

CEMCRETE PC

High Strength Non-Shrink Grout for Pile Head Re-profiling

Description:

CEMCRETE PC is a single component, cementitious, pre-mixed, pre-packed non shrink, pourable grout. It requires just the addition of water to produce a high flowable, non-shrinkage, high early strength grout. CEMCRETE PC is composed of a blend of cement, hydraulic binder, graded aggregates, and special additives to control the shrinkage effect and to reduce the water cement ratio. Applied as a re-profiling and leveling grout for the pile head treatment prior to water proofing.

Uses:

CEMCRETE PC is designed to be used for pile cap re-profiling and encapsulation. The product can be used as a general grouting and void filling, especially where access is difficult or steel reinforcement congestion exists. Other applications include:

- Structural repairs for columns.
- Replacing sections of concrete beams.
- Under machinery bases grouting
- Anchoring bolts and footings
- Leveling of horizontal elements such as bridges, deck and loading bays

Advantages:

- Non-shrink, free flow and self-compacting.
- High early and final compressive strength.
- Sulphate and chloride resistant.
- Does not contain metallic aggregate.
- Easy to apply by trowel, pouring or pumping.
- Excellent bond to substrates.
- Low permeability inhibits the ingress of chlorides and carbon dioxide.
- Compatible to all cementitious products.
- Low alkaline and chloride free product.

Instructions for Use:

Surface Preparation:

The boundary of the pile should be cut at the required level using a concrete saw to provide a neat cut with no feather edging. The area of the pile head to be repaired may then be broken out up to the prepared level. The substrate should then be cleaned, free from dust, inconsistent parts, traces from stripping oils, efflorescence, rust, etc. The steel reinforcement bars should be grit blasted or steel brushed to bright metal look.

Construct a leak proof formwork for the pile as CEMCRETE PC is a free-flowing grout. The formwork should also include outlets for the pre-soaking water discharge. Soak the surface of the pile head with enough water to reach saturated surfaces prior to grouting. Casting CEMCRETE PC should be applied in layers up to 25 cm in depth. Greater depths can be casted depending on the design of the pile head treatment. Consult with MATEX Technical Department for technical assistance.

If CEMCRETE PC is used for structural repair, the surface of the repaired area must be solid, compact, clean, free from dust, cement laitance, curing compound, oils, grease, etc. All loose parts of concrete should be removed. A coarse surface profile with the aggregate exposed is preferred. All reinforcement, which shows signs of corrosion must be fully exposed to an adequate depth behind the bar in order to allow ease of access for the fluid repair compound. The steel bars should be grit blasted to bright metal. Immediately after the cleaning of steel bars is completed, coat the bars with LAVAFER – a two component cementitious corrosion inhibiting primer, as a protection layer to prevent further corrosion. Allow the coated steel to dry before commencing with the repair application. Use tight, leak proof formwork to be able to cast the mix.

Mixing:

CEMCRETE PC must be mixed mechanically with low-speed drill mixer 200-300 rpm, fitted with a suitable paddle. To prepare the mortar, pour into a cement mixer or into a container about 3.0 – 3.2 Lt. of clean water (depending on the required consistency), then add 25 Kg. bag of CEMCRETE PC and mix for few minutes till obtaining a homogeneous mixture, free from lumps. Always add powder to water when mixing cementitious products.

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Application:

Pour the mixed grout to the center of the pile head and allow the grout to flow evenly to the perimeter of the formwork. Pour enough grout to cover the entire area of the pile head to the desired thickness. Work the grout to the perimeter and level with the trowel to level evenly.

After initial setting of CEMCRETE PC, apply a curing compound to the face of the casted grout for three days then remove the formwork. Check for the integrity of the sides of the grout to the pile head. Clean any residue of the form work and apply touch up or repair if required with LAVAFINISH-a polymer modified skim cementitious fairing and reprofiling coat or LAVAPOXY FINISH-a two parts epoxy repair fairing coat to the sides of the cured grouting to allow for subsequent water proofing of pile head.

Standards:

- ASTM C109M 11, C827, C940, 1107, C928, C1240, C1107
- BS 6319, 1881 & 4551

Yield:

CEMCRETE PC 25 kg bag achieves 12.25 liters of mixed grout.

Packaging:

CEMCRETE PC is available in 25 kg high quality recyclable paper bags.

Storage:

Store in original packing in dry conditions away from direct sunlight and high humidity levels.

TECHNICAL PROPERTIES

Appearance	Grey Powder
Density	2.26 ± 0.03 kg/lit
Flow@5 drops, ASTM C1437 (flowable)	125-140%
Potlife time @25°C	60 minutes
Setting Time	Initial: 2 hours Final: 4 hours
Compressive Strength (ASTM C109)	≥ 27 N/mm ² @ 1 day > 52 N/mm ² @ 7 days > 70 N/mm ² @ 28 days
Flexural Strength (ASTM C580)	1.8 N/mm ² @ 1 day ≥ 7.5 N/mm ² @ 7 days ≥ 9.0 N/mm ² @ 28 days
Elastic Module after 28 days (ASTM C580)	25 200 N/mm ²
Chloride Content (ASTM 1202)	NIL
Volumetric Change (ASTM 827)	Up to 2% in plastic state

*Values indicated may vary depending on the environment and conditions of the material. Figures given are tested according to standard laboratory conditions.

Shelf Life:

CEMCRETE PC can be utilized within 12 months of production date if stored in proper conditions in an unopened original packing.

Cleaning:

Clean tools and equipment with water before material hardens. Hardened material can be removed mechanically.

Remarks:

For application during summer season, the following precautions should be taken:

- Store CEMCRETE PC bags an opened in a shaded dry area.
- Use cold water to mix the product.
- Keep all tools in shaded area.
- For large mixing quantity use grout vane mixer.
- Mix enough material to ensure continuous process.

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- Avoid application during the hottest time of the day in direct sunlight.
- Cover the casted pile head profiling immediately after pouring with wet Hessian cloth or cure with CEMCURE curing agent.

Health and Safety:

- Avoid contact with eyes and skin. Wear suitable protective clothing such as coveralls, goggles, dust mask and gloves. Use barrier cream. Ensure that there is adequate ventilation. Do not breathe vapour or spray mist.

FIRST AID:

- Eyes: In the event of accidental splashes, flush with warm water and seek medical advice.
- Skin: Wash skin thoroughly with soap and water
- Inhalation: Remove to fresh air, keep patient rested
- Ingestion: Do not induce vomiting. Seek immediate medical attention.

For further safety information, please refer to CEMCRETE PC Material Safety Data Sheet.

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