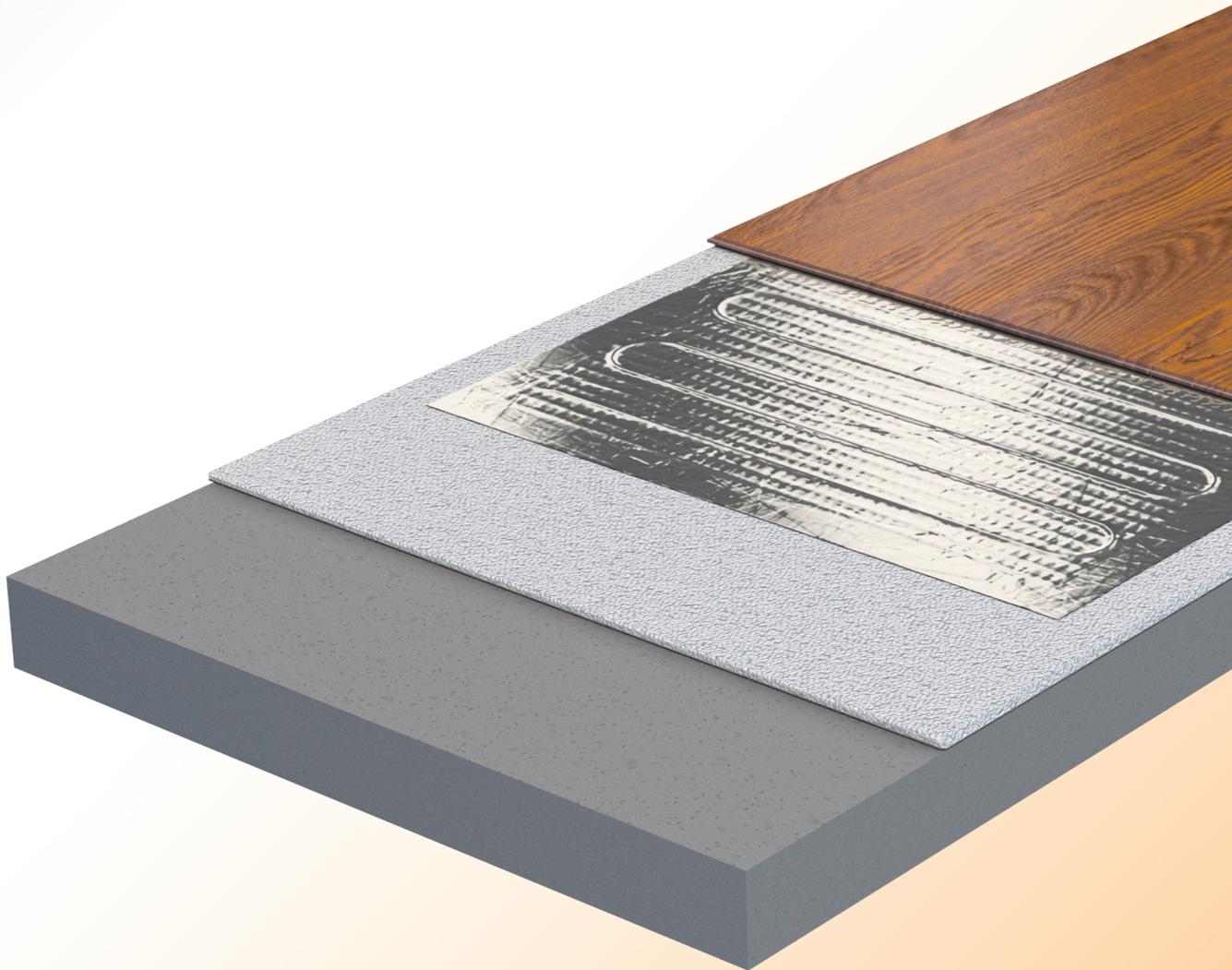


**Uponor**

## **Uponor Comfort E AL-Foil Mat**



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Uponor reserves the right to make changes, without prior notification, to the specification of incorporated components in line with its policy of continuous improvement and development.

# Important notes on the intended use, safety and warranty

## Intended use

Uponor Comfort E is an electric underfloor heating system that is used for heating rooms and tile warming. Installation should be conducted in accordance with local building regulations and laws.

All installations must be carried out on sound subfloors by approved installers. Any other use apart from its intended purpose will void any manufacturing warranty.

