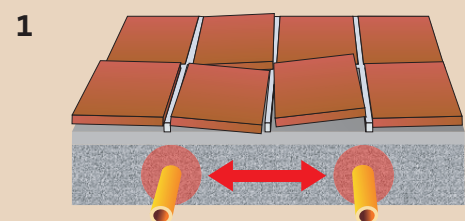


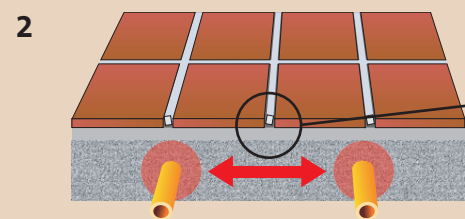
Tiling with under-floor heating or under-tile warming

1 Movement due to thermal expansion and contraction

The screed and the adhesive, being of a similar material, expand at a similar rate to each other. The tiles, however, usually have a slightly lower coefficient of thermal expansion – so for a given temperature rise they will grow proportionately less. The result on the tile-fixing products is twofold:

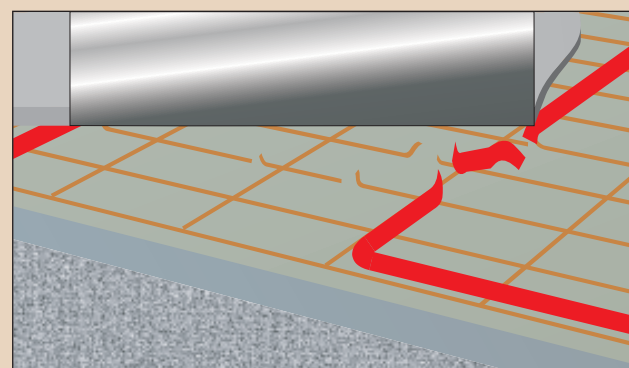


Stresses build at the interface between the tile and the adhesive. At some point this will be too great and the weakest part of the system will yield – usually the bond between the tile and the adhesive.



As the base expands in relation to the tiles they will try to move slightly further apart stretching the grout joints. Cementitious products are inherently weak in tension and the bond onto the tile edge can fail.

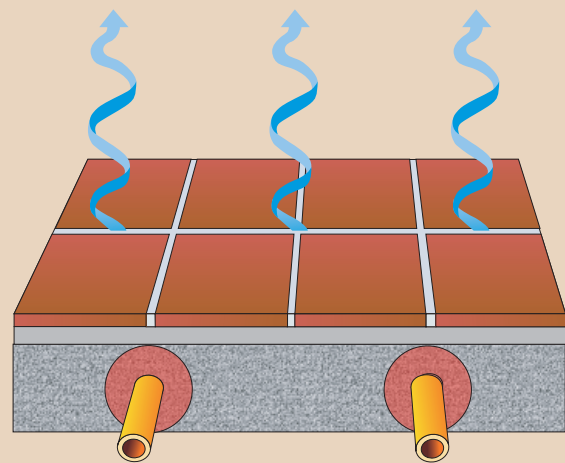
2 Damage to wires from the trowel



One of the most common reasons for problems with the installation of an under-tile warming system is damage made during fitting.

When covering the wires with adhesive it is quite easy to accidentally cut a wire with the trowel.

3 Turning on heating elements too early weakens the adhesive and grout



Cement-based adhesives (and grouts) set hydraulically i.e. water is involved in the hardening reaction.

If the adhesive is allowed to dry out before it has properly hardened it will tend to be weak and crumbly.

It is important that the heating system is off when tiles are fixed and remains off until the adhesive and grout have fully cured.

Tiling onto electrical under-tile warming mats (solid substrates)

Highly polymer-modified adhesives and grouts such as **weber.set rapid SPF** and **weber.joint wide flex** have enough flexibility when set to accommodate the thermally induced movements. When applying an

electrical under-tile warming system, **weber.niv floor** can be used to cover/protect the wires that otherwise could get damaged during application of the adhesive. Electrical systems that are powerful enough to heat

the room are normally buried under a 65 mm screed, which acts as a thermal reservoir. With these systems the adhesive is applied directly to the screed.

Products required

weber.niv floor
weber PR360 or **weber PR301**
weber.set rapid SPF or **weber.set SPF**
weber.joint wide flex

Stage 1: Preparation

Ensure that the floor is rigid, sound, clean, dry and free from any contaminating barrier.

