

Talrakmicrocrete® CI

Special compound for site mixed, rheoplastic and anti-corrosion microconcrete with very high durability



The Construction Alchemists

Description

Talrakmicrocrete® CI is a premixed powder based on Portland cement and special additives, which forms after mixing with water and well selected aggregates in proper granulometric distribution special durable concretes with exceptionally high mechanical, chemical aggression resistance and excellent protection against corrosion of the reinforcing steel. The product is shrinkage compensated which is rheoplastic or self leveling consistency

Features & Benefits

- Zero permeability against water and very good water vapour permeability.
- Corrosion protection of steel reinforcement by the multiple contact and migrating.
- Optimal durability against aggressive chemicals particularly Chlorides and Sulphate.
- Excellent resistance against freeze-thaw cycling also in presence of de-icing salts.
- No bleeding, compensation of hygrometric shrinkage.
- Very strong adhesion bond strength to the concrete.
- Exceptionally good mechanical properties.

Primary Application

For all concrete applications in formwork or in confined areas, to achieve a high quality concrete with exceptional durability, even in severe, aggressive, ambient conditions. Talrakmicrocrete® CI is used for repairs to damaged reinforced concrete elements, particularly where access is restricted and where vibration of the placed material is difficult or impossible.

Technical properties

Compressive Strength

Age (days)	24 hrs	28 days
Compressive Strength (Mpa)	40	80

Flexural Strength

Age (days)	7 days	28 days
Flexural Strength (Mpa)	5	12

Modulus of elasticity : 30MPa @ 28days

Adhesion bond strength : 3MPa @ 28days

Pullout rebars : > 20MPa 28days

Chloride Permeability : 300coulomb

Water Vapour Permeability : 55μ

Advised Layer thickness : 40mm to 500mm

Specification Clauses

Talrakmicrocrete® CI a cementitious pre-mix powder with corrosion inhibitor which forms after mixing with water and selected aggregates in proper granulometric distribution, special durable rheoplastic concrete with volumetric stability and shall have 1day compressive strength of not less than 40Mpa, with no bleeding and high pumping ability. The concrete obtained using Talrakmicrocrete® CI acts as a special binder in place of normal cement, with exceptionally high mechanical resistance, resistance against chloride attack, with a RCPT value of 100-1000 coulombs when tested as per ASTM C 1202 and carbonation resistance, thereby providing excellent protection against corrosion of the embedded reinforcing steel. It is a formulation with shrinkage compensation and shall have rheoplasticity or self leveling consistency.

Talrakmicrocrete® CI	540kg
Aggregate (0.1mm to 10mm dried)	1720 kg
Water	190kg (water/Talrakmicrocrete™ CI, ratio = 0.35)
Fresh wet density	2450 kg/m ³
Slump	150mm

Application Instruction

The unrestrained surface area of the repair must be kept to a minimum. The formwork should include drainage outlets for pre-soaking and, if beneath a soffit, provision for airventing. Provision must also be made for suitable access points to pour or pump the mixed micro-concrete in place.

Defective concrete surfaces must be cut back to a sound base. Smooth surfaces should be mechanically roughened. Corroded reinforcing steel should be exposed around its full circumference and cleaned to remove all loose scale and corrosion deposits. It is important to clean the steel to a bright condition. Grit-blasting is recommended.

One coat of Talrakote® ZE Primer must be applied on the reinforcing steel. If any discontinuity in the applied film is noticed, one more coat has to be applied.

Alternatively, all prepared concrete substrates should be primed using Talrakpolybond® EP, a slow setting epoxy bonding aid. Talrakpolybond® EP shall be applied only on dry substrate.

Note : For repair section generally deeper than 10mm it may be necessary to mix Talrakmicrocrete® CI with properly graded 0.1mm to 10mm, silt free aggregate to minimize temperature rise. The quantity of aggregate required may vary depending on the nature and configuration of the repair location. The typical results with a few aggregate proportion, for various application are furnished below for guidelines.

Typical results of Talrakmicrocrete® CI with graded coarse and dried aggregates of maximum size 10mm.

Depending on the final use of the available aggregates in general the advised dosage levels of 300 to 550 kg/m³ in order to obtain a concrete with the above characteristics.

The product allows, with very low w/p ratios to produce concrete with good workability and easy placing properties.

The lower amount of water used, the better impermeability of microconcrete. In case the poured concrete is in contact with the existing conglomeration substrates, it is advisable to first saturate them with water for a few hours and remove the excess water immediately prior to the application of Talrakmicrocrete® CI.

Immediately after the curing, apply by roller the curing compound Talrakure™ WB which will prevent the formation of cracks in the plastic phase. After the surface is hardened (in 1 to 3 hrs) especially in dry condition apply wet clothes saturated with water or poly-ethylene. At low temperatures protect the fresh application by poly-styrene insulation plates.

Estimating Packaging

Talrakmicrocrete® CI is supplied in 25kg bag

Yield

25kg of Talrakmicrocrete® CI when mixed with a water:powder ratio of 0.17:1 (by weight) will yield 13 litre of mixed material.

The volume of wet mixed powder is 13.0ltrs per bag. Actual yield per bag will depend on the consistency of Talrakmicrocrete® CI and quantity of coarse aggregates added.

Storage

Talrakmicrocrete® CI has a shelf life of 6 months if kept in dry store in original, unopened containers. If stored at high temperature and/or high humidity conditions the shelf life may be reduced.

Precautions

Health & Safety Instructions

Contact with the skin should be avoided. In such cases skin should be washed immediately with soap and water-not solvent. Gloves and goggles should be used when handling these products. Eye contamination must be immediately washed with plenty of water and medical treatment sought.



Talrak Construction Chemicals Pvt. Ltd.

An ISO 9001:2015 Certified Company

Works:

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Ref : TCC/TDS/RE07 - R I