Model Specification for Installation of Tekcem Ultra Screed Bonded to Concrete Using Tekcem SF Membrane

1. Substrate Requirements

- **Substrate Type**: Concrete slab.
- **Minimum Compressive Strength**: 25 MPa.
- **Condition**:
  - Sound, clean, and dry with no pooling water.
  - Free from dust, laitance, oil, grease, and other contaminants.
  - Reasonably flat and true – avoid sudden changes in level.

2. Mechanical Surface Preparation

- Mechanically prepare the concrete substrate by **vacuum grit blasting** or equivalent.
- Remove all laitance, dust, dirt, oil, grease, curing agents, and any other contaminants.
- Ensure a clean, open-textured surface to promote mechanical bonding.
- **Moisture Testing**:
  - Perform surface moisture testing according to **BS 8203**.
  - For **bonding coat applications**, surface relative humidity (RH) must be **≤85%**.
  - If the RH exceeds 85% but is **≤97%**, apply the **Tekcem SF Membrane as a two-coat system** following Tekcem's full DPM guidance.

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

- **Mixing**:
  - Combine the curing agent into the base resin and mix for a minimum of 2 minutes to achieve a uniform colour and consistency.
- **Application**:
  - Apply **one even coat** of Tekcem SF Membrane by brush, roller, or squeegee at approximately **3 m²/kg**.
  - Ensure even coverage with no dry patches or puddling.
- **Timing**:
  - Screed must be laid **wet-on-wet** onto the membrane.
  - Begin screeding **within 30 minutes** of applying the SF Membrane to maximise bond strength.
- **Traffic Control**:
  - **No foot or material traffic** is permitted on the wet SF Membrane.
  - Trafficking will contaminate the membrane and compromise adhesion.
- **Screeding Process**:
  - Prepare, mix, and place the screed immediately after applying the SF Membrane.

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 underfloor heating areas).
- **Consistency**:
  - Semi-dry; mix should form a ball when squeezed without releasing free water .
- **Working Life**:
  - 45–60 minutes after mixing.
- **Thickness**:
  - Minimum: **15mm**
  - Maximum: **40mm**

5. Screed Application

- **Method**:
  - Spread screed directly onto the **wet Tekcem SF Membrane**.
  - Tamp, float, and finish as appropriate to achieve compaction and surface finish.
- **Compaction**:
  - Ensure full depth compaction without voids.
- **Environmental Conditions**:
  - Substrate temperature: **5°C to 30°C**.
  - Ambient relative humidity: **below 75% RH**.

6. Post-Installation

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

7. Limitations

- A **single-coat SF Membrane** system is suitable only where RH ≤85%.
- If RH is between 85–97%, a **two-coat SF Membrane** system must be used.
- Screed must be applied **wet-on-wet** to freshly applied, uncured membrane.
- Do not apply Tekcem SF Membrane or Tekcem Ultra screed if ambient or substrate temperatures are below 3°C or risk falling below during curing.

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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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