

HESC-IQ™

HIGH EARLY STRENGTH CONCRETE
TURNKEY SERVICE

- › Instant and long-term quality
- › Superior productivity
- › Operations-ready result



ENGINEERED IQ

END-TO-END CONSTRUCTION SOLUTIONS

A DIVISION OF

 **Fulton Hogan**

HESC-IQ™

HIGH EARLY STRENGTH CONCRETE TURNKEY SERVICE

Engineered IQ's high early strength concrete (HESC) turnkey service – HESC-IQ™ – combines proven, leading, international HESC technology from Concretum®, with the best of Australian and New Zealand construction expertise. It offers the ideal solution for express pavement slab replacements for airports, roadways and other areas where a short closure and rapid return to service are vital. For clients, it delivers instant and long-term quality, superior productivity and an operations-ready result.

Exclusive Concretum® technology

Engineered IQ's exclusive licence of Concretum® products in Australia and New Zealand connects clients with the latest generation of rapid-hardening concrete alongside our team's proven construction delivery expertise. Concretum® Q-FLASH 2/20 concrete – conforming to all EN 206 exposure classes and US ASTM C1157-17 – can be placed, compacted and finished using the same methods and equipment as conventional concrete. However, unlike conventional concrete, it can achieve a compressive strength of 20MPa and a flexural strength of 3MPa in just two hours after pouring.

Flexible mix design enables an approach that optimises each project's mixing and placing method, using Concretum®-engineered admixtures to control the consistency and open time (the time the concrete remains workable). Open times are typically designed between 30 and 120 minutes – offering the longest open time for an HESC product in Australia and New Zealand. This unique, client-determined parameter creates flexibility, including enabling off-site mixing for transport to site and placement via methods such as pumping or slipforming.

The rapid-hardening nature of Concretum® Q-FLASH 2/20 and its rapid strength development allow critical slab replacement and pavement construction with the least possible interruption to traffic – even 24/7 operations.

Fit-for-purpose installation

The Engineered IQ team has the experience and flexibility to install Concretum® Q-FLASH 2/20 using any conventional concrete placement method or via our fleet of mobile, truck-mounted volumetric mixers. Its unique versatility means our team can replace multiple slabs in a single shift ready for a return to service overnight.

Full turnkey value

Our team manages all aspects of delivery including:

- › Designing and supplying a tailored mix
- › Removing the damaged area
- › Preparing the subbase and new slab
- › Installing dowels and reinforcement as required
- › Completing concrete pouring and finishing.

