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Insights _Polysius



Yamama Cement on track for the future with state-of-the-art cement plant technology.

The capital of the Kingdom of Saudi Arabia is growing fast, and with it the demand for cement. Riyadh's expansion is also the reason Yamama Cement will soon be producing huge quantities of cement at a desert site 80 km east of the capital. Here, there are suitable limestone deposits and enough space for a state-of-the-art cement plant. thyssenkrupp is the EPC contractor for the new cement complex.

The dimensions alone are rather special: a total annual capacity of 6.6 million tons of clinker and 7 million tons of cement from two production lines; 68,000 tons of deliveries; 43,500 tons of structured steel, 305,000 m³ of concrete; a perimeter fence 13.8 km long. Yamama's new cement plant will have its own power plant, residential complex for permanent personnel, and operational infrastructure. As a full-liner for cement plant technology with more than 150 years of experience in this industry, thyssenkrupp is responsible for the conceptual work, engineering, procurement, construction, installation and commissioning of this giant cement complex, which is expected to start operating in 2019.



Yamama Cement and thyssenkrupp have been working together since the 1960s. After an initial order for a 300 tons/day rotary kiln, a further seven production lines were erected at Yamama's site in Riyadh by thyssenkrupp or its predecessor Polysius. This successful partnership was the reason why thyssenkrupp was entrusted with the massive new project. The top priorities for both parties to the contract were first-class performance in all quality, energy efficiency, health, safety and environmental parameters. The new plant will be dust-free, as filter systems will reduce emissions to the technically feasible minimum. The plant's drying grinding process will save water – particularly important at this desert location where water is only found 345 meters underground. Moreover, as the state-of-the-art technology installed in the cement complex places great

demands on plant operation and maintenance, thyssenkrupp is conducting training courses for Yamama personnel in Germany and Riyadh.

“After a partnership going back almost six decades, Yamama Cement knows our performance and reliability full well. And we know Yamama’s high quality, environmental protection and occupational safety requirements.”

Frank Ruoss,
Member of the Board
Cement Technologies BU thyssenkrupp Industrial Solutions

thyssenkrupp is supplying all the components for the new cement lines – everything from raw material processing to clinker manufacturing and cement loading. The process technology was designed by thyssenkrupp around core machinery developed in house. As today’s high-performance cement plants need excellent quality control and a high degree of automation to stay competitive, thyssenkrupp is delivering a range of process control and factory automation solutions. The polcid[®] process control system, for example, is optimally configured for the cement industry. The polysius[®] expert system automatically controls the system in all operating situations. And the automated polab[®] quality-control system gives the plant operator optimum process and product control.





Thanks to the innovative engineering and construction technologies thyssenkrupp has installed, the new cement plant is fit for the future – and the site even has space for a third production line. The cutting-edge technologies include a 4D construction sequence in project planning, unmanned aerial vehicle (UAV) imagery for automatic determination of progress values for the civil works and generation of current as-built status reports, and digital processes to track construction progress, e.g. reliably evaluating the status of over 50,000 electrical installation items at any time. These and many other innovative cement plant technologies are ensuring Yamama Cement is on track to meet the future requirements of Saudi Arabia’s booming construction industry.

The bottom line: The cement complex currently under construction for Yamama at a desert site 80 km east of Riyadh features state-of-the-art plant technology from thyssenkrupp. Besides being designed to meet the growing demand for cement, the Yamama plant will fulfill the highest product quality, energy efficiency and HSE standards.
