

Project Spotlight



Nissan Parts Warehouse Sohar Freezone, Sultanate of Oman

Warehouse-SFRC suspended on piles®
'jointless' floor slab

Suhail Bahwan Group is one of the oldest established companies in Oman and they chose to work with Twintec on their latest warehouse development in the Sohar Freezone and, by doing

so, provided the foundations for the largest steel fibre reinforced concrete (SFRC) large panel 'jointless' floor slab constructed to date in the Sultanate of Oman.

The 59,000m² floor slab followed the Twintec Design-Build-Insure concept that ensures total responsibility is taken by Twintec with no split responsibility between consultant, contractor or material suppliers:

- Detailed design with Product Liability Insurance up to €12.5 million
- Material procurement (concrete, steel fibres, construction joints, etc..) from established and tested supply chain partners
- Skilled, experienced labour, supervision and management
- 5 year warranty on finished product

The construction of a quality SFRC 'jointless' floor slab is reliant on a number of key critical success factors which were clearly demonstrated on this project.



Project Data

End User:	Suhail Bahwan Automobiles LLC
Main Contractor:	Bahwan Contracting Company LLC
Consultant Engineer:	DG Consulting Engineers
Pour Days:	30
Total Area:	59,000m ²
Fibre Type:	AFT 08/55
Fibre Dosage:	30kg/m ³
Slab Depth:	150mm
Completion Date:	September 2015

Twintec works locally in
partnership with Aflag Group.



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Design

Twintec liaised closely with Suhail Bahwan, DG Consulting Engineers and the general contractor Bahwan Contracting Company LLC to finalise the optimum slab design for the parts warehouse, factoring in a racking leg load of 60kN/m² and a UDL of 50kN/m² constructing a 150mm slab reinforced with 30kg/m³ of 08/55 AFT Steel Fibres and finished with BASF Mastertop 430 dryshake.

Concrete Quality and Delivery

Experience and technical expertise in concrete material composition and materials behaviour is essential for a 'jointless' slab. Twintec's in-house Concrete Specialists and Operations Managers study in detail the local materials, carry out mix trials and testing prior to specifying the final mix design. Al Tasnim as the chosen concrete supplier provided excellent technical and operational support for the project, producing a consistent concrete mix delivered at a rate of 40m³ per hour throughout the night time pours. GGBS cement replacement was used in the concrete to help slow down the setting time as the works were carried out in the hot months of August and September.

Skilled, Experienced Labour

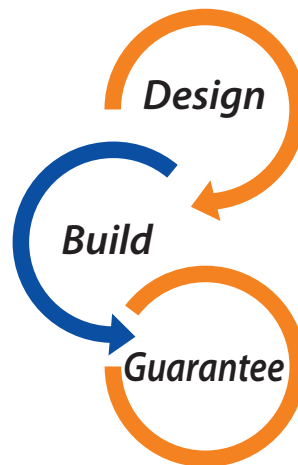
A good quality flat, quality constructed and finished floor that will provide longevity for the end user is not achievable without a skilled, experienced and quality motivated workforce and operational management team. Twintec directly employs all workers and provides a safe and secure working environment for all.

All Party Commitment

The commitment of all parties involved in the project to work together for a common purpose and to achieve the desired end result is critical. The co-ordination, communication and work purpose between all trades working on this site was outstanding and contributed significantly to an excellent finished product.

Programme is often critical to the contractor with fixed completion dates and Twintec offers a fast track construction programme that can reduce floor slab construction time by up to 300%. This slab was built in 30 days, working 6 days a week with challenging nightly temperatures of up to 42 degrees centigrade and 95% humidity.

The use of the innovative Co-sinus joint allows the racking layout to be changed for future requirements without impacting on operational activities of forklift traffic. The unique Co-sinus profile ensures smooth load transfer and crossing from any direction regardless of the speed of the forklift offering higher operational efficiency, operator comfort and reduced forklift truck maintenance. The Co-sinus joint combined with a SFRC large panel 'jointless' Twintec floor slab, Suhail Bahwan will benefit from lower overall floor and forklift maintenance costs and operational efficiencies year after year.



DESIGN

Slab thickness, joint layout and fibre dosage rates optimised to suit specific operational requirements

BUILD

Supply of all materials and constructed by skilled, experienced workers utilising specialist equipment

GUARANTEE

Design covered by Professional Indemnity Insurance and a 5 year warranty provided

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