THE LATEST GENERATION
of rapid-hardening concrete



THE HESC-IQ™ DIFFERENCE

30-120 minutes open time

allows for off-site, high-volume batching and pumping

Multiple slabs

able to be mixed and placed in a single shift

+16 years running

as the exclusive HESC service at Zurich Airport

Complete slab preparation

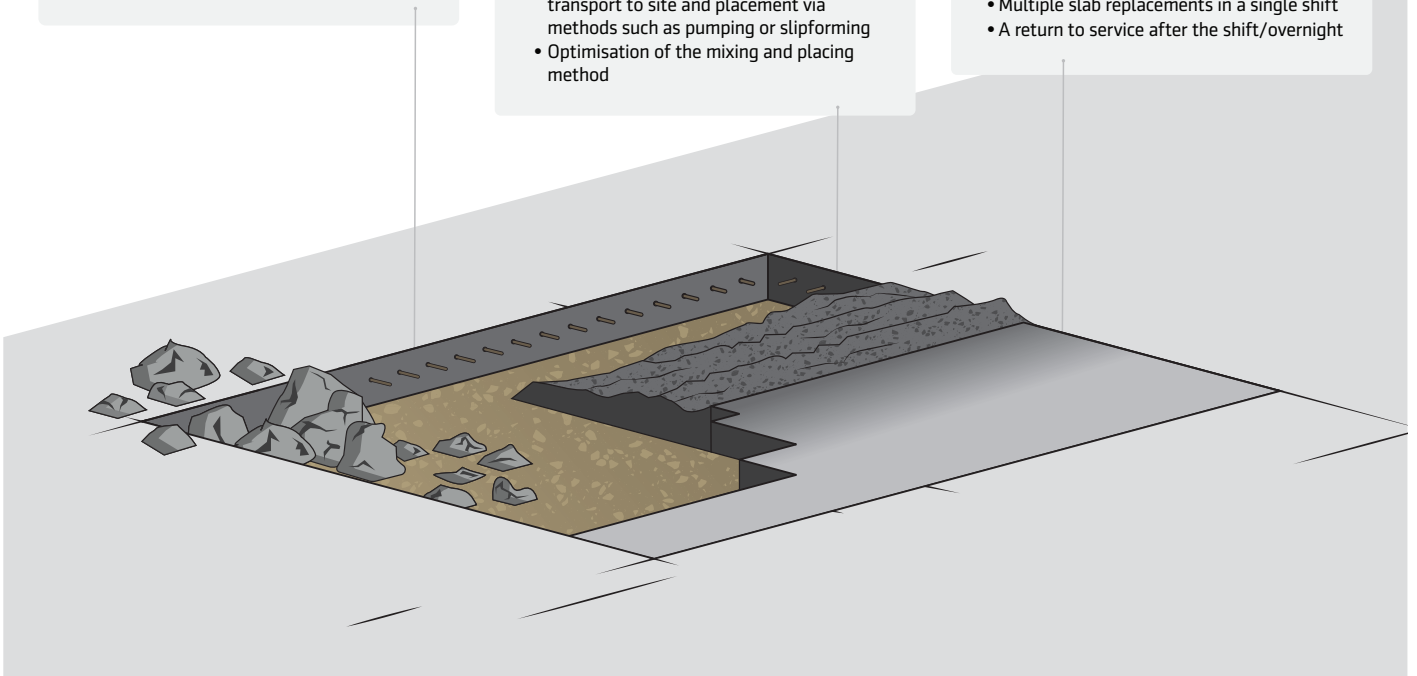
- Efficient removal of slabs being replaced
- Full subbase preparation
- Dowels and optional reinforcement in accordance with design specifications

Tailored mix design

- Controlled open times of 30-120 minutes
- Scope to use the same methods and equipment as conventional concrete
- Options such as off-site mixing for transport to site and placement via methods such as pumping or slipforming
- Optimisation of the mixing and placing method

Rapid curing

- Rapid-hardening concrete with rapid strength development
- 20MPa compressive strength and 3MPa flexural strength in just two hours
- Multiple slab replacements in a single shift
- A return to service after the shift/overnight

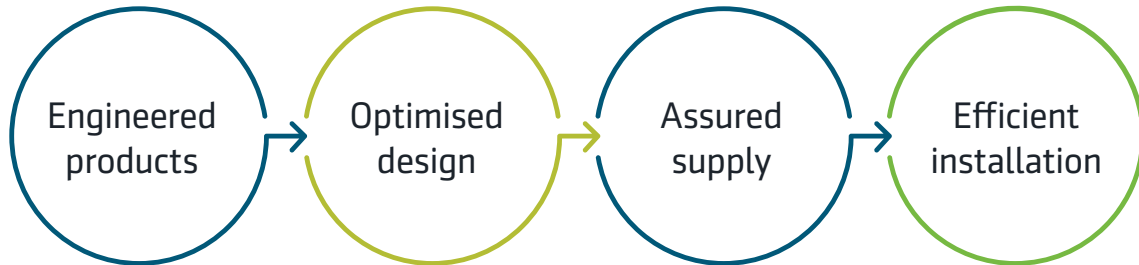


concretum 
the fastest concrete

Concretum® is a global leader in concrete technology and has been developing and producing special, high-performance concretes and concrete admixtures for more than a decade. Their products are designed to support easy, reliable and repeatable production for high-tech concrete, combining innovative properties with new production methods, and offering very long lifespans. Their rapid-hardening concrete technology is increasingly becoming the international standard for reconstructing large concrete transport surfaces, such as runways and motorways. The Engineered IQ team has worked closely with Concretum® to develop a superior HESC solution for the Australian and New Zealand markets based on Concretum's® innovations.



