

## Reference

### Repair of parking areas and taxiways at Barcelona/ESP airport

#### Replacement of floor plates using Concretum® Q-FLASH 2/20



Dismantling of the old slab



Casting of the new slab

#### Initial Status

Several floor slabs are heavily damaged at Barcelona airport in the parking areas and the taxiways and have to be replaced. Due to high traffic during the daytime, the repair of the slabs has to be performed in a short period of time during the night.

#### Solution and evaluation

The rapid hardening concrete Concretum® Q-FLASH 2/20 reaches a compressive strength of 20 N/mm<sup>2</sup> two hours after adding the water while the workability is 50 to 70 minutes. In addition, Concretum® Q-FLASH 2/20 is a shrinkage reduced concrete, which results in a crack-free and durable surface. For the operator (AENA Barcelona) this means that the replacement of the floor plates can be done gradually and with no adverse effect regarding the air traffic even with the above-described difficult initial status. As there is no concrete plant close to the airport the concrete is produced directly in a ready-mix concrete truck. First the trucks are loaded with aggregates and main water. With this load the trucks roll together to the construction site where they are placed around the empty plate. The addition of binder is now made directly from big bags into the ready-mix concrete truck. To adjust the requested consistency of concrete extra water is added finally. All trucks unload together into the designated place for the slab. The visco-plastic consistency of the concrete requires only a compaction

#### Facts

**Product:**  
Q-FLASH 2/20

**Project duration:**  
2008

**Authority:**  
AENA Barcelona

**Building contractor:**  
COMSA

**Concrete supplier:**  
UNILAND



on a low level and the surface can be leveled by vibrating beams. Usually the slab that has to be replaced is closed off at 8 pm and can be released again for air traffic at 6 am.

