

Best in the Desert – ThyssenKrupp Crushing Plants in Saudi Arabia

In 1975 the story was born – Saudi Cement Company took the decision to install a new 1,000 t/h crushing system at their Hofuf Cement plant, some 300 km in the east of Riyadh.

1,000 t/h of limestone smaller than 30 mm, produced by a double-shaft hammer crusher type 2.0 x 2.5 m, provided with 96 hammers of a weight of 130 kg each.

Fed by an apron feeder this crusher was not business as usual. It was the first mobile crusher in Saudi Arabia. Mounted on transverse crawlers, this crusher was continuously following the quarry face. Loading of the raw material is managed by wheel loaders.

The crushed limestone is transported by means of a long-distance belt conveyor system to Hofuf factory. In the meantime, the self-propelled crushing plant was relocated by about 10 km to a new quarry and equipped with a new apron feeder. It has been in operation for over 30 years now.

Yamama Cement Company, Riyadh, did it the same way. They installed a fully mobile double-shaft hammer crusher on crawlers for 800 t/h < 40 mm in 1977 and another one on crawlers for 800 t/h < 30 mm in 1985.

In the meantime, 1979/1980 Saudi Bahraini Cement at Ain Dar gained advantage from the very good operational experience of their neighbour plant Hofuf, too, and realized a project for a mobile crushing plant equipped with a 54 inch gyratory crusher on hydraulic walking mechanism, fed by an apron feeder.

In spite of the above developments, in the early eighties it seemed that the mobile story came to an end. Southern Province Cement came on stream with their Gizan plant. Two kilns of 2,500 tons per day fed by two stationary 54 inch gyratory crushers, both located directly at the factory. The distance between the quarry and the factory with the crushers was approx. 8-9 km covered by trucks involving a tremendous amount of maintenance, fuel and personnel costs.

Only four years later (1985), a long-distance cross-country belt conveyor system and a mobile hammer crusher plant for 1,000 t/h < 20 mm were installed (Fig. 1).

This system was a new type of its kind. No more feeding by wheel loaders and weekly movements, but – due to the quarry conditions with different types of limestone – feeding by trucks.

One outstanding advantage to the crushing operation so far was that the hauling distance of formerly 8 km was shortened to a few hundred meters.

Qassim Cement Company went back to the roots with a 1,250 t/h < 25 mm mobile hammer crusher plant. The very homogenous limestone is fed by wheel loaders to the self-propelled crushing plant on walking mechanism. The crusher continuously following the advancing quarry face is connected with the factory by a long-distance belt conveyor system.

At the same time Saudi Cement Company at Hofuf installed a second self-propelled mobile crusher in their new quarry – a double-shaft hammer crushing plant for 500 t/h < 30 mm of limestone mounted on transverse crawlers. A long-distance belt conveyor system of approx. 10 km length transports the crushed material to the cement plant. Roughly at the same time, Eastern Province Cement successfully commissioned three stationary 750/500 t/h < 30 mm hammer crushers installed in parallel at their Khursaniyah plant.

In the early nineties, Tabuk Cement and Southern Province Cement (Bishah works) with their two crushing plants were the forerunners for the first impact crushers with 1,000 t/h < 70 mm in Saudi Arabia. Apart from it, the fully mobile crusher at Bishah plant was the first crusher mounted on a self-propelled tyre system with hydraulic drive (Fig. 2).

Continuing the line in 2002, ThyssenKrupp supplied an additional 1,000 t/h < 30 mm mobile double-shaft hammer crusher for Ain Dar plant of Saudi Cement Company (Fig. 3).

ThyssenKrupp Fördertechnik is still going strong as supplier of the new 900 t/h mobile limestone crusher for Qassim Cement in 2004, the new 1,500 t/h mobile crusher for Yamama Cement in 2004 and the new 1,300 t/h mobile crusher for Riyadh Cement in 2005. The 1,000 t/h semi-mobile plant for City Cement as well as the 1,600 t/h stationary plant for Arabian Cement and the 1,400 t/h stationary plant for Southern Province's new Tahama plant. And last but not least as supplier of the stationary 2,200 t/h impact crushing plant for operating the two new 10,000 t/d kilns of Saudi Cement at Hofuf Plant.

Doing business in Saudi Arabia for more than 30 years now, ThyssenKrupp Fördertechnik is proud of a long fruitful relationship in the field of crushing engineering and servicing with the Saudi Arabian cement industry.



Bild 1: Mobile Brechanlage von
ThyssenKrupp Fördertechnik im Werk Gizan

*Fig. 1: Mobile crushing plant by
ThyssenKrupp Fördertechnik at Gizan works*



Bild 2: Mobile Brechanlage von
ThyssenKrupp Fördertechnik im Werk Bishah

*Fig. 2: Mobile crushing plant by
ThyssenKrupp Fördertechnik at Bishah works*



Bild 3: Mobile Brechanlage von
ThyssenKrupp Fördertechnik im Werk Ain Dar

*Fig. 3: Mobile crushing plant by
ThyssenKrupp Fördertechnik at Ain Dar works*