

## DESCRIPTION



T2Blue+ is a floor heating cable with constant power output. It is a pre-terminated, dual conductor heater with a 2.5m cold lead attached at one end.

The heating cable should be embedded in a layer of filler (typically 15-30mm) but can also be fitted into the Raychem Membranes or embedded deeper in the floor construction (screed of 30-50mm). Note that the higher the cable is positioned in the floor construction, the more energy efficient it is to regulate the cable.

T2Blue+ is the ideal floor heating system for installations in newly constructed buildings as well as for renovations.

The T2Blue+ range exists in a variant without thermostat and in an EcoDesign compliant variant containing the SENZ WIFI programmable electronic timer thermostat with the following functions:

- Room temperature control, with open window detection
- Distance control
- Adaptive start control
- Working time limitation

The variant without thermostat can be completed with one of the Raychem thermostats to make the set EcoDesign compliant (select the SENZ WIFI, GREEN LEAF or NRG-DM and make the cable EcoDesign compliant).

For more information on the thermostats, refer to the Commissioning sheet (EU2550) included in the T2Blue+ package and freely available on [chemelex.com](http://chemelex.com).

The T2Blue+ range consists of a range of cables with a power output of 7W/m and a range of cables with a power output of 12W/m.



## ADVANTAGES

### The design phase

Easy design:

- One cold lead connection due to dual wire cable design
- Different outputs per m<sup>2</sup> can be obtained by different heating cable spacing (min spacing is 50 mm)
- Flexible to adapt to all room shapes

Compatible with all stable subfloors e.g. concrete, anhydrite, asphalt, plaster, ceramic underfloor, wooden subfloors.

The following floorings can be applied: Tiles, marble, stones with maximum thickness of 30 mm and minimal thermal conductivity of 1,0 W/(mK).

Other acceptable floor coverings are: Wooden floors, engineered wooden floors, vinyl and engineered vinyl floors, and other temperature sensitive floors can be installed under certain conditions:

- The floor type must be compatible with heated floors
- The thermal resistance of the floor construction (R-value) should not exceed 0,15 m<sup>2</sup>K/W
- The cable must be embedded in a layer of filler material of 15-30 mm
- The installed power should not exceed 100W/m<sup>2</sup>
- The floor should be controlled by a thermostat with floor sensor
- The thermostat that controls the T2Blue+ should operate in **Floor Sensing Mode** or in **Room Sensing Mode with Floor Limiter**
- The temperature limit should be set to 27°C (or to a different temperature in accordance with the floor manufacturer)
- There shall be no thermal barrier on top of the floor (like carpet or furniture)

### The installation phase

T2Blue+ only has one cable connection, thanks to the dual conductor cable construction, which enables easy lay-out and installation. T2Blue+ is easy to adapt to special room shapes or obstacles. Spacing can be varied to a minimum of 50 mm.

### The application

EcoDesign compatible and extra low energy consumption when installed in combination with one of the following Raychem thermostats: NRG-DM, GREEN LEAF, SENZ-WIFI (for more info on EcoDesign compatibility see EU2550).

No measurable electro-magnetic fields thanks to the dual conductor heating cable construction.

Long life and maintenance free.

## TECHNICAL DATA

Nominal power	7W/m and 12W/m
Voltage	230 Vac
Max. exposure temperature	+90°C
Min. installation temperature	+5°C
Length of cold lead cable	2.5 m
Dimensions	4.6 to 5.0 mm diameter
Min. cable spacing	50 mm
Min. bending radius	30 mm
RCD	30 mA
Construction	PFAS free cable with LS0H outer jacket
Certificates	VDE, CE-mark, UKCA-mark

## ORDERING INFORMATION

Product Name	Part Number	Description
SENZ-WIFI	1244-017778	EcoDesign compatible WIFI enabled programmable touchscreen thermostat combining app enabled remote control, ease of use and aesthetic design for maximum comfort from your underfloor heating
NRG-DM	1244-015152	EcoDesign compatible intuitive electronic thermostat with flexible weekly schedule and 1.8" display. Easy to use and program
GREEN LEAF	1244-017312	EcoDesign compatible attractive electronic thermostat with 4 event weekly schedule
T2Blue+ Cable Clip	1244-022839	Cable clips to install the T2Blue+ cable on a 2.5mm reinforcement bar
R-MEM-S-5M-ROLL	2000005438	Roll of 5m of Raychem anti-fracture membrane
R-MEM-PB150	2000005439	Proband 150 waterproofing elastic polyethylene ribbon
R-MEM-PBK	2000005440	Proband Koll mono component sealant for sealing waterproof of the PROBAND tape
U-ACC-PP-01	6012-8949540	Gluestick 10 pc/pack
U-ACC-PP-02	6012-8949541	Sensortube ø 10 mm/2,5 m
U-ACC-PP-05	503052-000	Melting glue sticks 72 pcs/1,40 kg/package
U-ACC-MM-10	476660-000	Metal mesh galvanized 10 m
U-ACC-MM-25	726604-000	Metal mesh galvanized 25 m
U-ACC-FH-CW-SP	1244-008869	Repair kit for T2Blue+

## DESIGN TABLE

T2Blue+ 7W/m products are available in heating cable lengths of 15 to 180m.

