

Shieldrep SCLA

Shrinkage-compensated, Self-compacting, Micro Concrete for Repairs with Thicknesses (50 – 500) mm
(Formerly Known as Repflow SCLA)



Description

Shieldrep SCLA is a single-component, cement-based free-flowing, low-alkali micro-concrete, supplied as a ready-to-use blend of dry powders that requires the addition of clean water on site. **Shieldrep SCLA** is designed to produce high consistency, self-compacting, and low-alkali concrete repair at thicknesses (50 – 500) mm.

Uses

- Repair zones with heavily congested steel reinforcement.
- Reinstatement of large, structural sections of concrete.
- Repairs to concrete affected by alkali-silica reaction, chloride attack, and carbon dioxide.

Characteristics / Advantages

- Factory-controlled, pre-blended dry mix that requires the addition of water.
- Pourable and pumpable.
- Low Alkali content.
- Flowable, self-leveling, and self-compacting, ensures the highest effective bonding area.
- Non-shrink characteristics.
- Low permeability.

Standard Compliance

EN 1504-3: Class R4, Principles 3.2, 7.1, 7.2

Packaging

Shieldrep SCLA is supplied in 25 kg bags.

Safety Instructions

Shieldrep SCLA contains hydraulic cement and may cause irritation to the skin or eyes. Refer to the most recent Material Safety Data Sheet for information and advice on the safe handling, storage, and disposal of the product.

Typical Properties

Color / Appearance	Grey Powder
Application Thickness	50 – 500 mm
Mixed Density (@ 23°C)	2.30 ± 0.10 g/ml
Maximum Aggregate Size	6 mm
Working Time (@ 23°C)	Approx. 30 minutes
Setting Time (@ 23°C) (EN 196-3)	Initial: 3:30 hours Final: 5:30 hours
Flow (Brass Cone)	Initial: 18 – 24 cm After 10 min: 15 – 22 cm
Yield / 25 kg bag	~ 12.5 Liters
Compressive Strength (EN 12190) @ 1 day @ 7 days @ 28 days	≥ 25.0 MPa ≥ 45.0 MPa ≥ 80.0 MPa
Flexural Strength (ASTM C348) @ 28 days	≥ 10.0 MPa
Bond Strength (EN 1542)	≥ 2 MPa
Chloride Ion Content (EN 1015-17)	0.02%
Contrasted Expansion / Shrinkage (EN 12617-4)	Bond strength ≥ 2.1 MPa (Substrate Failure)
Carbonation Resistance (EN 13295)	75% ($d_k < \text{control sample MC (0,45)}$)

Shelf Life and Storage

Shieldrep SCLA has a shelf life of 12 months when stored in its original unopened packaging in cool and dry conditions, protected from direct sunlight, heat, and moisture. Shelf life may be reduced if the recommended storage conditions are not followed.



Application Instructions

1. Surface Preparation

The substrate must be free from dust, loose materials, surface contamination, and any materials that may reduce bond or prevent adhesion of the micro concrete. Remove damaged concrete by suitable means. Remove by suitable means from any exposed steel reinforcement; rust, scale, mortar, concrete, dust and any other loose or deleterious material which reduces bond or contributes to corrosion. Metal surfaces should be free from scale, rust, oil, and grease using abrasive methods. Zinc-rich primer can be used for better adhesion.

Prior to application, thoroughly saturate the concrete surface to provide a saturated surface dry condition (SSD). Poor quality concrete may require soaking for a significant time. Any surface water should be removed using an oil-free compressed air jet. Apply a water-based bonding agent to enhance adhesion.

2. Formwork

Design a formwork (Shutter) according to the dimensions of the repair area. Ensure the inner surface is clean and apply a solvent-based release agent (**Shield Easymold S**) for easy de-molding.

3. Mixing

Shieldrep SCLA requires 3.30 liters of potable water per 25 kg bag. For optimum results, mixing should be performed using a forced action mixing paddle, powered by a heavy-duty electric mixing drill.

Add the pre-measured amount of water to a clean mixing bucket.

Add the **Shieldrep SCLA** powder slowly to the water whilst mixing and continue mixing for 3 - 5 minutes until a smooth, homogenous, lump-free consistency is achieved.

4. Application

Pour or pump the mixed material of **Shieldrep SCLA** into the formwork slowly and in one continuous operation, to avoid air entrapment.

If placing by pump, ensure that best concrete pumping practice is followed i.e., fresh grout lining of pump and hoses/pipeline prior to commencement of application. It is advised to start pumping immediately and finish within 10 – 15 minutes of mixing.

5. Cleaning

All mixing and application equipment should be cleaned immediately with clean water. Hardened material should be mechanically removed.

6. Curing

After setting of **Shieldrep SCLA** (24 – 48 hours), remove molds carefully and treat the exposed surfaces with a curing compound (**Shieldcure AB**) or use other approved curing methods such as polyethylene sheeting or wet hessian.

Limitations

- Do not apply the product if the ambient temperature is less than 5°C.
- Hot weather practices should be adopted during application and curing if the temperature is above 35°C. In hot conditions, store the material in a cool environment prior to mixing.

Technical Support

Refer to technical information, method statement, or contact technical support team for any inquiry.

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