

Felixstowe Docks

Replacement of block paving with pavement-quality concrete



Our reference in Suffolk (United Kingdom): Felixstowe Docks

The background

The Port of Felixstowe is the United Kingdom's biggest and busiest container port and one of the largest in Europe.

The £10m pavement rehabilitation at its South Reconfiguration Phase 1 required the removal of part of the existing pavement (pavement blocks) and replacement with approximately 100,000m² of pavement quality concrete (PQC). The pavement surface was a brushed finish, with a texture depth (sand patch method) of 0.5-1.25mm. The works, constructed in 22 major phases with concurrent phases over a 24-month programme, enabled the live port to remain operational throughout the contract.

The challenge

The works include the removal of 100,000m² of failed pavement, comprised of 80mm block paviors, 30mm of sand and 375mm of CBM4.

The block pavement was to be replaced with an average of 300mm of pavement quality concrete with a design flexural strength of 5.7N/mm². All work was carried out in phased possessions within the live dock environment.

Project:

Felixstowe Docks

Location:

Suffolk

Main contractor:

Costain

Subcontractor/Concrete producer:

Gill Civil Engineering

Market sector:

Ready-Mixed Concrete

Products used:

MasterGlenium ACE 499

Master X-Seed 100

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Our solution

MasterAir 130 and MasterGlenium 123 was used in the concrete mix design.

MasterAir 130 is a liquid air-entraining admixture that produces ultra-stable air bubbles with a good bubble size and spacing.

MasterAir 130 improves the plasticity and workability of concrete, increases open time and benefits cohesiveness and bond strength. It increases freeze/thaw damage resistance and improves the surface finish, providing reduced increased resistance to scaling, permeability, segregation and bleeding.

MasterAir 130 was used in conjunction with MasterGlenium 123, an innovative versatile admixture based on third generation polycarboxylic ether (PCE) polymers.

Its configuration allows it to perform as a multi-functional admixture producing a high-quality concrete mix with good strength development and extended workability without delayed setting characteristics.



The customers benefit

- Admixtures supported the production of a high-quality concrete
- Pavement quality concrete was achieved
- MasterGlenium 123 and MasterAir 130 enhanced the workability, durability and aesthetics of the concrete

Project facts at a glance

- Removal of failed block paving
- Replacement with pavement quality concrete
- 100,000m² area to be refurbished
- 22 phases over a 24-month programme
- MasterAir 130 liquid air-entraining admixture
- MasterGlenium 123 high range water reducing admixture
- Brushed surface finish
- Sand patch method employed