Model Specification for Installation of Tekcem Ultra Screed onto Beam and Block Floor Using Tekcem SF Membrane (Two-Coat System)

1. Substrate Requirements

- **Substrate Type**: Precast **beam and block floor** system.
- **Minimum Compressive Strength**: 25 MPa for the blocks and beams.
- **Condition**:
  - Surface must be **sound**, **solid**, and **continuous**.
  - **All voids, joints, gaps, or holes** in the floor must be **fully grouted** and made flush to ensure a **complete solid base**.
  - Free from dust, laitance, oil, grease, curing agents, and other contaminants.
  - Reasonably flat and true; sudden changes in level must be avoided.

2. Mechanical Surface Preparation

- Mechanically prepare the beam and block surface by **vacuum grit blasting** or suitable mechanical abrasion.
- Remove all laitance, surface dust, debris, oil, grease, and any other contaminants.
- Ensure a textured, clean, and absorbent surface that will promote adhesion.
- **Moisture Testing**:
  - Test in accordance with **BS 8203**.
  - Tekcem SF Membrane two-coat system can accommodate a surface RH of up to **97%**.

3. Application of Tekcem SF Membrane (Two-Coat System)

- **Mixing**:
  - Thoroughly mix the curing agent into the base resin for at least 2 minutes until uniform.
- **First Coat**:
  - Apply the **first coat** of Tekcem SF Membrane evenly by brush, roller, or squeegee at approximately **3 m²/kg**.
  - Allow the first coat to **fully cure** — typically overnight (approximately 14 hours at 20°C).
  - Before applying the second coat, ensure the surface is clean, dry, and free from contamination.
- **Second Coat**:
  - Apply the **second coat** of Tekcem SF Membrane evenly at approximately **4 m²/kg**.
  - **Screeding must commence wet-on-wet**: install the screed while the second coat is still wet (typically within **30 minutes** of application).
- **Traffic Control**:
  - **No trafficking** of the wet second coat is permitted to prevent surface contamination and bond failure.

4. Tekcem Ultra Screed Specification

- **Mix Design (per m^3)**:
  - 400 kg Cement (CEM I, 42.5N)
  - 1600 kg 0–4 mm Screeding Sand (to BS EN 13139)
  - 2400 ml Tekcem Ultra Admixture
  - 55–60 litres Water (adjusted for aggregate moisture)
  - 1 kg PP fibres (recommended for areas with underfloor heating).
- **Consistency**:
  - Semi-dry; material should form a ball when squeezed without bleeding water .
- **Working Life**:
  - 45–60 minutes from mixing.
- **Thickness**:
  - Minimum: **15mm**
  - Maximum: **40mm**

5. Screed Application

- **Method**:
  - Spread Tekcem Ultra screed directly onto the **wet second coat** of SF Membrane.
  - Tamp, float, and steel trowel to consolidate and finish the screed surface.
- **Compaction**:
  - Thorough compaction must be achieved throughout the depth to eliminate voids and maximise bond.
- **Environmental Conditions**:
  - Substrate temperature: **5°C to 30°C**.
  - Ambient relative humidity: **below 75% RH**.

6. Post-Installation

- **Protection**:
  - Protect the screed from direct sunlight, draughts, frost, and excessive drying for the first 24 hours.
- **Access**:
  - Light foot traffic after 12–24 hours.
  - Full site traffic after 72 hours.
- **Floor Finishes**:
  - Confirm residual moisture content before installing any floor finishes (typically ≤75% RH).

7. Limitations

- Tekcem SF Membrane must be applied as a **two-coat system** when bonding screed to beam and block floors.
- Screeding must occur **wet-on-wet** onto the freshly applied second coat.
- Fully grout all voids and joints in the floor before SF Membrane application to ensure a complete solid surface.
- Do not apply SF Membrane or screed below 3°C.

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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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