

The sharp growth of the sugar refining industry in Jebel Ali free harbour in Dubai, has led the port authorities to develop their storage facilities. In 2004, they launched the construction of new 176m diameter 25m high silo topped with a steel dome, offering a storage capacity of 900,000 m<sup>3</sup>. However, this capacity turned out to be insufficient even before the project was completed. The only solution that could be envisaged without demolishing and rebuilding the silo was to raise the concrete skin roof by 20 to 25 meters and to apply an external pre-stressing to resist the overload.

To strengthen the structure, Freyssinet installed 117 numbers of cables over a height of 16m around the silo (this represented 80 tons of steel). Each loops was made up of 4 strands each 138m long connected by 468 numbers of X-anchors, enclosed in single HDPE ducts injected with cement grout.

The operations took place night and day during the hottest part of the year between May and August.

## Repairs

### Repairs & Strengthening

Al Khaleej Sugar Silos,  
Jebel Ali - Dubai



#### Client

Al Khaleej Sugar

#### Consultant

Hyder Consultant

#### Contractor

Freyssinet Gulf

#### Construction

May 2004 - August 2004