

Talrakmicrocrete® GP

General purpose non shrink free flow cementitious micro concrete



The Construction Alchemists

Description

Talrakmicrocrete® GP is a prepacked blend of binders and specially designed filler and additive which requires only addition of water for mixing at site. It produces a micro concrete that is resistant to plastic shrinkage along with free flow and high strength properties. It is suitable for structural strengthening of RC structural members in buildings, bridges, flyovers etc.

Features & Benefits

- Shrinkage compensation eliminates cracking and settlement of the placed material in the plastic state.
- Free flow enables consolidation in congested reinforcement sections.
- Prepacked, No site batching required.
- Excellent creep response.
- Durable - as it contains no chlorides.

Primary Application

Talrakmicrocrete® GP is used for repairs and strengthening structurally inadequate RC members, by buildup encasement techniques.

Design Criteria

Talrakmicrocrete® GP can be applied in sections upto 100mm deep. For larger sections, the addition of approved aggregates may be required. This will depend on the specific configuration of the repair location.

Technical Properties

Water/powder ratio	0.14-0.15
Fresh wet density	2.15 - 2.20 g/cc
Compressive strength @ 24 hours @ 3 days @ 7 days @ 28 days	22 MPa (±2) 35 Mpa 45 Mpa 55 MPa (±5)
Tensile strength @ 28 days	2.0 MPa
Flexural strength @ 28 days	5.0 MPa
Young's modulus	25 MPa
Expansion characteristic	1 - 4 % Unrestrained expansion
Pressure to restrain plastic expansion	0.004 MPa
Co-efficient of thermal expansion	10×10^{-6} to 12×10^{-6} / °C

Typical Properties of Talrakmicrocrete® GP with graded coarse aggregates of maximum size 12mm.

Coarse aggregates (SSD)	1:0.75 by weight
Water/powder ratio	0.14 -0.15
Workability	Flowable
Compressive strength @ 24 hours @ 3 days @ 7 days @ 28 days	25 MPa (±2) 40 MPa 55 MPa 65 MPa (±5)

W/p ratio shall not be increased under any circumstances.

Specification Clause

Talrakmicrocrete® GP shall be a single component cementitious prepacked powder to which addition of clean water and approved quantity and grade of coarse aggregate can be added. The micro-concrete shall be of flowable consistency at specified water/powder ratio. The hardened concrete shall attain a compressive strength of not less than 55MPa @ 28 days with normal curing. The unrestrained expansion shall be $1 \geq e \leq 4\%$.

Application Instructions

Surface Preparation

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 air venting. 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 should be applied on the reinforcing steel. If any discontinuity in the applied film is noticed, one more coat has to be applied.

Several hours prior to placing, the concrete substrates should be saturated with clean water. Immediately prior to placing, any free water should be removed.

Mixing

Add 4.0 to 4.25 liters of clean water to 25kg of dry mix powder (1bag). Mix for 3-5 minutes (or depending on the mixing efficiency for the time necessary to achieve a smooth and lump free mix) in the cement mixer. Hand mixing is not recommended.

Note : For repair sections generally deeper than 100mm it may be necessary to mix the Talrakmicrocrete® GP with properly graded 5mm to 12mm dust-free aggregate at SSD condition. The quantity of aggregate required vary depending on the nature and configuration of the repair location. The typical results with a few aggregate proportion for various applications are furnished below for guidelines. Trial mixes are recommended before finalizing the specifications. The coarse aggregates shall be added to the drymix. The powder and water shall be mixed first and coarse aggregate in SSD condition shall be added into the wet mix while continuing the stirring operation.

Estimating Packaging

Talrakmicrocrete® GP is supplied in 25kg bags.

Yield

One bag of 25 kg Talrakmicrocrete® GP will yield 13.0 to 13.5 liters of mixed material. This yield is theoretical and the actual yield will depend on the consistency of the mixed material used.

Storage

Talrakmicrocrete® GP 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 if contact with skin should be washed immediately with soap and water-not solvent. Gloves and barrier creams should be used when handling these products. Eye contamination must be immediately washed with plenty of water and medical treatment sought.

Important note :

Talrak products are guaranteed against defective materials and manufacture and are sold subject to its standard terms and conditions of sale, copies of which may be obtained on request. Whilst Talrak endeavours to ensure that any advice, recommendation specification or information it may give is accurate and correct, it cannot, because it has no direct or continuous control over where or how its products are applied, accept any liability either directly or indirectly arising from the use of its products whether or not in accordance with any advice, specification, recommendation or information given by it.



Talrak Construction Chemicals Pvt. Ltd.

An ISO 9001:2015 Certified Company

Works:

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