

CEMSCREED HM (F)

General purpose fibre reinforced shrinkage compensating cementitious micro concrete

BENEFITS

- Compensates for shrinkage in the plastic stage
- Can be pumped or poured into restricted locations
- Highly fluid to allow placement without vibration
- Prepacked and factory-controlled to overcome site-batched variations
- Rapid strength gain to facilitate early reinforcement
- High ultimate strength and low permeability of cured repair
- Does not contain any corrosive chemicals
- Ensures high tensile strength
- Specially reinforced with polypropylene fiber
- Cost-effective
- Enhanced durability

STANDARD COMPLIANCE

CEMSCREED HM (F) complies with ASTM C 157-93, BS 6319 Part 3 & 7, BS 1881 Part 116, 121, and DIN 1048 Part 5.

DESCRIPTION

CEMSCREED HM (F) is supplied as a ready-to-use blend of dry powders which requires only site addition of water to produce a free-flowing, non-shrink repair micro concrete. The material is based on Portland cement, graded aggregates, fillers, and additives which impart controlled expansion characteristics in the plastic stage while minimizing water demand. The low water requirement ensures high early strength and long-term durability. For larger repairs, mixed **CEMSCREED HM (F)** can be modified by the addition of up to 50% - 10 to 12 mm clean, graded, saturated, surface-dry aggregates on site by weight in the material.

USES

CEMSCREED HM (F) is suitable for mass infill and structural repairs in all types of load-bearing situations.

Typical applications include, but are not limited to, the following:

- Repairs to columns suffering from major loss of section
- Soffit repairs where heavy load-bearing is required

- Repairs in restricted access areas where the use of hand-applied mortars would prove impractical
- Repairs requiring high fluidity, e.g., heavily congested steel or repairs into re-entrant angles/concealed voids
- Any repairs requiring significant levels of load-bearing
- Beam and column jacketing (up to 150 mm thickness)

PROPERTIES

Expansion (unrestrained)	0.8 - 1.5% by volume
Fresh wet density	2200 kg/m ³
Flexural strength (ASTM C 239-79)	~8 N/mm ² @ 28 days
Pot life	20-25 mins at 30°C & humidity < 60% RH

The following test results were obtained at different water/powder ratios.

Age in days	Compressive Strength kg/cm ²	
	Water powder ratio 0.18 flowable	Water powder ratio 0.16 Pourable
1 day	150	200
3 days	375	400
7 days	400	500
28 days	550	650

APPLICATION

Surface Preparation: The unrestrained surface of the repair should be kept to a minimum. Defective concrete surfaces should be cut back to a sound base. Smooth surfaces should be mechanically roughened. Corroded reinforcement should be exposed around its full circumference, and all loose scale and corrosion deposits should be removed.

Application: Apply one coat of **SAFECORE R** to the exposed reinforcement. If any discontinuity in the applied film is noticed, one more coat must be applied. The concrete substrates should be saturated with water prior to immediate placing, and free water should be removed. For structural repair, use **FAIRBOND EP** as a primer, and for non-structural repair, use **FAIRCRETE SB(L)** as a primer.

Formwork: Formwork should be leak-proof when subjected to hydraulic pressure imposed by the micro concrete. Provision should be made for air vents to prevent air entrapment and drainage outlets for presoaking. Formwork should be coated with **SETRELEASE**, a mould-releasing agent, prior to fixing.

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Mixing and Placing: Care should be taken to ensure that **CEMSCREED HM (F)** is thoroughly mixed in a suitably sized drum with a torque (400-500 RPM) rotary drill fitted with a mixing paddle. The addition of graded aggregate, where specified, should be done after the water and **CEMSCREED HM (F)** have been properly mixed. **Placing:** The mixed material should be placed immediately. If placed by pump, standard concrete pumping procedures should be followed.

Curing: Curing should start within 2 hours, and the minimum curing time should be the same as that for concrete (7 days) as a cementitious material.

Low Temperature: In cold conditions down to 15°C, the use of warm water (up to 30°C) is advisable to accelerate strength development.

PACKING & YIELD

CEMSCREED HM (F) is available in 25 kg bags yielding 12 liters.

SHELF LIFE & STORAGE

CEMSCREED HM (F) will have a shelf life of **12 months** in unopened containers when kept in dry conditions at a temperature between 5°C and 35°C. The material must be kept in a shaded area and away from direct sunlight. Storage at higher temperatures or high humidity may reduce shelf life.

HEALTH & SAFETY

CEMSCREED HM (F) is non-toxic but mildly alkaline. To protect the skin, gloves and dust masks should be used. In case of contact with skin or eyes, wash with clean water and seek medical advice.

SPECIFICATION

Providing and applying **CEMSCREED HM(F)**, fiber-reinforced, shrinkage-compensating cementitious micro concrete manufactured under compliance with ISO 9001, ISO 14001, and ISO 45001 (Occupational Health and Safety) certified by ISOQAR / UK. It is ready-to-use, has a compressive strength of 65 N/mm² @ 28 days, expansion of 0.8-1.5%, fresh wet density of 2200 kg/m³, and flexural strength @ 28 days of ~8 N/mm² (ASTM C 239-79), used in accordance with the guidelines of CHEMCORE.

QUALITY ASSURANCE

Fairmate manufactures entire range of construction chemicals under compliance of ISO 9001, ISO 14001 & ISO 45001 (Occupational Health and Safety) certified by ISOQAR/UK.

TECHNICAL SERVICES

While new advances and changes will take place but one thing will never change is quality and meeting special needs of our customers. Our quality control laboratory and technical experts are available to provide additional information and technical assistance. We are eager to work with you in development of new product and resolve your problem.

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