Delivery solutions, thickeners, classifiers and the digital future

FLSmidth senior account manager for sub-Saharan Africa region, Ricus van Reenen, talks about the company's range of technical, transportation and assembly options as well as optimal design and delivery solutions devised for the supply of large thickeners, while commercial manager, Terence Osborn, unveils the company's Electra Mining focus.

Finding the optimal design and delivery solution for a large thickener at a remote gold mine in the West African state of Mauritania meant considering a complex range of technical, transportation and assembly options, according to FLSmidth senior account manager, Ricus van Reenen.

The cost of transporting the components for the 50 m diameter thickener was a key factor affecting the design, says van Reenen. He highlights that transportation of components to remote sites can comprise a substantial portion of costs, and that break-bulk shipping costs are significantly higher than containerised transport.

"Given that the thickener components needed to be shipped by sea as well as by road, containers were considered the most economical mode solution," he says. "This requires that the plate sections be cut and rolled in dimensions that can be packed into containers for shipping to site. The structural support sections, such as the I-beams, are fabricated to final stage at our facility and just bolted on site, but the plates need to then be welded by expert welders," he explains.

While bolted thickeners are often more economical to construct, as they obviate the need for extensive on-site welding, this option cannot easily be applied to thickeners larger than 50 m in diameter.

FLSmidth's REFLUX Classifier plant embodies leading technologies as well as the company's innovative business approach.

"For these larger designs, the support structure is erected on site, followed by the welding together of the plate sections from one end to the other," he says. "After the plate sections have been welded to the structure, the welds are sandblasted, primed and applied with a final paint coating over the welded areas."

For FLSmidth's larger thickener designs, the support structure is erected on site, followed by the welding together of the plate sections from one end to the other.

Van Reenen emphasises the importance of the documented assembly procedure applied when erecting these large thickeners. "When supplying a thickener, part of our engineering deliverables includes an installation methodology for the site contractor to follow, to make sure that he implements each stage correctly," he says. He further emphasises that the forces demanded within large thickeners also makes the choice of gearbox drive much more important.

"Smaller thickeners can usually be designed with planetary gearbox drives – available from a number of OEMs," he says. "With large drives requiring higher torque, however, we prefer to use our own ring-gear Dorr Oliver drives, which can reach much higher torque values than planetary drives."

At Electra Mining: REFLUX Classifiers and the digital future

In pride of place on the FLSmidth Electra Mining Africa exhibition stand this year will be a 1:20 scale model of its REFLUX™ Classifier (RC) modular plant, representing – in more ways than one – the future of processing in the mining sector.

FLSmidth and its customers can observe and assess the key operational parameters of a plant in real-time in their respective head offices anywhere in the world.

According to FLSmidth commercial manager, Terence Osborn, the RC plant is a good example of an integrated solution designed to a meet a customer's tailings-related risks and requirements.

"The plant demonstrates how our insights and expertise make us more than an equipment supplier," says Osborn. "Our focus is to bring the value of our technical knowledge base – along with our range of advanced product offerings – directly to bear on improving customers' sustainability and profitability."

The RC plant embodies FLSmidth's leading technologies as well as its innovative business approach. Equipped with advanced automation facilities, a full-size version of this plant is in operation for a mining customer on an outcomes-based toll treatment model. It treats waste product, or tailings, and recovers valuable minerals as a saleable product for the customer, without adding extra workload or risk to its pre-existing operation.

FLSmidth's technical advancement in automation and digitalisation is vital in making these solutions more valuable: both FLSmidth and the customer can observe and assess the key operational parameters of the plant in real-time in their respective head offices anywhere in the world.

Osborn emphasises how much of a priority this direction was for the business: "Our appointment in May this year of a Chief Digital Officer at global group executive level reflects our focus on digital efforts to leverage solutions," he says. "This is key to our corporate strategy in the future and customers will see increasing levels of bottom-line benefit arising from this decision." ❑

Buffalo Reclaim Feeder sizes enhance mines' productivity

FLSmidth Buffalo Reclaim Feeders reclaim stockpiles and deliver ROM material to a conveyor belt, sizer, or other processing equipment. The expanded range of FLSmidth Buffalo Reclaim Feeders allows customers to select the size best suited for their operational parameters, such as varied discharge heights and loading deck lengths. Additionally, the modular design provides optimised adaptability to customers' operations, such as replaceable decks and supports, or even containerised transportation to remote locations.

FLSmidth's manager of capital equipment, PC Kruger, explains: "These modular reclaim solutions add value to any operation because each can be customised to meet specific requirements and tailored to improve productivity."

The FLSmidth Buffalo Reclaim Feeder is a heavy-duty modular solution that aims to improve customer productivity through technology, process knowledge, and safety. ❑