DARAFILL® LS

Controlled Low Strength Material (CLSM) Performance Additive

Product Description

DARAFILL® LS additive produces flowable fill or engineered Controlled Low Strength Material (CLSM)* that is highly flowable, volume stable and excavatable in the future. By developing a stable air matrix in the CLSM mixture, DARAFILL® LS improves fluidity and requires no compaction equipment.

DARAFILL® LS is available packaged in one litre bags to treat one cubic meter of concrete or in larger packaging for dosing through a liquid dispenser.

* CLSM may be referred to as “Flowable Fill”, “Controlled Density Fill” or “Cement Stabilised Sand” in different geographical areas.

Method Of Use

The use of DARAFILL® LS produces a low water content CLSM that is primarily used to improve flowability, lower densities, eliminate segregation and settlement, and control strength development in applications where future excavation is required.

DARAFILL® LS is designed to be used with Portland cement, fly ash and ground granulated blastfurnace slag. CLSM produced using DARAFILL® LS is a cost-effective alternative to soil backfill.

DARAFILL® LS and CLSM Applications

DARAFILL® LS is designed for CLSM mixtures and is not recommended for use in conventional concrete. DARAFILL® LS offers the following benefits:

- Safe, efficient, non-corrosive fill material for trenches, tanks and pipes
- Self-levelling and high lateral flow fills for trenches, undercuts and voids
- Fill for civil engineering and building foundations
- Cost-effective in comparison to compacted soil by increasing efficiency of labour and equipment
- Flexible, mix designs to suit requirements
- Minimises settlement in comparison to compacted soil backfill

Performance

The addition of DARAFILL® LS generates stable air contents of 15 to 25% and significantly reduces mix water requirements by as much as 50%, producing concretes with a final density of 1500 – 1800 kg/m^3. When used as recommended, DARAFILL® LS enhances plastic and
hardened properties of CLSM accordingly:

- Provides a CLSM which is highly flowable with no segregation
- Controls strength development for future excavatability, usually in the range of 0.5 to 1.5 N/mm² depending on the application requirements
- Increases yield of materials up to 25%
- Provides densities in the range of 1500 to 1800 kg/m^3
- Aids pumpability and minimises segregation in the pump between loads. Pre-job testing with actual equipment and intended configuration is strongly recommended
- Reduces buoyancy problems in CLSM around embedded pipes and tanks when compared to water-based CLSM.

Storage, Addition Rate, Dispensing and Mix Designs

Store DARAFILL® LS for 2 years in original unopened packaging, above freezing, away from heat sources and out of direct sunlight. Addition rates are typically one litre DARAFILL® LS to dose 1.0 m^3 of CLSM. DARAFILL® LS is supplied in pouches containing one litre. The
contents of DARAFILL® LS pouches are added to the CLSM load typically at one litre per m^3. DARAFILL® LS should be added directly into the mixer after the CLSM load is batched. For optimisation of freight volumes, add DARAFILL® LS at the job site. CLSM with DARAFILL® LS reaches optimum consistency when the mixture reaches a creamy, flowing appearance. For central mix operations, add the contents of DARAFILL® LS pouches into the central mixer and not into trucks to ease discharge from the central mixer. Alternatively DARAFILL® LS is supplied in 1000 litres (in IBC) or 220 litre drums and is added to the premixed concrete on site in the mixer truck at a dosage rate of 1 litre per m^3 of concrete. Mix design information may be obtained from GCP Applied Technologies.

Typical Properties

DARAFILL® LS	
Appearance	Liquid

Specification

Material for backfill operations shall be cementitious Controlled Low Strength Material mixtures as supplied by concrete producer and contain DARAFILL® LS CLSM Performance Additive, as manufactured by GCP. Mixture ingredients and proportions shall be submitted for
approval. DARAFILL® S CLSM Performance Additive shall be added by the concrete producer personnel as per manufacturer's recommendations.

Technical Service

Our Technical Service department of GCP Applied Technologies is available to assist you in the correct use of our performance chemicals.

GCP Applied Technologies (UK) Ltd, Gate St, Dukinfield SK16 4RU.

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gcpat.uk/solutions/products/darafill-ls