System Rapid Set Concrete

per 05/2023

Fast-setting concrete for refurbishment of traffic areas and infrastructural objects

DESCRIPTION

Rapid Set Concrete is a fast-setting concrete based on the high-performance binder Rapid Set, which features rapid use, high strengths and durability. Rapid Set Concrete is suitable for a wide range of indoor and outdoor applications and in particular for the restoration of concrete surfaces or airfield operating areas such as take-off and landing runways. Early use and release for traffic already two hours after placement can be achieved reliably. Rapid Set Concrete is mixed directly on site using special, mobile concrete mixers (e.g. Cemen Tech).

APPLICATION

For the renovation of concrete slabs in the infrastructural sector, such as concrete runways or airfield operational surfaces, providing high durability due to dimensional stability, high final concrete strength as well as sulphate resistance. Attestation by tests of hardened concrete in accordance with the technical delivery conditions for building materials and building material mixtures for the structural maintenance of traffic surfaces (TL BEB-StB).

PROPETIES

- concrete production directly on site
- consistency / processing time individually adjustable
- fast-setting
- tests according to TL BEB-StB
- dimensionally stable
- high final strength
- sulfate resistant
- frost/deicer resistant
- air-entrained-concrete
- physiologically and ecologically harmless
- pumpable

TECHNICAL DATA

Mixing ratio As an example for fast-setting concrete for the repair of traffic areas	Rapid Set Cement aggregates A/B16 water/cement ratio	360 kg approx. 1900 kg approx. 0,45
Fresh concrete consistency	slump	F3 - F4
Processing time	depending on the formulation and weather conditions	approx. 15 - 30 minutes
Temperature	processing, ambient and sub-base temperature	≥ 5 °C
Set concrete properties acc. to TL BEB-StB - initial test for fast-setting concrete type A		
Compressive strength $f_{c,cube}$	after 2 hours after 12 hours after 28 days	≥ 20 MPa ≥ 30 MPa ≥ 45 MPa
Flexural strength $f_{ct,bz}$	after 5 hours after 28 days	≥ 3,0 MPa ≥ 4,5 MPa
Frost and deicer resistance	after 28 freeze-thaw cycles	≤ 1.500 g/m²

Hints: All the afore-mentioned technical data are examples and depend on the formulation.

PROCESSING

Mixing technology

As mixing technology, volumetric mixer trucks (e.g. Cemen Tech M-Series) should be favoured. Volumetric mixer trucks hold all the concrete components separated from each other and mix them on site to fresh concrete. This ensures optimal processing of the fast-setting concrete.

The parameters for the consistency and processing time pre-programmed in the system, can be adapted on site to cope flexibly with differing weather conditions. When fully loaded, a volumetric mixer truck can produce approx. 8 m³ of concrete. The storage chambers for aggregates and cement can also be charged continuously during the mixing process to produce larger quantities of concrete.

General processing instructions

Apply Rapid Set Concrete quickly in a uniform layer thickness, compacted, level and smooth. Apply the surface texture, e.g. a broom finish. Immediately after the last processing step, protect the fresh concrete surface from drying out with suitable measures, e.g. apply liquid curing agent (paraffin-based). Higher temperatures shorten, lower temperatures extend the working time.

JOINTS

All joints in the base concrete have to be taken over. The concrete has to be separated from uprising masonry (walls, columns, etc.).

KORODUR International GmbH
Wernher-von-Braun-Straße 4 · 92224 Amberg
Phone +49 (0) 9621 4759-0 · Fax +49 (0) 9621 32341 · info@korodur.de
www.korodur.de