Customer case study

Saw-cut pavement takes heavy traffic at Doha's international airport

The development of Doha's new Hamad International Airport in 2009 required the laying of an 80,000 m^2 external pavement, or 'apron' in airport parlance. To cope with extreme conditions both in construction and in use, concrete reinforced using Bekaert steel fibers, rather than traditional steel mesh rebar, was selected.

The challenge

Intense sunshine and wind pose challenges for a large scale external concrete pour as the rate at which the concrete dries out or shrinks and cures is affected. Speed of construction is therefore important. In use, the apron must support intense traffic (heavy commercial jets, fuel bowsers, etc.) so durability is vital. The apron's irregular shape made a rebar solution more difficult.

The solution

Bekaert, working with the flooring contractor Osis Group, designed a 250 mm thick saw-cut relieved Steel Fiber Reinforced Concrete (SFRC) pavement. SFRC's increased section bending moment helped add durability, bringing improved performance under high dynamic loading. Significantly reduced casting time made progress in the demanding outdoor environment easier, while the tightly controlled process reduced crack propagation.

The SFRC approach requires less labor and ensures a safer working environment. It also eliminates sharp offcuts of rebar and wire that could pose a safety hazard to aircraft. The apron has been in use since 2014 and continues to give full satisfaction.

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Project Specifications

Project type: Airport apron
Application: Saw-cut concrete pavement
Product: Dramix® 3D 80/60BG

Partners

Owner: Qatar Civil Aviation Authority
Contractors: TAV Construction and Taisei Corporation
Flooring contractor: Osis Group