

Project Report

Airfield Reconstruction with Rapid-Hardening Concrete
Concretum® Q-FLASH 2/20



Melbourne Airport Tullamarine MEL



Stands



Taxilane



Apron



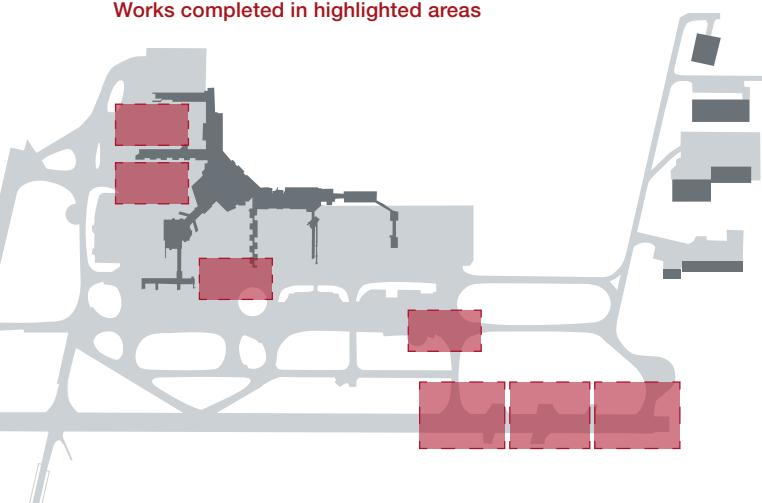


First placement of rapid-hardening concrete in Oceania by Fulton Hogan's Division "Engineered IQ" at Tullamarine Airport, Melbourne

Project Overview

Concretum's distributor in Australia and New Zealand, Fulton Hogan, entered with their subdivision Engineered IQ a collaborative subcontract with Eifers to deliver MAPM – Melbourne Airport Pavement Maintenance Program. This project involves the replacement of taxiways and aircraft apron slabs. Concretum rapid-hardening concrete Q-FLASH 2/20 was mixed on-site using truck-mounted volumetric mixers to replace a slab overnight – ready for service upon handover.

MEL Layout
Works completed in highlighted areas



THE REQUIREMENTS

The slabs to be replaced at Melbourne Airport place complex demands on the concrete. To fill each slab measuring 7.6×7.6 meters, 35 m^3 of concrete are required, delivered simultaneously by six truck mixers. The open times of the various mixers must be precisely coordinated to ensure uniform processing within a single slab. The adjustable open time creates a unique, client-determined parameter and flexibility in production and placement methods. The varying air temperatures throughout the project – ranging from 6 to 30 degrees Celsius – were successfully taken into account.

RELEVANT SCOPE

For airside operations, the following tasks were carried out:

- Closing area to complete works, including obtaining permits and liaising with airfield operations.
- Demolition of existing concrete slabs, including saw cutting and using excavators with grabs to extract the slab.
- Compacting existing subgrade/crushed rock base using heavy vibrating plates.
- Placing of expedient concrete pavement using roller screeds, curing concrete at the correct time, and providing a textured finish.
- Handover to client.



Project film



6 hours | **144 slabs** | **4'888 m³** | **3 MPa**

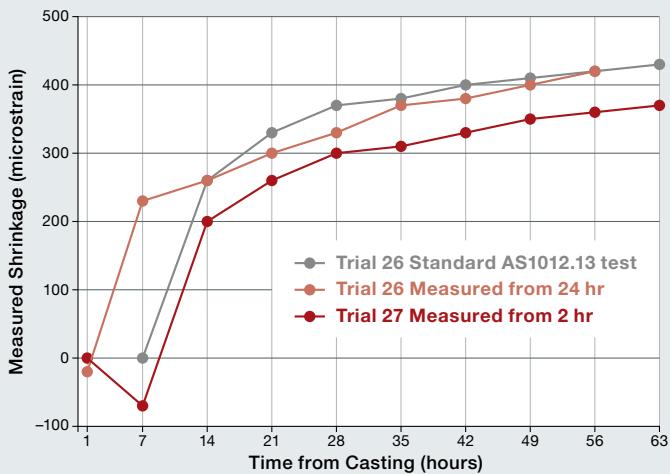
Closure per Night

Nights and slabs completed

Concretum® Q-FLASH 2/20

Flexural strength 2 h

SHRINKAGE TESTING RESULTS



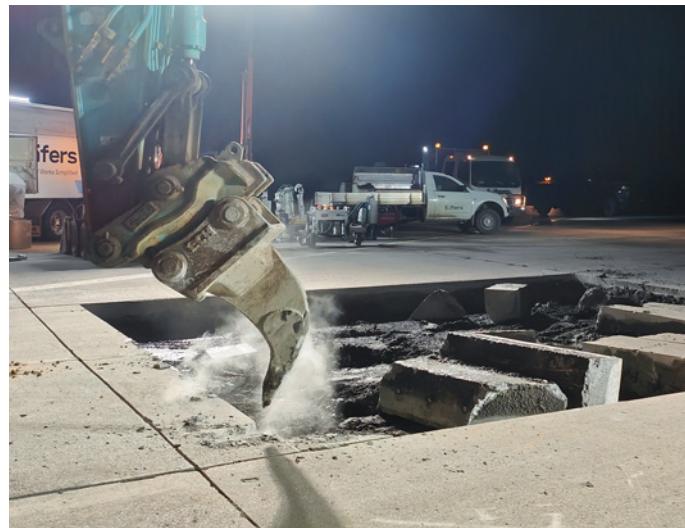
With multiple slabs able to be mixed and placed in a single shift, Concretum® Q-FLASH 2/20 is the ideal solution for time-critical infrastructure projects where short closures and rapid return to service are essential. One of its major benefits is the significantly longer maintenance-free service life compared to asphalt. Recent drying shrinkage testing of Concretum® Q-FLASH 2/20 conducted in Australia confirms its durability and resistance to shrinkage cracking.

CONCRETE SPECIFICATIONS

Product	Concretum® Q-FLASH 2/20
Exposure class	B2/C2
Strength class	50 MPa – 60 MPa
Slump class (consistency)	S1 to S3
Max. aggregate size	40 mm

CONCRETE PROPERTIES

Open time	30 – 120 minutes (adjustable)
Moisture content 2 h after setting	≤ 4 CM-%
Compressive strength 2 h after setting	20 MPa
Flexural strength 2 h after setting	3 MPa



Demolition of existing slabs (7.6 x 7.6 m)



MEL Airport placement of concrete using roller screeds

Ben Torwick, Airfield Program Manager:

“I think the team can be very proud of what we have achieved. 144 slabs replaced with little disruption to our airline partners – this was only possible with tight teamwork across contractors, airfield operations, and our consultants.”

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concretum 

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