Pyrotenax in-screed heating cable installation guide

FLOOR HEATING

Materials required

1. Pliers and mesh rolls
2. Tape Measure
3. Insulation Tester 500Volt
4. Flexible conduit (supplied)
5. Wire or tape (fix flexible conduit to mesh)

Installation for **existing slabs** (checklist)

• The whole of the floor heating installation shall be carried out by an approved heating contractor, experienced in this type of work.

• The heating cables shall be Pyrotenax rated at 110°C, Copper Sheathed Mineral Insulated with a Polyethylene covering terminated with Non-Heating MIMS tail and earthing conductor.

• The heating cable shall be fixed in position using metal strips or light gauge mesh, fixed to existing concrete floor.

• Heating cables shall be laid in a 30mm cement screed, with a minimum of 25mm covering the cables plus tile thickness. Cables shall be spaced at 50-150mm intervals.

Installation for **existing timber** (checklist)

• A waterproof membrane should be laid over existing timber floor, and a light gauge reinforcing mesh should be positioned. Heating cables are then fixed to reinforcing mesh.

• Approval should be received from an engineer to ensure foundations and existing floor is able to support the additional weight of screed and tiles.

• Heating cables shall be laid in a 40mm cement screed, with a minimum of 25mm covering the cables plus tile thickness. Cables shall be spaced at 50-150mm intervals.

Step 1.

The **in-screed** heater should be tested with a 500V insulation tester, for insulation and continuity, prior to cable laying. The heater should have an infinity insulation value.

Step 2.

Determine the starting point(s) on the plan ensuring both cold tails return to this point, allowing for the cold tail connection(s).

Step 3

Lay the cable in accordance with the required **spacing**. See below how to calculate spacing.

It is recommended that the cable be secured to the mesh at 400-500mm intervals.

Step 4.

The conduit should be slid over the cold tails when they are in position.

Cable spacing instructions

Cable spacing is determined by the available floor area and heater length and can vary from 150mm to 250mm.
A simple formula is used to calculate the correct spacing of the elements to cover the area involved.

Cable spacing formula

$$\frac{\text{heated floor area m}^2 \text{ X } 1000}{\text{element length (m)}}$$

Note: Heated floor area delete the distance cables start from walls. eg: 200mm each end.

Example: Room size = 6.0m X 6.1m
= 36.6m^2

Select 6.26kW heating element 209m

$$\frac{SP = A \times 1000}{L}$$

$$\frac{5.6 \times 5.7 \times 1000}{209}$$

= 152mm spacing

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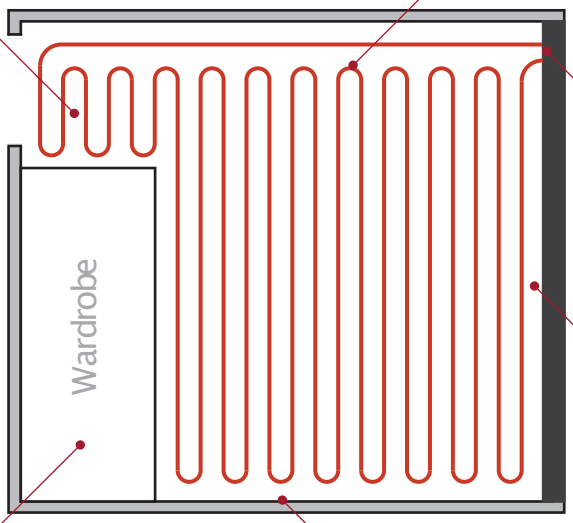
Cable bends

The radius of bends should not be too severe and a minimum be 6 times the cable diameter.

Adjacent cable runs

Adjacent cable runs should never be closer than 50mm.



Cold tail

Cold tail/heating joints should be spaced at least 50mm apart

Outside walls

The cable should be installed 300mm from outside walls

Partition walls

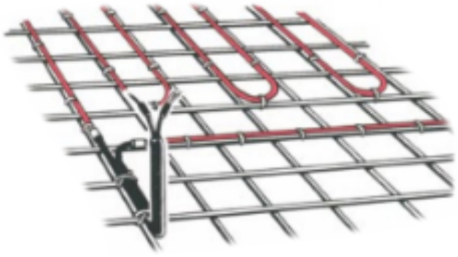
Cables must not be installed under or within 75mm of built in joinery, kitchen fittings, baths, showers, vanities, or through expansion joints.

Partition walls

Cables must not be installed under or within 75mm of partition walls

Attention

- The heating cable runs should not touch or cross, or be closer than 50mm, and must not be in direct contact with any insulation material.
- Cables must not be installed through any expansion joints or construction joints (unless special design considerations for the cable have been made).
- All electrical work must be performed by an authorised electrician.



(Above) If the mesh grid size is not compatible with the required spacing, an approximation of the cable runs is required - as near as possible to the calculated spacing.