

HIND HSMC

GENERAL PURPOSE, READY TO USE FREE FLOW NON SHRINK CEMENTITIOUS MICRO CONCRETE



DESCRIPTION

Hind HSMC is a ready to use repair mortar in powder form, also termed to be micro concrete is to be added with water and coarse aggregate to obtain a free flow non shrink high strength repair concrete conforming to **BS-4551-1980 & ASTM C827-1987**.

USES

Hind HSMC is used for repairs to damaged reinforced concrete members, for cover replacing concrete, resistance to weathering action, and places where free flow concrete is required to be placed and vibration is difficult. Most suitable for structural repairs of columns, beams by means of encasement, jacketing etc.

ADVANTAGES

- Free Flow
- High Strength
- Pre weighted and packed so site batching faults are minimized.
- Fast strength gain
- Non shrink
- Resistant to weathering action for having low permeability.
- Chloride free.

APPLICATION

Preparation of surface

The surface of old concrete member should be properly prepared by chipping off all the loose concrete, exposed reinforcements should be cleaned and de-rusted manually or mechanically, anticorrosive coating of acrylic or epoxy base like Hind Anti Rust or Hind Anti Rust EZ to be applied on the de-rusted reinforcement, bonding coat based on Epoxy or Polymer latex like Hind Bond EBA or Hind Styrene BR to be applied on the surface of concrete, steel or plywood shuttering to be fixed within the time the bonding coat becomes tacky and does not set.

MIXING

The micro concrete to be mixed in the ratio of 1:0.5 to 1:0.75 (1 part powder of micro concrete chemical : 0.5 to 0.75, 12 mm down silt free stone aggregate) with a Water : Powder ratio of 0.16 .The micro concrete chemical and the coarse aggregate is to be dry mixed thoroughly first and then it is to be slowly poured in pre measured water in a mixing container and stirred thoroughly manually or by a power paddle to obtain a free flow uniform pourable mix.

POURING/PLACING

The mixed material is then poured manually or pumped into the gap between the concrete members and shuttering to get a self compacted screen concrete of thickness between 40mm to 125mm. No vibration is required except gentle tamping by a light weight tool.

PROPERTIES

Compressive Strength (Tested by 70.7mm cubes as per BS 4551-80 & ASTM C 109) Water : Powder Ratio of 0.15 at 30°C	1 day - > 25N/mm ²
	3 days - \geq 35N/mm ²
	7 days - \geq 45N/mm ²
	28 days - \geq 65N/mm ²

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Tensile Strength (ASTM C 496)	3.5 N/mm ² in 28days (W/P Ratio 0.15 @ +30° C)
Flexural Strength as per BS 4551-80 & ASTM C 293	≥ 8.0 N/mm ² in 7 days (W/P Ratio 0.15, Cube 70.6 mm at +30° C)
	≥ 9.0 N/mm ² in 28 days (W/P Ratio 0.15, Cube 70.6 mm at +30° C)
Fresh Wet Density (mixed) at 27° C	2100-2200Kg/m ³
Water Absorption after 24 hours (%)	0.2
Chloride Content	Nil
Expansion as per ASTM C827-1987 & ASTM C 1090	Unrestrained expansion - 1 % to 4%
Young's Modulus	25kN/mm ²
Pressure to restrain Plastic expansion	0.00425kN/mm ²
Thermal Conductivity	1.5W/m°C
Coefficient of Thermal Expansion	10-12 X 10 ⁻⁶ /°C
Shrinkage	No shrinkage after Initial Setting

Typical Results of **Hind HSMC** when used with graded coarse aggregates of size 12mm (maximum) in **SSD conditions**.

Hind HSMC : Coarse Aggregate :: 1: 0.75 (by weight) . Water : Powder Ratio 0.15

Compressive Strength (Tested by 70.7mm cubes as per BS 4551-80 & ASTM C 109)	1 day - > 28 N/mm ²
	3 days - > 40 N/mm ²
	7 days - > 50 N/mm ²
	28 days - > 70 N/mm ²
Workability	Flowable

Note: Water powder ratio should not be increased under any conditions.

CONSUMPTION

25 Kg of **Hind HSMC** will yield approximately 13.0 Litre fluid grout. The actual yield will depend on the quantity of coarse aggregate added.

PACKING

5, 25 & 50 Kg in HDPE Bags

SHELF LIFE

Best before **6 months** from the date of manufacture in unopened condition. Should be stored in a cool and dry place away from direct sunlight at temperature ranging between 2° C (Min.) and 40° C (Max).

HANDLING PRECAUTION

Hind HSMC is non-toxic and ingestion is to be avoided. If contacts with eyes occur, wash well immediately with water and seek medical advice.

IMPORTANT NOTICE :

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