

High Strength Concrete

GOSI Towers - Riyadh

The GOSI Olaya Tower Project with a total built-up area of approximately 250,000 m² is a Class "A" state-of-the-art offices and commercial located on the junction of Olaya and Tahlia streets at the center of Riyadh. It consists of office premises, a lobby area connecting the two towers on the entrance level including two retail blocks above the ground level. The project has a (4) story underground car parking for 2400 cars with a total depth of 16m below ground level.

Tower "A" consists of thirty-six (36) floors, and Tower "B" consists of thirty-four (34) floors, Facades of both towers are fully glazed and have office use levels, ground floor, mezzanine floor, technical floor, lift floor, roof, and upper roof structures.

Project Requirements:

The target was to produce concrete for columns and walls for the buildings with the following characteristics:

- Design strength = 70 MPa @ 90 Days
- Concrete with a flow of 550±50mm for high-rise pumping should have

Challenges:

- The meager water-cement ratio needed to achieve the targeted strength and flowability
- Increased water demand due to the use of Micro Silica
- Due to the severity of the site location flowability retention for 90 min

Solutions:

- Using Micro Silica to improve the ultimate strength and permeability by reducing bleeding and segregation and by increasing cohesiveness of the mix.
- Using Ultrahigh range water reducers to achieve the required characteristics.

