

Talrakcrete® TR

Thermal resistant , High strength, Dimensionally stable,
Rheologically fluid , Cementitious Microconcrete



The Construction Alchemists

Description

Talrakcrete® TR is a ready to use pre mix formulated for preparing thermal resistant microconcrete at site supplied in pre-weighed bags. Addition of prescribe amount of clean mixing water at site will yield a rheology controlled, non shrink microconcrete for applications in high temperature exposure conditions. Site addition of basalt graded coarse aggregate of 12.5mm to 4.75 mm conforming to IS:383.

Features & Benefits

- Talrakcrete® TR is a ready to use pre mix formulated for preparing thermal resistant microconcrete at site.
- Free flow and self compacting
- High strength, suitable for most of the structural members
- Cured material resistant to 500°C wet and dry temperature.

Primary Application

Talrakcrete® TR is a microconcrete used for rebuilding of damaged reinforced concrete members exposed to higher temperatures such as blast furnace, chimneys, concrete floors where both wet and dry temperatures with thermal gradients are encountered.

Technical properties*

Compressive Strength (IS : 4031 Part 6) (W/P = 0.14)

Age (days)	1	3	7	28
Minimum Comp. strength	20	35	50	60

Flexural Strength (BS 4551, 1980) : 9 MPa @ 28days

Tensile strength : 2 MPa @ 28 days

Free Expansion : 1-2%

Density : 2250-2350 Kg/m³

* 25 - 30% decrease in mechanical properties will be noticed on exposure to a temperature beyond 500°C.

Specification Clauses

The rebuilding or repairs to the structural members must be carried out with a Chloride free, pre packed cement based temperature resistant micro concrete. Addition of graded coarse aggregate to the wet mix in a prescribed quantity should enable production of concrete to fill large voids / sections. The compressive strength of the cured concrete must exceed 50 MPa at 28 days on exposure to 500°C and cycles of thermal gradients.

Application instructions

Surface Preparation

The substrate must be free from loose / deteriorated concrete/mortar. If reinstatement of the damaged concrete is envisaged, the concrete must be cut back to reach sound, hard un deteriorated concrete. The surface thus obtained shall be blown with compressed air followed by cleaning with pressurized water jet.

Form work

The formwork should be constructed to be leakproof. It can be prepared out of plywood or steel sheets adequately supported with suitable frame to avoid deformation when concrete is placed in it. All joints shall be leakproof.

Mixing

Mechanically powered mixer should be used. When quantities upto 25 kg are used, a slow speed drill fitted with a paddle mixer is suitable. Larger quantities can be mixed using a pan mixer.

First about 3.5 liter of water shall be added to the mixer for every 25 kg of powder (one bag). When the mixer is in operation, the total content of the Talrakcrete™ TR bag should be slowly added into the mixer and the mixing shall be continued to obtain a uniform free flow material. If higher consistency is desired, an additional maximum quantity of 0.5 liter of water may be added.

Graded coarse aggregates of basalt material of 12.5mm-4.75mm conforming to IS:383 grading shall be added to the fluid mix at a proportion of up to 75% by weight of the powder. The coarse aggregate added shall be in a saturated surface dry condition. Mixing shall be continued for a minimum period of 7 minutes after addition of coarse aggregates to get a cohesive and uniform mix. Addition of water in excess quantity over that recommended above is strictly prohibited.

Placing

All the heat sources that may exist around the pouring site shall be shutdown during concreting. The concrete shall be placed at 30°C within 20 minutes of mixing to harness full potentials of the material. Continuous concrete flow is essential. Sufficient concrete must be prepared before starting. The time taken to pour a batch must be regulated to the time to prepare the next one.

Curing

On completion of the concreting operation, exposed areas should be thoroughly cured. This can be done by the use of Talrakcure® WB curing membrane or continuous curing with water and/or wet hessian.

Cleaning

Talrakcrete® TR may be removed from tools and equipment with clean water immediately after use. Cured material can be removed mechanically

Limitations

Low temperature working

When the air or contact surface temperatures are 10°C or falling, warm water (30-40°C) is recommended to accelerate strength development. For ambient temperature below 10°C the formwork should be kept in place for at least 36 hours. Normal precautions for winter working with cementitious materials should then be adopted.

High temperature working

At ambient temperatures above 40°C, cold water (below 20°C) should be used for mixing microconcrete prior to placement. The surrounding temperature at the time of concreting should not exceed 40°C.

Estimating Packaging

Talrakcrete® TR is supplied in 25kg bag.

Yield

Allowance should be made for wastage when estimating quantities required.

The approximate yield per 25 Kg bag @ W/P = 0.14 is 12 Ltrs. for the mix of material as supplied. When coarse aggregates are added the resultant mix volume will increase accordingly.

Storage Shelf life

Talrakcrete® TR has a shelf life of 6 months if kept in a dry store in sealed bags. If stored in high temperature and high humidity, the shelf life may be reduced.

Precautions

Health & Safety instructions

Talrakcrete® TR is alkaline and should not come into contact with skin and eyes. Avoid inhalation of dust during mixing. Gloves, goggles and dust mask should be worn. If contact with skin occurs, wash with water. Splashes on eyes should be washed immediately with plenty of clean water and medical advice sought



Talrak Construction Chemicals Pvt. Ltd.

An ISO 9001:2015 Certified Company

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Ref : TCC/TDS/RE09 - R0