

Talrakmicrocrete® HS

High strength non shrink free flow cementitious micro concrete



The Construction Alchemists

Description

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

Technical Properties

The following are the typical test results by the w/p ratio of 0.16 at 30°C.

Compressive Strength

Age (days)	24hrs	3 days	7 days	28 days
Compressive strength (MPa)	20	40	55	70

Tensile Strength	2.0MPa @28 days
Flexural Strength	5.0MPa @28 days
Fresh wet density	2150 - 2200kg/m ³ (Mixed density @27°C)
Young's Modulus	25 KMPa
Expansion Characteristics	Unrestrained expansion 1-4%
Pressure to restrain	≈0.004MPa
Co-efficient of thermal expansion	110-12X10 ⁻⁶ /°C

Specification Clause

Performance Specification

The micro-concrete may be specified as follows - The proposed micro-concrete shall be a single component cementitious prepacked powder to which addition of clean water and approved quantity and grade of coarse aggregate if specified / added. The micro-concrete shall be flowable consistency at specified water/powder ratio. The hardened concrete shall attain a compressive strength of not less than -: 12MPa @ 24hours, 40MPa, @ 7 days, 50MPa @ 28 days with normal curing. The unrestrained expansion shall be $1 \geq e \leq 4\%$.

Application Instructions

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 substances should be saturated with clean water. Immediately prior to placing any free water should be removed.

Note: For repair sections generally deeper than 100mm it may be necessary to mix the Talrakmicrocrete® HS 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 course aggregates shall be added to the drymix. The powder and water shall be mixed first and course aggregate in SSD condition shall be added into the wet mix while continuing the stirring operation.

Typical results of Talrakmicrocrete® HS with graded course aggregates of maximum size 12mm.

Talrakmicrocrete® HS : Course aggregate (SSD) (By weight) = 1 : 0.75

Water: Powder ratio - 0.16 (By weight).

Compressive strength (MPa)

Age (days)	24hrs	3 days	7 days	28 Days
Compressive strength (MPa)	22	48	60	75

Workability : Flowable

Note : W/P shall not be increased under any circumstances.

Estimating

Packaging

Talrakmicrocrete[®] HS is supplied in 25kg HDPE bags.

Yield

≈ 13.0ltrs per 25kg bag. Actual yield per bag will depend on the consistency of Talrakmicrocrete[®] HS and quality of course aggregate added.

Storage

Talrakmicrocrete[®] HS 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.



Talrak Construction Chemicals Pvt. Ltd.

An ISO 9001:2015 Certified Company

Works:

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Important note :

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Ref :TCC/TDS/WPI I - R0