TURNKEY VALUE



Instant and long-term quality

Concretum's® Q-FLASH 2/20 technology and Engineered IQ's best-practice construction methods and strict quality control ensure the whole process, from mix design to concrete placement, delivers unrivalled quality and durability outcomes



Superior productivity

With the market's most optimised open time, Concretum® Q-FLASH 2/20 creates unmatched flexibility for each project application and installation method, supporting tight programs and competitive cost efficiency through superior productivity

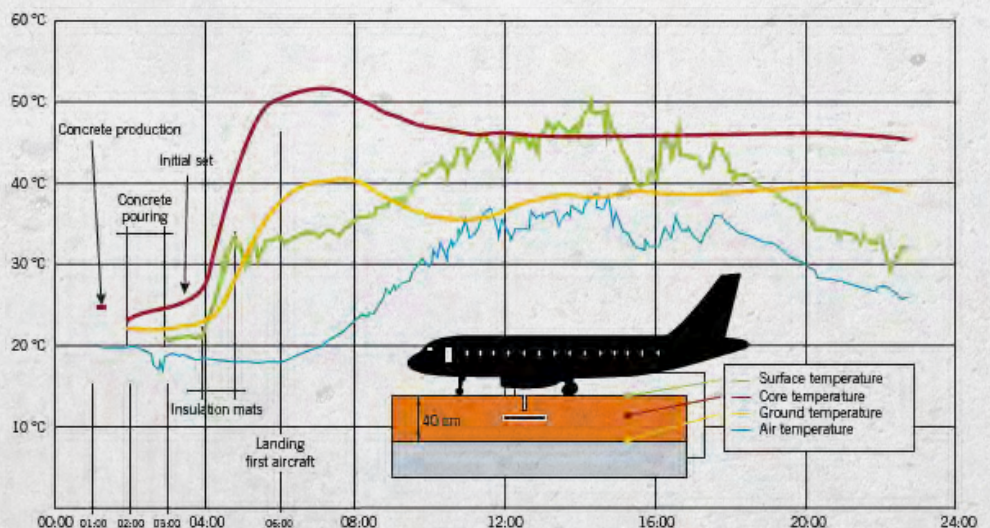


Operations-ready result

The result is a surface that can take running traffic, including commercial aircraft and road traffic, by the end of a shift, delivered by a team skilled in large, critical project construction, including in high-priority operational environments such as airfields, Defence facilities and high-traffic roadways

Designed for critical operational facilities

While new in the Australian and New Zealand markets, Concretum® Q-FLASH 2/20 enjoys an extensive client base and track record in Europe, since 2004, including being the first choice for critical operational facilities such as international airports like Zurich Airport in Switzerland and Paris' Charles de Gaulle in France.





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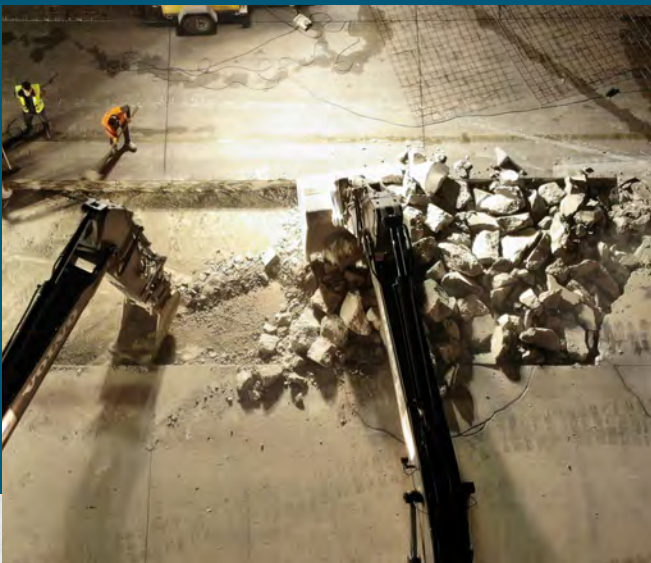
END-TO-END CONSTRUCTION SOLUTIONS

