

Increased efficiencies with thyssenkrupp in-pit semi-mobile crushing plants

Global plant engineering giant, thyssenkrupp's production-boosting mobile, semi-mobile and stationary crushing systems assist customers in optimising their comminution processes and increasing their equipment efficiencies.

Rising costs for labour, fuel and consumables and the trend to more stringent governmental regulations and taxation schemes related to greenhouse gases (CO₂ emissions) are the driving force for mining companies around the world to rethink their conventional truck shovel mining methods.

Furthermore, mines and plants have to find ways to process large tonnages of low-grade ore at low costs and in an energy-efficient manner to overcome the many hurdles triggered by a sluggish global economy and low commodity prices, as well as the challenge of depleting higher-grade orebodies. "Because these challenges are accelerating low operational costs and equipment efficiency to the top of most mines and plants' priority lists, we are focussing strongly on service and process optimisation for our customers," says thyssenkrupp South Africa Manager - Minerals Processing, Power and Energy, Dr. Wilfred Barkhuizen.

Dr. Barkhuizen points out that the design of efficient and cost-effective comminution systems requires specific experience but adds that this is where thyssenkrupp's competencies and capabilities take centre stage. The company encompasses more than 100 years of experience in its crushing technology, engineering and design. Continued investment in R&D and close customer cooperation spearhead innovative, state-of-the-art crushing plants that are both energy efficient and economical to operate.

Semi-mobile crushing plants (SMCP) vary in design and capacity to offer different equipment solutions for diverse commodity applications, with output delivery ranging between 200 t/h to 12 000 t/h, depending on the requirement. There are currently approximately 257 thyssenkrupp SMCP installations in operation globally.

“We can supply a SMCP for most in-pit mineral mining applications, depending on the pit planning design,” states thyssenkrupp Minerals Processing Product Manager, Demitri Kokoroyanis. thyssenkrupp’s cost-effective in-pit semi-mobile crushing solutions are well suited for coal and ore applications and can lead to significantly reduced operating and capital expenditure (opex and capex). “In terms of opex savings, our in-pit crushing and conveying (IPCC) systems reduce the requirement for intermittent materials transport; fewer trucks lower diesel consumption, greenhouse gases (CO₂ emissions), fleet maintenance costs and labour,” affirms Kokoroyanis.

The plant’s support on pontoons is designed to accommodate all static and dynamic loads and just require a base allowing for certain ground pressure. In most cases, a bed of compacted gravel is all that is required to ensure a suitable foundation and since the gravel bed is acting like a buffer the plants are particular suitable also for mine sites affected by frequent seismic activity. As a result costly civil work can be eliminated or substantial savings can be realised compared with common stationary crushing plants.

Another benefit is the ability of the SMCP’s to be moved by transport crawlers or self-propelled modular transporters. Usually; after being stationed in one place for a number of years, it can be moved in the mine closer to the actual excavation spot to minimise truck haulage distances. Kokoroyanis adds that thyssenkrupp’s specialist mine planning service offers advice to customers on how best to incorporate an IPCC system.

The fact that machinery is not overly complex and the main system can be connected to and be controlled from the operation room, facilitates equipment monitoring by semi-skilled operators. The IPCC system has a feature that enables it to connect to the global 24/7 service centre in Germany which allows for constant system monitoring.

The slowdown in large new projects has paved the way for an increase in upgrades and optimisation of existing plants. Kokoroyanis and Dr. Barkhuizen add that despite the current state of the mining industry, neither sales nor interest in SMCPs and IPCCs has waned and that they have seen a significant increase in interest in some mining areas on the African continent.

Smaller thyssenkrupp installations for cement and aggregate plants are operational in Central and North Africa and the company is currently assisting the client of a large global minerals company in an existing Zambian copper operation to assemble and install five SMCPs.

/Ends

A full range of specialist engineering and construction services and a shipbuilding history stretching back centuries are the strengths of the thyssenKrupp Industrial Solutions business area. High-quality engineering is at the center of our success. Global project management skills, first-class system integration expertise, reliable procurement and supplier management, and a service offering meeting the highest standards form the basis for lasting customer satisfaction. Around 19,000 employees at over 70 locations form a global network with a technology portfolio that guarantees maximum productivity and cost-efficiency.

More information at: www.thyssenkrupp-industrial-solutions.com

Contact:

Jeanine Arundale - Marketing & Communications Officer
Strategy, Markets & Communication
thyssenkrupp
71 Nanyuki Road, Sunninghill, 2191
jeanine.arundale@thyssenkrupp.com
Phone +27 11 236-1128 / Fax +27 11 236-1125

By: Sonia Laverick – Laverick Media Communications (LMC)
Tel: +27 (0) 11 0400 818 lavmedia@iafrica.com / www.laverickmedia.co.za