## Uponor Declaration of Warranty for Comfort E AL-Foil Mat

Obtain up to a 10-year warranty on the Uponor Comfort E system. This also covers any damages to the flooring during repair.

The Uponor Declaration of Warranty is based on the confirmation that all Uponor products have been installed by an installation specialist in accordance with the relevant assembly instructions, in compliance with the relevant laws, regulations and the established rules of technology.

### How to obtain the Uponor Declaration of Warranty :

1. You must be an installation specialist, who has installed the appropriate Uponor system for which the Uponor Declaration of Warranty is to be issued.
2. The products are installed no more than 3 months ago.
3. Please ensure you have read and understood the "Uponor Declaration of Warranty" shown above. Following this, complete the "Uponor Comfort E Installation and Handover Protocol" found on page 7. The documents should be sent by e-mail ([warranty.comfort-e@uponor.com](mailto:warranty.comfort-e@uponor.com)) to Uponor.
4. Within a few working days, you will receive the original Uponor Declaration of Warranty.

If Uponor products are assembled or mixed with third-party products within an installation, no Uponor Declaration of Warranty can be issued or it will lose its validity in retrospect.

### Important safety instructions for installation

- The heating mats may only be operated in combination with a room temperature thermostat with a fitted floor sensor.
- The heating mats must be connected to a 230 V mains voltage supply. A residual current circuit breaker with a tripping current of 30 mA has to be installed.
- When laying the heating mat, a distance of at least 60 mm to conductive building surfaces (such as water pipes) must be observed.
- The heating mats must not be laid underneath fixed furniture or sanitaryware, which stand directly and without feet on the floor in order to avoid overheating during operation.
- The heating cables must not be passed through expansion joints or below insulation material.
- For the heating cables, a minimum bending radius of 30 mm must not be exceeded.
- The heating cables must not be kinked or otherwise damaged during installation. Crossing of the heating cables is not permitted.
- If several heating mats are installed in a room, they must only be connected in parallel to the mains voltage. Never connect in series!
- If several heating mats are installed on to one thermostat, please ensure the maximum current does not exceed 16 amps.
- The laying temperature must be at least 5 ° C.

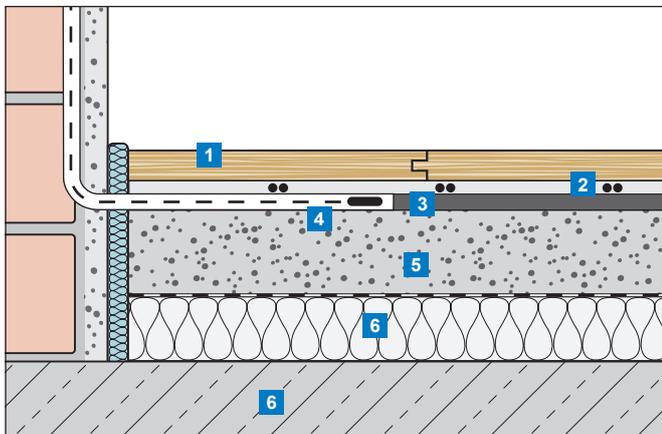


### Attention! Risk of electric shock!

The Uponor Comfort E electric floor heating is operated with a 230 V AC voltage. Connections to the power supply network must be carried out by a qualified electrician.

# System description

## Floor construction (Example)



- 1** Flooring (e.g. parquet, laminate)
- 2** Uponor Comfort E AL-foil mats (ca. 2 mm)
- 3** Uponor Comfort E AL-foil insulation board (5 mm)
- 4** Floor sensor in protective tube
- 5** Existing screed
- 6** Insulation layer with PE foil covering
- 7** Load-bearing substrate (e.g. concrete)

## Technical specifications

Technical specifications Uponor Comfort E AL-FOIL MAT	
Nominal voltage	230 V, AC
Rated capacity	140 W/m <sup>2</sup>
Circuit breaker <sup>1)</sup> with C-Characteristics	Max. 16 A
Min. bending radius	30 mm
Min. installation distance	60 mm
Max. operating temperature	+90 °C
Min. installation temperature	+5 °C
Conductor cross section of the connection cable	3 x 0,75 mm <sup>2</sup>
Length of the connection cable	3,0 m
Approvals	CE and BEAB

<sup>1)</sup> When several heating mats are connected to a fuse box, the total connection current of the mats is limited to max. 16 A.