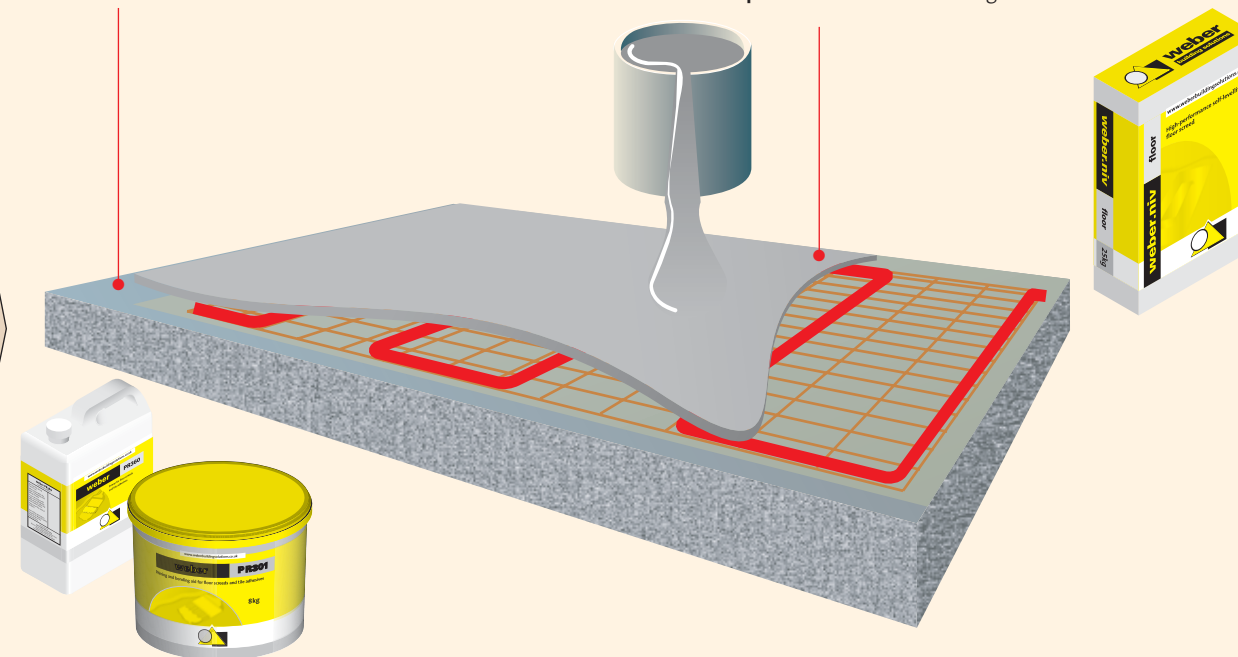
Prime porous and dense substrates with **weber PR360**; prime impervious surfaces with **weber PR301**. Allow to dry for 1 – 2 hours.

Stage 2: Under-tile warming

Install the under-tile warming system in accordance with the manufacturer's instructions and test that it works. Turn off and allow to cool.

Apply **weber.niv floor** self-levelling compound up to 10 mm deep until the warming elements are covered by at least 3 mm. Allow 6 hours before foot traffic.

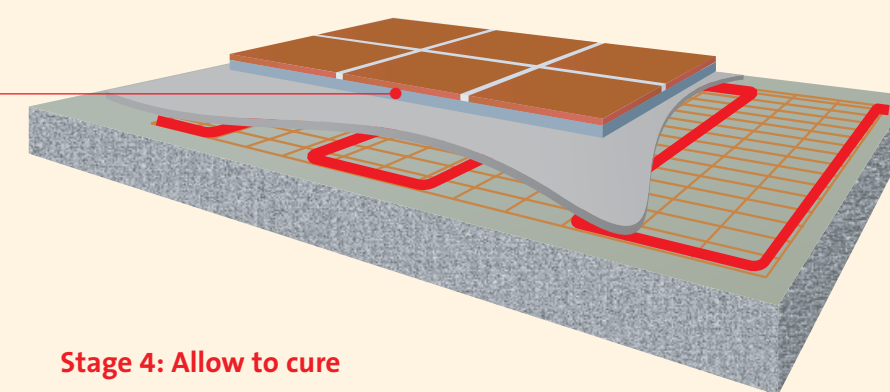
Alternatively, a layer of flexible adhesive can be used to cover the warming elements. Care must be taken not to damage the elements and a rubber trowel should be used. Allow 3 hours to dry if using **weber.set rapid SPF** or 24 hours if using **weber.set SPF**.



Stage 3: Fix the tiles

Fix the tiles with **weber.set rapid SPF** or **weber.set SPF** and allow to cure before grouting.

Grout the joints with **weber.joint wide flex** and allow to set for 24 hours before traffic.



Stage 4: Allow to cure

Keep the heating/warming system turned off for at least 5 days to allow the cement to cure. Bring the system up to its operating temperature gradually in stages over a few days.



For detailed instructions, please refer to the relevant product data sheet. For further information, please contact our Technical Helpline on 01525 722137.

