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

1. Substrate Requirements

Substrate Type:
Concrete slab suitable for bonded self-levelling systems.

Minimum Compressive Strength:
25 MPa.

Condition:
- Structurally sound, stable, and free from movement or cracks.
- Free from laitance, oil, grease, dust, curing compounds, and contaminants.
- Surface relative humidity (RH) < 85 % in accordance with BS 8203.
- Flat, true, and level; major deviations corrected before priming.
- No standing or trapped moisture.

2. Mechanical Surface Preparation

Method:
Mechanically abrade the surface using vacuum-assisted shot blasting or diamond grinding to expose a clean, textured profile.

Cleaning:
Remove all dust and debris using an industrial vacuum.

Moisture Testing:
Confirm substrate RH < 85 % prior to application.
If readings exceed this, use a two-coat SF Membrane system instead (see Specification No. 6).

3. Primer Application (One Coat Tekcem SF Membrane + Quartz Scatter)

Primer:
Tekcem SF Membrane – two-component, solvent-free epoxy surface membrane designed to control residual moisture and provide excellent adhesion to concrete.

Preparation:
• Mix both components thoroughly with a slow-speed drill and paddle until a consistent colour is achieved.
• Ensure substrate temperature is between 10 °C and 25 °C and at least 3 °C above dew point.

Application:
• Apply **one uniform coat** of Tekcem SF Membrane using a roller or brush at a nominal coverage of **3 m²/kg**.
• While the membrane is still **wet**, broadcast **0.7 – 1.2 mm Tekcem Quartz** across the entire surface at approximately **2 kg/m²** to achieve a full blind finish.
• Allow the membrane to **fully cure (typically 12 – 14 hours @ 20 °C)**.
• Once cured, remove all loose quartz by sweeping and vacuuming prior to levelling.

Conditions:
Apply only to clean, dry concrete. Ambient and substrate temperature 5 – 30 °C; RH < 75 %. Avoid condensation or direct sunlight during curing.

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4. Tekcem 220 Leveller Specification

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

Water Addition:
5.5 litres per 25 kg unit.
Do not exceed 6.0 litres to maintain performance.

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 greater thickness, apply in layers, re-priming between coats.

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5. Screed Application

Mixing:
Add powder gradually to clean water while mixing with a slow-speed drill and paddle or screed pump.
Mix until homogeneous and lump-free.
Allow to stand for 2 minutes, then re-mix and apply immediately.
Use within 30 minutes of mixing.

Placement:
Pour or pump onto the primed and quartz-seeded substrate.
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: ~ 2 – 3 hours @ 20 °C
- Tiled finishes: after 3 hours @ 3 mm
- Other floor finishes: after 24 hours @ 3 mm
- Ensure residual moisture is within limits before installing moisture-sensitive coverings.

Drying Guidance:
At 3 mm, typical drying time 3 – 4 hours under good ventilation.
Low temperature or high humidity will extend drying.

Curing:
No curing membrane required; avoid rapid drying from heat or airflow.

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 wet or immersed areas.
- Ensure substrate RH < 85 % before priming.
- Only use Tekcem SF Membrane and Tekcem Quartz Scatter as specified.
- Follow all mixing and curing guidelines to prevent debonding.

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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