## Design data

Heating mat type	Laying area (m <sup>2</sup> )	Heating mat length (m)	Heating mat capacity (W)	Heating mat resistance <sup>1</sup> (Ω)
UPONOR COMFORT E AL-FOIL MAT 140-1	1	2	140	378
UPONOR COMFORT E AL-FOIL MAT 140-2	2	4	280	189
UPONOR COMFORT E AL-FOIL MAT 140-3	3	6	420	126
UPONOR COMFORT E AL-FOIL MAT 140-4	4	8	560	94
UPONOR COMFORT E AL-FOIL MAT 140-5	5	10	700	76
UPONOR COMFORT E AL-FOIL MAT 140-6	6	12	840	63
UPONOR COMFORT E AL-FOIL MAT 140-7	7	14	980	54
UPONOR COMFORT E AL-FOIL MAT 140-8	8	16	1120	47
UPONOR COMFORT E AL-FOIL MAT 140-9	9	18	1260	42
UPONOR COMFORT E AL-FOIL MAT 140-10	10	20	1400	38

<sup>1)</sup> Tolerance -5% to +10%

# Installation and commissioning

## Installation instructions

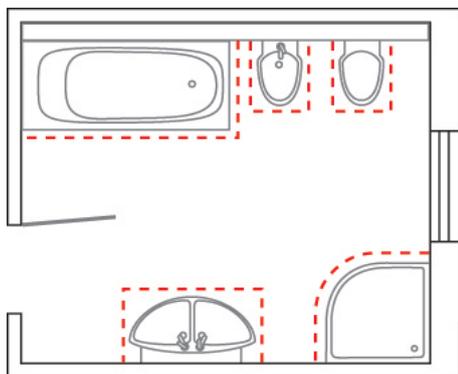
### General information

The heating cables must not be shortened or come into contact with any other cables. It is not permissible to lay the heating cables over movement joints. The connection cable must be laid in a protective tube when crossing movement joints. No heating cables may be installed underneath floor standing sanitaryware. Likewise, the laying under fixed furniture without legs such as wardrobes is not allowed, as this can lead to overheating of the mat.

### Planning notes

The existing floor must be structural, flat and free from damage. If necessary, the sub-floor must be levelled and or repaired for the installation of the Comfort E system. Before laying commences, the relevant standards and guidelines for the floor construction must be known and observed. Please note the warranty claim will be void if installed incorrectly. When planning, the position of the heating mats, the floor temperature sensor and the room temperature controller should be entered into the construction drawing.

The arrangement of existing and future furnishings, such as floor-standing wardrobes, cabinets, etc., must be taken into account.



### Important!

The heating mats must not be shortened and must therefore be ordered in accordance with the room dimensions, taking into account any fixed furniture.

### Preparation of the substrate

It is recommended to lay the Uponor Comfort E AL-foil underfloor heating on the Uponor Comfort E AL-foil insulation board. This will ensure maximum heat output of your system and reduce any step noise. If necessary, a PE foil should be laid above the insulation board to stop any ascending moisture. A direct laying of the electric floor heating on the existing surface without the Uponor Comfort E AL-foil insulation board is not recommended.

### Installation of room thermostat and floor temperature sensor

For the installation of the room temperature thermostat, a 230 V AC power supply must be provided to a suitable location with an adequate sized backbox (minimum 35mm). From there, two protective tubes for the connection cable and the floor temperature sensor cable must be cut into the wall. The protective tube for the floor temperature sensor must also be installed in to the floor and finished flush with the surface of the Comfort E AL-foil insulation board. The heating mat connection cable and floor temperature sensor cable must not be installed in the same protective tube! If several heating mats are to be connected in parallel to the room temperature controller, a flush-mounted junction box must be installed. A residual current circuit breaker (30 mA) must be installed for safety. Separate instructions for the room temperature controller must be observed.

### Floor coverings

The Uponor Comfort E AL-foil mat is designed for dry-laid flooring (e.g. parquet and laminate). The suitability of the chosen floor coverings must be checked by the respective manufacturer for use with electrical underfloor heating. In addition, any further specifications from the manufacturer have to be observed. In the area of the installed heating mats, no fixings may be inserted into the floor. Heat insulating floor coverings such as thick carpets are not permitted in areas where electric floor heating is installed, since this can lead to overheating.