T2Blue+ 7 W	P <sup>1</sup> Output (W)	L <sup>2</sup> Length (m)	R <sup>3</sup> Heating cable resistance range @ 20°C	A <sup>4</sup> Area (m <sup>2</sup> )				
				50W/m <sup>2</sup>	60W/m <sup>2</sup>	70W/m <sup>2</sup>	90W/m <sup>2</sup>	100W/m <sup>2</sup>
T2Blue+ 7-15 m	105	15	478.6-554.2	2,1	1,8	1,5	1,2	1,1
T2Blue+ 7-20 m	140	20	359.0-415.6	2,8	2,4	2,0	1,6	1,4
T2Blue+ 7-25 m	175	25	287.2-332.5	3,5	3,0	2,5	2,0	1,8
T2Blue+ 7-30 m	210	30	239.3-277.1	4,2	3,6	3,0	2,4	2,1
T2Blue+ 7-40 m	280	40	179.5-207.8	5,6	4,8	4,0	3,2	2,8
T2Blue+ 7-50 m	350	50	143.6-166.3	7,0	6,0	5,0	4,0	3,5
T2Blue+ 7-60 m	420	60	119.7-138.5	8,4	7,2	6,0	4,8	4,2
T2Blue+ 7-80 m	560	80	89.7-103.9	11,2	9,6	8,0	6,4	5,6
T2Blue+ 7-100 m	700	100	71.8-83.1	14,0	12,0	10,0	8,0	7,0
T2Blue+ 7-120 m	840	120	59.8-69.3	16,8	14,4	12,0	9,6	8,4
T2Blue+ 7-140 m	980	140	51.3-59.4	19,6	16,8	14,0	11,2	9,8
T2Blue+ 7-160 m	1120	160	44.9-52.0	22,4	19,2	16,0	12,8	11,2
T2Blue+ 7-180 m	1260	180	39.9-46.2	25,2	21,6	18,0	14,4	12,6
X <sup>5</sup> (mm) = (A/L) x 1000				+/- 140	+/- 120	+/- 100	+/- 80	+/- 70

T2Blue+ 12W/m products are available in heating cable lengths of 10 to 180m.

T2Blue+ 12 W	P <sup>1</sup> Output (W)	L <sup>2</sup> Length (m)	R <sup>3</sup> Heating cable resistance range @ 20°C	A <sup>4</sup> Area (m <sup>2</sup> )			
				85W/m <sup>2</sup>	100W/m <sup>2</sup>	120W/m <sup>2</sup>	150W/m <sup>2</sup>
T2Blue+ 12-10 m	120	10	418.8-484.9	1,4	1,2	1,0	0,8
T2Blue+ 12-15 m	180	15	269.2-311.7	2,1	1,8	1,5	1,2
T2Blue+ 12-20 m	240	20	229.7-266.0	2,8	2,4	2,0	1,6
T2Blue+ 12-25 m	300	25	167.5-194.0	3,6	3,0	2,5	2,0
T2Blue+ 12-30 m	360	30	134.6-155.9	4,3	3,6	3,0	2,4
T2Blue+ 12-40 m	480	40	114.9-133.0	5,7	4,8	4,0	3,2
T2Blue+ 12-50 m	600	50	83.8-97.0	7,1	6,0	5,0	4,0
T2Blue+ 12-60 m	720	60	67.3-77.9	8,5	7,2	6,0	4,8
T2Blue+ 12-80 m	960	80	57.4-66.5	11,4	9,6	8,0	6,4
T2Blue+ 12-100 m	1200	100	41.9-48.5	14,2	12,0	10,0	8,0
T2Blue+ 12-120 m	1440	120	33.7-39.0	17,0	14,4	12,0	9,6
T2Blue+ 12-140 m	1680	140	31.0-35.9	19,9	16,8	14,0	11,2
T2Blue+ 12-160 m	1920	160	26.2-30.3	22,7	19,2	16,0	12,8
T2Blue+ 12-180 m	2160	180	23.3-26.9	25,6	21,6	18,0	14,4
X <sup>5</sup> (mm) = (A/L) x 1000				+/- 140	+/- 120	+/- 100	+/- 80

## UNDERFLOOR PREPARATION AND INSTALLATION INSTRUCTION

The subfloor should be clean, stable and rigid, without cracks or adhesion-reducing substrates. Cracks are to be filled in prior to installation.

