



Model Specification for Installation of Tekcem Tekscreed as a Floating Screed Over PIR Insulation with Underfloor Heating (Using 500-Gauge Separating Membrane)

1. Substrate Requirements

Substrate Type:

PIR (polyisocyanurate) rigid insulation board.

Insulation Specification:

- Minimum compressive strength: 100 kPa.
 - PIR must be suitable for use beneath cementitious screeds.
 - Lay boards flat, fully supported, tightly butted, and in accordance with the manufacturer's guidance.
 - Rectify all voids or unevenness prior to screeding.
-

2. Installation of Separating Membrane

Membrane Type:

Minimum 500-gauge polyethylene separating membrane.

Installation Method:

- Lay membrane loosely over PIR insulation.
 - Overlap all joints by at least 150 mm and seal with single-sided tape.
 - Turn membrane up perimeter walls, columns, and penetrations above finished screed level.
 - Follow the membrane manufacturer's compatibility guidance for PIR.
-

3. Installation of Underfloor Heating (UFH) Pipework

UFH Pipework Installation:

- Secure pipes to membrane using clip rail, barbed staples, or castellated panels per UFH supplier's instructions.
- Pipes must be fixed securely to prevent flotation or displacement during screeding.
- Allow for movement joints in large bays or areas with construction changes.

Minimum Pipe Cover:

Provide a minimum 30 mm of screed above the highest point of any pipe or conduit.



4. Installation of Perimeter Edge Strip

Material:

Closed-cell polyethylene foam or equivalent.

Dimensions:

- Thickness: 5–10 mm
- Height: Equal to or greater than final screed thickness including UFH cover

Placement:

Install edge strip continuously around perimeter walls, columns, and fixed vertical elements. Ensure no gaps or bridging.

5. Tekcem Tekscreeed Specification

Mix Design (per m³):

- 400 kg Ordinary Portland Cement (CEM I 42.5N)
- 1600 kg 0–4 mm screeding sand (BS EN 13139 fines category 1)
- Tekcem Tekscreeed admixture (refer to latest Tekcem TDS for dosage)
- Water: Adjust to achieve semi-dry consistency (typically 50–60 litres)
- 1 kg polypropylene fibres (recommended for thermal and shrinkage control)

Consistency:

Semi-dry — forms a ball when squeezed without releasing water.

Working Life:

Approximately 45–60 minutes from mixing.

6. Screed Application

Placement:

Place Tekscreeed directly over secured UFH pipework and membrane. Tamp and compact using screed bars to ensure full encapsulation of pipework.

Finish:

Use a plastic float or steel trowel to finish as required.



Screed Thickness:

Application	Minimum Screed Thickness
Domestic/light duty	35 mm total (≥30 mm cover over pipe)
Commercial/heavy duty	40 mm total (≥30 mm cover over pipe)

Compaction:

Ensure thorough compaction throughout to avoid voids and ensure effective thermal conductivity and mechanical performance.

Environmental Conditions:

- Substrate temperature: 5–30 °C
- Ambient RH: <75%

7. Post-Installation, Protection, and UFH Commissioning

Protection:

Protect the screed from direct sunlight, frost, wind, and rapid drying for at least the first 24 hours.

Use appropriate covers (e.g. polythene sheeting) to control moisture loss.

Access:

- Light foot traffic: 12–24 hours
- Full site traffic: ~72 hours depending on site conditions and screed thickness

Underfloor Heating (UFH) Commissioning Protocol – Tekcem Tekscreeed

Compliant with BS EN 1264-4:2009, BS 8203:2001+A1:2009, BS 8204-1:2003+A1:2009

- UFH commissioning must not begin until at least **21 days after screed placement**.
- The initial water flow temperature must **not exceed 25°C or 15°C above the screed surface temperature**, whichever is lower.
- Maintain this temperature for **3 consecutive days**.
- After Day 3, increase the water flow temperature **by a maximum of 5°C per day** until the **design temperature (maximum 55°C)** is reached.
- Once the design temperature is reached, **maintain it for 4 full days**.
- Then, **switch the system off** and allow the screed to **cool naturally** to ambient.



Example Heat-Up Cycle – 50°C Design Flow Temp:

Day	Action
1	Initial switch-on at 25°C
2	Maintain 25°C
3	Maintain 25°C
4	Increase to 30°C
5	Increase to 35°C
6	Increase to 40°C
7	Increase to 45°C
8	Increase to 50°C
9–11	Maintain 50°C
12	Switch off and allow to cool

Post-Commissioning Repairs (if required):

Inspect the screed after cooling. Any cracks may be repaired using **Tekcem SRS** or **Tekcem Screedfix**.

Moisture Testing Before Floor Finishes:

- Floor finishes must not be applied until screed RH $\leq 75\%$.
- RH testing must be performed only after the UFH has been switched off for **at least 48 hours** and the screed has cooled.

8. Limitations

- Minimum 30 mm screed cover must be maintained over pipework.
- The screed must float over the membrane and not bond to PIR insulation or concrete substrate.
- Edge insulation and membrane isolation must be complete before screeding.
- Movement joints must be included where required by floor layout or UFH zoning

9. Disclaimer

This specification is based on Tekcem's expertise and current product knowledge. It is intended as a guide for best practice but does not replace appropriate professional advice, detailed design, or site-specific assessment. Tekcem Ltd accepts no liability for misuse or deviation from the guidance provided. Installers must ensure that the specification is suitable for their particular application and that appropriate quality control and testing is conducted throughout the process.

Tekcem Tekscreeed_Floating_PIR__concrete _with UFH _May2025_R1