

Laboratory experts take sampling to new heights

With the general decline in ore grades in mining, FLSmidth's market-leading expertise in mineral sampling and laboratory automation holds increasing value to mines.

The more you understand about the characteristics of the ore entering your process plant, the better you can treat it," says Martin Matthysen, director, SPA (sampling, preparation and analysis), Sub Saharan African and Middle East at FLSmidth. "But this needs technology that can sample high volumes, maintain rapid turnaround times, and deliver quality results."

Only then can plant operators respond to laboratory data in real time, which is one of the keys to effective plant optimisation. With over 30 years of experience, FLSmidth has been a pioneer in laboratory systems integration, as well as driving automation in the laboratory environment.

"Our particular expertise in laboratory automation is now recognised world-wide," says Matthysen. "This is why we have supplied 95% of all automated laboratories to the global mining industry constructed over the past dozen years or so."

The company's offerings address all stages of mines' sampling and analysis requirements.

It designs solutions for exploration and ore characterisation, grade control, process plants and port shipment. The highest quality equipment is sourced and applied to a laboratory solution to achieve accurate sampling, effective sample preparation and detailed sample analysis.

Each laboratory design is unique, he emphasises, as it must suit each customer's particular operating conditions and strategic goals. The design process therefore demands close collaboration with the customer and a detailed examination of mined material and process demands. This ensures that the laboratory generates exactly the type of analytical data that the plant operators require.

"With our world-class mineral research and testing facilities, we are constantly pioneering innovations that add value to customers," he says. "Our automated solutions also offer consistency and traceability, while improving ergonomics and eliminating hazards to laboratory personnel."

Among the company's innovations has been an environmentally-friendly methodol-

ogy that replaces traditional wet chemistry. With no acid being used to dissolve platinum ore, for instance, the process produces no toxic waste – dramatically reducing the impact on the environment.

"We are accredited in terms of international quality standards, and work strictly



Above: Automated drying of solid samples. Left: Physical analysis including particle size, density and moisture content.

to our customers' stringent specifications regarding health, safety and environment," he says. "Our expertise gives customers the con-

fidence not only to procure laboratories from us, but increasingly to contract us to maintain and operate those facilities on their behalf." □

MBE Minerals' screen footprint grows across commodities

Leveraging decades of industry experience and its in-house design expertise, MBE Minerals has delivered 15 new screens to mining customers in the coal, diamond, iron ore and manganese sectors, strengthening its footprint of vibrating screens across a wider range of commodities.

These operations, which are based in South Africa, Botswana and Australia, will benefit from MBE Minerals' expertise says sales manager Graham Standers. MBE Minerals has also fully refurbished a further four screens to 'as new' condition as they approached the end of their planned lifecycle.

"We place high priority on design capacity to ensure that every screen suits the application and material it must screen," says Standers. "Five of the screens supplied were

newly designed to suit changing customer needs and processes."

Each screen is designed by the company's design office, and the design is then confirmed by Finite Element Analysis (FEA) through highly specialised software using data from the drawing model.

"We have also introduced a range of screens designed specifically for fine coal dewatering, using a design that has proven to be cost effective, efficient and reliable," he says. "Focus was placed on the design of the screen deck support system and screen drive, with a view to reducing downtime by minimising maintenance and enhancing reliability."

The design is efficient in terms of the required spares stockholding, further reducing the screen's overall lifecycle costs.

"Our T-Lock pinless panel fastening system for polyurethane screen panels also significantly reduces the need to hold spares in stock, and reduces the change-out time for screen panels," he says.

Technical and sales staff conduct regular on-site visits to customers to carry out inspections of equipment in operation. The teams report on equipment condition and performance, and provide customers with value-adding feedback and advice.

MBE Minerals – previously known as Humboldt Wedag – has been designing, manufacturing, installing and servicing vibrating screens in southern Africa for over 40 years.

"Our record for reliability is well known, with some of our units having been in service for over 20 years," concludes Standers. □



State-of-the-art automated zinc laboratory at Vedanta's Gamsberg Mine.



Final assembly of an MBE Minerals dewatering screen.



Test run on an MBE Minerals dewatering screen.