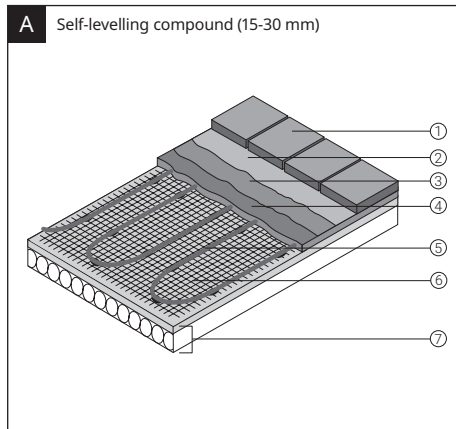
Ensure subfloor is level. When using cement plaster and anhydrite plaster, ensure that the floor has dried sufficiently according to manufacturer's instructions.

The heating cable should not be installed under bath tubs, shower cabins or surface covering furniture. The heating cable should not be installed where holes will be drilled in the floor.

T2Blue+ heating cable needs to be installed in a layer of filler (typically 15-30mm). It should not be installed directly in tile adhesive unless it is embedded in the Raychem Membrane (see installation instructions of the Membrane for more details).

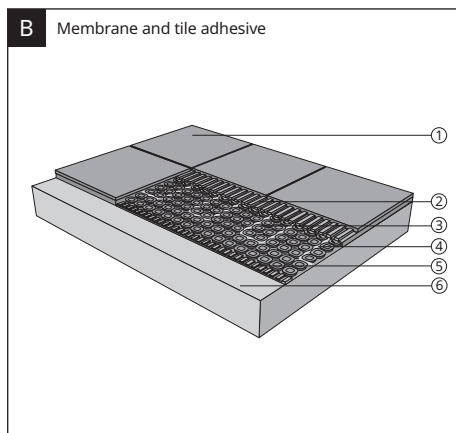
T2Blue+ should not be embedded in EPS cement screed or any insulating material.

Recommended installation methods:



### Laying in self leveling compound (15-30 mm) – Recommended floor construction 1

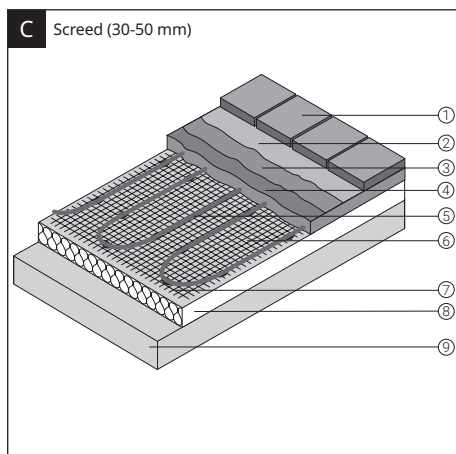
1. Tile floor covering (tiles or natural stone)
2. Tile adhesive using a appropriate comb depending on the tile size
3. Watertight layer (optional for wet areas)
4. Special (self-levelling) mortar for underfloor heating systems ( $\geq 15$  mm)
5. **T2Blue+ 7 W/m or T2Blue+ 12 W/m**
6. Metal mesh (optional only needed for wooden combustable subfloors)
7. Existing floor (tiles, wood, PVC, ...) with thermal insulation



### Laying in membrane and tile adhesive – Recommended floor construction 2

1. Tile floor covering (tiles or natural stone)
2. Tile adhesive (fill the membrane cavities using the flat side of the trowel and then using the appropriate comb depending on the tile size)
3. **T2Blue+ 7 W/m or T2Blue+ 12 W/m**
4. Membrane
5. Tile adhesive
6. Existing floor (tiles, wood, PVC, ...) with thermal insulation

If really not possible otherwise, the T2Blue+ cable can be embedded deeper in the floor construction but be aware that this installation method is not the preferred installation method as this makes the heating slower to react which will result in a higher energy consumption of the heating system.



### Laying in screed (30-50 mm) – Floor construction resulting in higher energy consumption

1. Tile floor covering (tiles or natural stone)
2. Tile adhesive using a appropriate comb depending on the tile size
3. Watertight layer (optional for wet areas)
4. Special screed for underfloor heating systems (30 – 50 mm)
5. **T2Blue+ heating cable**
6. Metal/mesh
7. Plastic foil
8. High density polystyrene insulation (thickness 30 – 50 mm)
9. Subfloor construction (concrete, tiles, wood, PVC, ...) without thermal insulation

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