Shieldfloor CML40

Self-levelling, Cement-based Underlayment for Thicknesses (6 – 40) mm

TECHNICAL DATA SHEET

Description

Shieldfloor CML40 is a single-component, self-leveling, cement-based underlayment, that consists of a blend of specially selected types of cement, graded aggregates, polymers, and additives. It is supplied as a dry, grey powder, and only requires the addition of clean water on site. **Shieldfloor CML40** is designed to eliminate surface irregularities and provide smooth internal and external concrete surfaces and can be applied manually or using a pump at thicknesses from 6 – 40 mm to achieve rapid, flat, and economic substrate, prior to final floor finish application.

Uses

- Indoor applications.
- Light industrial and forklift-trafficked floors.
- Garages, workshops, and warehouse floors.
- Refinishing old floors.
- Levelling of uneven subfloors.
- Can be used as a screed for exterior areas when sealed with an appropriate covering such as coatings.
- Filling, smoothing, and leveling of floors prior to the application of parquet, ceramic tiles, seamless resin floors, textile, or elastic floor coverings.

Characteristics / Advantages

- High fluidity for easy placement.
- Pumped or manual application.
- Good surface appearance and hardness.
- Excellent underlay for resinous coatings, tiles, sheet systems, and wood floor bonding systems.
- Can be used as a wearing surface/ course.
- Self-leveling and self-smoothing properties.
- Rapid drying, low odor, and low shrinkage characteristics.
- Suitable for underfloor heating systems.

Standard Compliance

EN 13813: CT-C35-F6

Safety Instructions

Shieldfloor CML40 may cause irritation to 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
Maximum Aggregate Size	1.0 mm
Fresh Wet Density (@ 23°C)	2.20 ± 0.1 g/ml
Working Time (@ 23°C)	15 minutes
Ready to Walk On (@ 23°C)	1 hour
Flow Properties (EN 12706) (30 mm ø x 50 mm ring)	(100 – 140) mm
Setting Time (EN 196-3)	Initial: 45 minutes Final: 60 minutes
Compressive Strength (EN 13892-2)	> 15 MPa @7 days > 37 MPa @ 28 days
Flexural Strength (EN 13892-2)	> 4 MPa @7 days > 6 MPa @ 28 days
Yield	13.5 L for 25-kg bag 10.5 L for 20-kg bag

Packaging

Shieldfloor CML40 is supplied in 20 and 25-kg bags.

Shelf Life and Storage

Shieldfloor CML40 has a shelf life of 12 months when stored in original unopened packaging in cool and dry conditions, protected from direct sunlight, heat, and moisture. Shelf life may be reduced if the recommended conditions are not followed.

Shieldfloor CML40 must be stored at room temperature (20 –25°C) prior to use. Transportation vehicles should be shaded to protect the bags from heat, especially for long-distance deliveries.

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Application Instructions

1. Surface Preparation

The substrate must be fully cured, sound, and free from dust, loose materials, grease, surface contamination, and any materials that may reduce bond or prevent adhesion. Light scabbling or grit blasting is recommended to provide a roughened key for the underlayment.

Concrete surfaces must be soaked with water to provide SSD condition. Poor quality concrete may require soaking for a significant time. Any excess water should be removed by suitable means prior to application. Substrate and application temperature is +5 to +35 °C.

2. Priming

Priming is necessary to provide a prepared surface to receive the underlayment and to increase the bond of **Shieldfloor CML40** to the substrate. Always prime the surface with **Shieldbond AB30** diluted 1:1 when applied on non-porous substrates, for porous substrates, do not dilute and apply it using a brush, roller or sprayer and apply the underlayment after a minimum of 1 – 2 hours, if the waiting time exceeds 24 hours, another primer coat must be applied. If the concrete surface absorbs the first coat of primer, a second coat should be applied until a visible primer layer remains on the surface.

To increase the thickness of the flooring system, a layer of **Shieldfloor CMS100** can be applied at a thickness of up to 100 mm, then a bonding layer of **Shieldbond AB30** is applied before the application of **Shieldfloor CML40.**

3. Mixing

Manual Application:

Shieldfloor CML40 requires 4.5 – 5.0 liters of potable water per 25 kg bag (or 3.6 – 4.0 liters per 20 kg). 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 **Shieldfloor CML40** powder slowly to the water whilst mixing and continue mixing for 2 – 3 minutes until a homogenous, lump-free consistency is achieved. Allow the mixed material to stand for 1 – 2 minutes prior to use.

Pumped Application:

It is recommended to use a conventional floor screed dual-stage mixer and pump, controlling the water dosage to achieve a flowable consistency.

4. Application

Apply the mixed material, in a single pass, by pouring or pumping it onto the prepared/primed surface. Allow the material to spread and give the required thickness using a rake or trowel.

Roll the material thoroughly with a long-spiked roller in two directions to remove any entrapped air bubbles and smooth out any flow lines.

For the best results, pouring and leveling should be carried out in one continuous process.

The optimum timeline for applying the following coverings:

Sealer: after 24 hours.

Ceramic tiles and **parquet**: after 48 hours.

Epoxy (solvent-free or solvent-based coating) for indoor applications: 72 hours after making sure the moisture content does not exceed 2%.

5. Cleaning

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

6. Curing

Shieldfloor CML40 is self-curing, but as with all cement-based products in hot weather, take adequate measures to protect from exposure to direct sunlight or hot winds, and should be covered completely within a polyethylene sheet for 3 days.

Don't use water spray or liquid membrane curing compounds as it may affect texture or prevent bonding of subsequent layers.

The ambient and surface temperatures must remain between 5°C and 35°C during and after application for at least 48–72 hours. Keep windows, doors, and ventilation systems closed during the first 24 hours to reduce water evaporation

Consumption

(For 20 and 25 kg bags)

1.80 – 1.90 kg/m^2/1 mm thickness.

18 – 19 kg/m^2/10 mm thickness.

72 – 76 kg/m^2/40 mm thickness.

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Coverage

13.5 m^2 at 1 mm thickness for 25 kg bag.
10.5 m^2 at 1 mm thickness for 20 kg bag.

1.35 m^2 at 10 mm thickness for 25 kg bag.
1.05 m^2 at 10 mm thickness for 20 kg bag.

0.34 m^2 at 40 mm thickness for 25 kg bag.
0.26 m^2 at 40 mm thickness for 20 kg bag.

Limitations

- **Shieldbond AB30** must be used to increase the adhesion of the underlayment. For any other bonding agent, check compatibility before application.
- 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 application. The working area should be covered in case of harsh weather such as heavy rain, strong winds, dust, etc.
- Not to be used on floors known to suffer from rising damp, unless treated with a suitable damp-proof membrane.
- Do not exceed the maximum recommended water content and only use clean potable water.
- Not suitable for slopes or inclines > 0.5
- If relative humidity (RH) exceeds 80%, a moisture-barrier epoxy primer must be used before application.
- Do not switch on the underfloor heating system for at least 7 days after application. After that, start heating at a low temperature (around 20°C) for 2–3 days, then increase the temperature gradually, with no more than 5°C per day. Do not reach the full system temperature before 10 to 14 days have passed.

Technical Support

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

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