



# Model Specification for Installation of Tekcem 220 Leveller onto Concrete Substrate Using Two Coats of Tekcem SF Membrane with Quartz Scatter (Bonded System)

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## 1. Substrate Requirements

### Substrate Type:

Concrete slab suitable for bonded self-levelling applications.

### Minimum Compressive Strength:

25 MPa.

### Condition:

- Structurally sound, stable, and free from cracks or debonded areas.
  - Clean and dry, with no standing water or surface contamination.
  - Free from laitance, oil, grease, curing compounds, or other residues.
  - Surface relative humidity (RH) must be < 97 % in accordance with BS 8203.
  - Flat and true; significant deviations must be corrected prior to application.
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## 2. Mechanical Surface Preparation

### Method:

Mechanically abrade the substrate by vacuum-assisted shot blasting or diamond grinding to expose a clean, open-textured surface.

### Cleaning:

Remove all dust and debris using industrial vacuum equipment.

### Moisture Testing:

Confirm surface RH < 97 %.

If higher, allow the slab to dry further before application.

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## 3. Primer Application (Two Coats Tekcem SF Membrane + Quartz Scatter)

### Primer:

Tekcem SF Membrane – two-component, solvent-free epoxy surface membrane for moisture control and improved adhesion.

**Preparation:**

- Mix both components thoroughly using a slow-speed drill and paddle until a uniform colour and consistency is achieved.
- Ensure substrate temperature is between 10 °C and 25 °C and at least 3 °C above dew point.

**Coat 1 (Red):**

- Apply the **first red coat** evenly by roller or brush at a nominal coverage rate of **3 m<sup>2</sup>/kg**.
- Ensure full, even coverage with no pinholes or missed areas.
- Allow to cure until **tack-free** (approx. 6 hours @ 20 °C).

**Coat 2 (Black + Quartz Scatter):**

- Apply the **second black coat** at a nominal coverage of **4 m<sup>2</sup>/kg** using a roller or brush.
- While still **wet**, broadcast **0.7 – 1.2 mm Tekcem Quartz** across the entire surface at approx. **2 kg/m<sup>2</sup>** to achieve a full blind finish.
- Allow to **fully cure (typically 12 – 14 hours @ 20 °C)**.
- Once cured, remove all loose quartz by sweeping and vacuuming prior to applying Tekcem 220+.

**Conditions:**

Apply in well-ventilated conditions. Substrate and ambient temperatures must remain between 5 °C and 30 °C.

Avoid condensation and direct heat during curing.

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## 4. Tekcem 220 Leveller Specification

**Product:**

Tekcem 220 Leveller – rapid-setting, cement-based, protein-free, shrinkage-compensated smoothing compound.

**Water Addition:**

5.6 – 6.0 litres per 25 kg unit.

Do not exceed 6 litres to prevent strength loss or delayed drying.

**Properties:**

- Working time: 20 – 30 minutes @ 20 °C
- Light foot traffic: ~ 2 – 3 hours @ 20 °C
- Floor finishes: after 24 hours @ 3 mm
- Compressive strength: > 12 MPa (1 day), > 25 MPa (7 days), > 28 MPa (28 days)
- Flexural strength: > 4 MPa (1 day), > 6 MPa (7 days), > 7 MPa (28 days)

**Thickness Guidelines (Bonded Systems):**

Minimum 2 mm, maximum 20 mm in a single application.

For thicker sections, apply in multiple layers, re-priming as required.



## 5. Screed Application

### Mixing:

Add powder gradually to clean water while mixing with a slow-speed drill and paddle or screed pump.

Mix until uniform and lump-free.

Allow to stand for 2 minutes, then re-mix briefly and apply immediately.

Use within 30 minutes of mixing.

### Placement:

Pour or pump onto the cured, quartz-seeded SF Membrane.

Spread evenly using a steel trowel and finish with a spiked roller to remove trapped air.

### Environmental Conditions:

Substrate temperature 5 – 30 °C; ambient RH < 75 %.

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## 6. Post-Installation

### Drying & Overlay:

- Light foot traffic: after ~ 2 – 3 hours @ 20 °C
- Tiled finishes: after 3 hours @ 3 mm
- Other floor finishes: after 24 hours @ 3 mm
- Ensure substrate moisture and surface RH are within limits before installing floor finishes.

### Drying Guidance:

At 3 mm, typical drying time is 3 – 4 hours in good ventilation.

Cool or humid environments will extend drying time.

### Curing:

No curing membrane required; avoid accelerated drying caused by heaters or air movement.

### Access:

Light traffic after 2 – 3 hours; full traffic after 24 hours.

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## 7. Limitations

- Do not apply below 5 °C or above 30 °C.
- Not suitable for permanently immersed or submerged areas.
- Substrate RH must be < 97 %.
- Tekcem SF Membrane must be fully cured and quartz-seeded prior to levelling.
- Follow all coverage, curing, and preparation guidelines exactly.



## 8. Disclaimer

The information provided in this specification is based on Tekcem's experience and current knowledge and is given in good faith to assist in specifying the installation of Tekcem products. It does not replace the need for appropriate design, professional judgement, and proper site evaluation. Tekcem Ltd accepts no liability for the improper use of its products or deviation from the recommended guidelines.

Site conditions, working methods, substrate types, and application techniques can all vary significantly and are beyond Tekcem's control. Therefore, it is the responsibility of the contractor and/or installer to ensure that the products are suitable for the specific conditions of each individual project.

This specification does not relieve the user of the responsibility to carry out appropriate checks, tests, and quality assurance procedures prior to and during application.

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