

Project Report

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



Charlotte Douglas International Airport CLT



Taxilane



Stands



Apron





Rapid-hardening concrete:

First placement of Concretum® Q-FLASH 2/20 in the USA

Project Overview

Concretum® Q-FLASH 2/20, the latest generation of rapid-hardening concrete, was used for the replacement of 5 slabs, 31 yd³ each, on one of the busiest taxi lanes at CLT. The 5 slabs will prove Concretum® Q-FLASH 2/20's multi decade-long lifespan and its resistance against high traffic load and aging factors.

PROJECT FACTS

In this project, the taxi lane underwent surface replacement of 350 yd² for enhanced durability and appearance. The prevailing air temperature during the project ranged between 77 to 86 °F, proving the concrete is also workable in tough conditions. The concrete maintained a temperature of 81 to 86 °F throughout its application, promoting effective curing. Notably, the project had an open time of approximately 60 minutes, providing a critical window for executing essential tasks efficiently.

MATERIAL DELIVERY AND PRODUCTION

The project was executed in July 2023. In total 5 containers containing 96 cement bags of 1000 kg each and 4000 kg of admixtures were shipped to Charlotte in previous months. The cement and admixtures can be handled and stored like conventional products, ready to be used in a concrete batching plant.

For CLT's slabs replacement the concrete was initially tested and trialed in a concrete plant laboratory nearby the airport. The concrete production and the transportation time lasted around 20 minutes, the concrete remained workable for approximately 60 minutes, enough time to place and finish it.



Runway reconstruction with Concretum®



Concretum® CEM 100 cement bag delivery



Concrete trials before production

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