## Step by Step Installation

1. Compare the delivered materials with your order
2. Measure for any damage with a continuity test across the two conductor wires by placing one probe on the earth cable and the other on the live cable, looking for no continuity. Repeat this step with the neutral and earth cable.
3. Using a multimeter tester set to check for resistance, place one probe on the live cable and the second probe on the neutral cable, ensuring that it does not come into contact with the earth wire. Record the heating mat resistance in the Uponor Comfort E installation and handover protocol form and compare the values supplied with the mat.
4. Lay the Uponor Comfort E AL-foil insulation board onto a level and clean substrate. To protect the floor covering against ascending moisture, an additional PE foil on top of the insulation layer may be necessary.
5. Install the protective tubes, the back box and, if necessary, the junction box in the wall. Lay the sensor protective tube between two heating cables flush with the surface of the insulation boards. If necessary, the substrate has to be cut open. Insert the floor temperature sensor and the cable into the sensor protective tube.
6. Roll out the Comfort E AL-foil heating mats according to the layout plan. For change of direction, cut the aluminium foil of the underfloor heating mat with scissors, ensuring you do not sever the cable. Any joints should be covered using the supplied AL-foil tape.
7. Insert the cold cable through the protective tube into the flush-mounted back box or into the flush-mounted junction box and mark the cable ends of the respective heating mat.
8. Once the cable mat is installed, re-measure the continuity and resistance as per steps 2 and 3.
9. Enter the measured values into the enclosed Uponor Comfort E installation and handover protocol.
10. Once the test procedure has been completed, lay your desired flooring in accordance with the flooring manufacturer.
11. Following the laying of the floor covering, a final test is required in accordance with steps 2 and 3. Enter the measured values into the enclosed Uponor Comfort E installation and handover protocol. To receive the Uponor product warranty, all measurements must be documented in the Uponor Comfort E installation and handover protocol. This protocol has to be attached to the warranty request.
12. Connect the supply cable of the heating mats as well as the floor temperature sensor to the room temperature thermostat and connect it to the 230 V power supply. Observe the additional installation and operating instructions of the room temperature thermostat.



### Attention! Risk of electric shock!

The Uponor Comfort E electric floor heating is operated with a 230 V AC voltage. Connections to the power supply network have only to be carried out by qualified electrician.

## Commissioning

Carry out a function test by turning on the room temperature thermostat ensuring that the floor sufficiently heats. Please ensure the thermostat is set to a maximum floor temperature of 27 degrees.

The heating system can now be handed over to the client or the user. In the handover you should include:

- The installation plan, on which the number and position of the individual heating mats (including the respective heating capacities) as well as the location of the junction boxes, the floor temperature sensor and the room temperature thermostat are located.

- The assembly and operating instructions.
- The Uponor Comfort E installation and handover protocol.

The documents must be stored carefully and must be available at any time for warranty issues or changes to your system.

### Attention!

In the area of the installed heating mats, no fixings may be inserted into the floor.

# Uponor Comfort E installation and handover protocol\*

Building project / address

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Specialist for installation and 230 V connection

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Stick on product labels here

Stick on product labels here

Compare the values entered in the table below with the factory default values according to the table "Design data"

Resistance and insulation measurements		Before laying the heating mats		After laying the heating mats / Before laying the covering		After laying the covering	
Room no. / designation	Item no the heating mat	Heating mat resistance <sup>1)</sup> (Ω)	Insulation resistance <sup>2)</sup> (MΩ)	Heating mat resistance <sup>1)</sup> (Ω)	Insulation resistance <sup>2)</sup> (MΩ)	Heating mat resistance <sup>1)</sup> (Ω)	Insulation resistance <sup>2)</sup> (MΩ)

<sup>1)</sup> Tolerance -5% to +10%    <sup>2)</sup> Minimum isolation resistance 10 MΩ

The Uponor Comfort E electric underfloorheating has been professionally installed in accordance with the manufacturer's instructions, connected to the 230 V power network and handed over fully functional with the following documents:

- Installation and operating instructions
- Installation photos
- Installation plan/ drawing
- Comfort E installation and handover protocol

