The rest of the tank and auxiliaries are bolted in place, no specialist skills are required, nor is there any scaffolding required during installation. Lining is applied in controlled conditions out of the elements, ensuring a longer service life than lining applied at site.



Completed ZipaTank™ prior to containerisation to site

ZIPATANK™

Glencore Technology After Market and Specialist Services

Glencore Technology prides itself on being able to supply its clients with a full selection of wear and replacement parts for its current and older technology models. With warehouses around the world, clients are guaranteed on being able to have critical parts delivered to them in the quickest possible lead times.

Glencore Technology also offers a range of specialist services to improve the productivity, availability or maintenance in your plant, ranging from mineral processing to smelting and refining. Backed by first hand operational experience in real plants, Glencore Technology's specialist and experts can assist in getting the most out of your plants. Whether it is operational services, specialist engineering components or designs for items or functions that might be deemed "too hard" by others, Glencore Technology has the experience that can provide you with solutions that work.

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Glencore Technology has the expertise to get the most from your operation.
Whether it is mineral processing, hydrometallurgy, smelting or copper refining and electrowinning, Glencore Technology offer a range of solutions and services that can make a difference.

ISAKIDD JAMESON CELL ISASMELT ISAMILL ALBION PROCESS ZIPATANK HYPER SPARGE

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