

High performance fibers take the weight for Al Zahid



One of the activities of Al Zahid Group is the hire of heavy construction and other machinery. In 2020 they required, on their business park in King Abdullah Economic City, Saudi Arabia, a 50,000 m² outdoor pavement for their heavy machinery yard. Flooring contractor Twintec and long-time steel fiber partner Bekaert proposed a Steel Fiber Reinforced Concrete, jointless solution.

The challenge

The external yard pavement would not only have to be durable in the challenging Saudi climate, but also able to withstand heavy equipment loads – e.g. an 80-tonne Caterpillar D10 dozer. It was necessary to convince owner and contractor that the proposed solution was appropriate in a harsh external environment. Speed of execution, and low future maintenance costs, were also considerations.

The solution

The proposed solution was a jointless floor using Steel Fiber Reinforced Concrete (SFRC). Such outdoor pavements are tricky to design and hard to control in execution. Bekaert and Twintec collaborated closely to devise and implement a solution that would meet the client's full requirements.

By specifying Dramix 4D 80/60BG high performance steel fibers, with their tensile strength of over 1,800

MPa and superior anchorage, it was possible to build a floor of just 220 mm thick that met the loading case, with only 20 kg of fiber per cubic meter of mix. The SFRC approach significantly reduced casting time and the jointless design ensures a more durable solution with minimal future maintenance needs and thus a lower overall total cost of ownership.

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Project Specifications

Project type: Outdoor pavement
Application: Jointless floor
Product: Dramix® 4D 80/60BG

Partners

Owner: Al Zahid Group
Main contractor: Nesma Industries
Designer: V3 Middle East
Flooring contractor: Twintec Saudi LLC