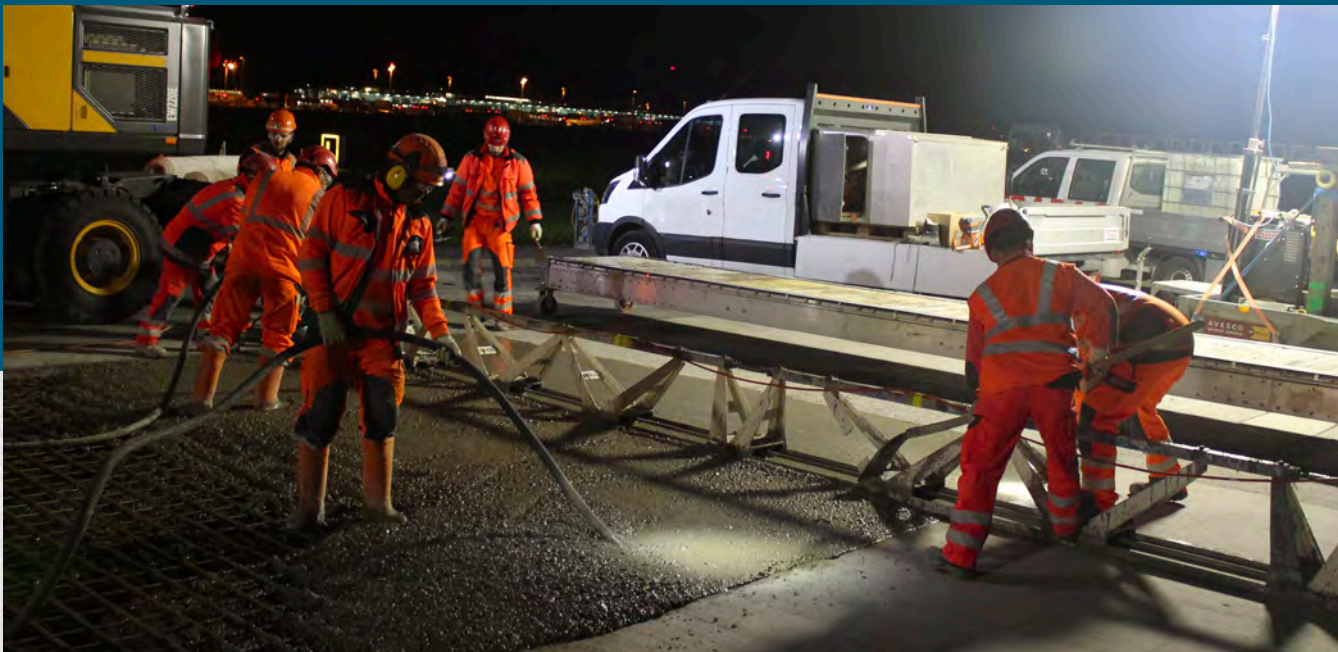


Engineered IQ is a specialist engineering division of Fulton Hogan. Our team offers clients value via:

- › **Turnkey efficiency** – solutions span the full value chain, from engineered products to optimised design to assured supply to efficient installation
- › **Fresh thinking** – we unlock greater value for clients through fresh thinking, including mix designs and installation programs that precisely match site and client requirements
- › **Real collaboration** – our team is focused on client outcomes and satisfaction, using proven systems and processes to ensure we understand your needs and deliver tailored results only possible through collaboration
- › **Certain outcomes** – the combination of turnkey value, considered delivery and relationship-focused service drives certainty and the highest levels of quality for our clients.

At every step, clients gain the added advantage of a team directly linked to Fulton Hogan's extensive major and critical project experience and Concretum's® world-class engineering support. This extensive knowledge of the bigger picture, and of the way that HESC installations best tie in with broader project requirements, creates a unique foundation and confident platform that assurances will be delivered. In addition, our Engineered IQ team has ready access to Fulton Hogan's diverse network of specialists to maximise value. The team also uses Fulton Hogan's industry-leading safety (AS/NZS 4801:2001), quality (ISO 9001:2015) and environmental (ISO 14001:2015) management systems and processes and draws on our company-wide experts in these areas, including in ecologically sustainable development, to offer best-practice outcomes, every time.





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