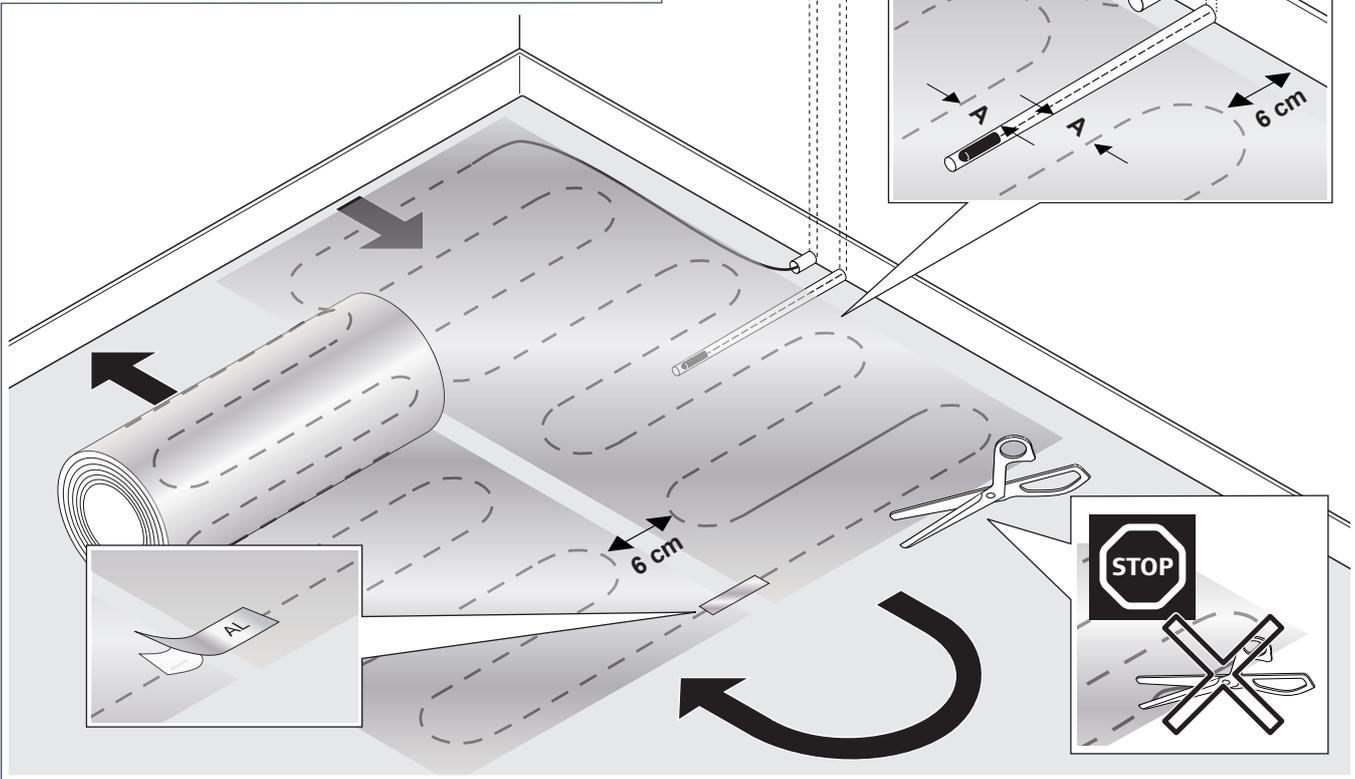
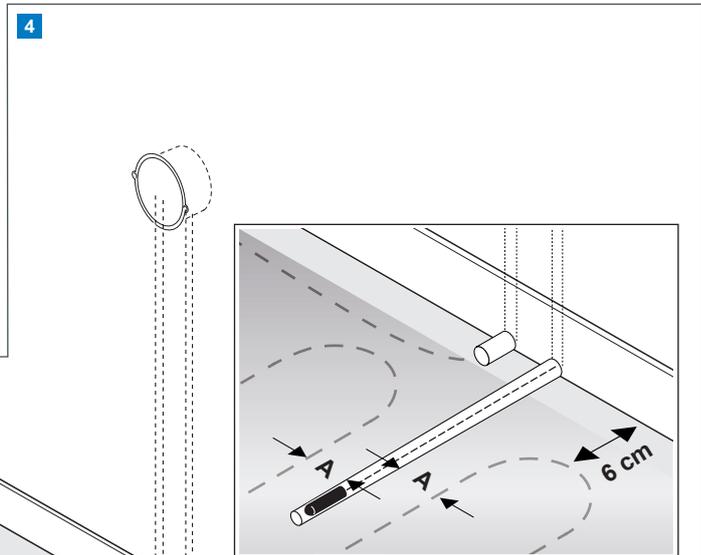
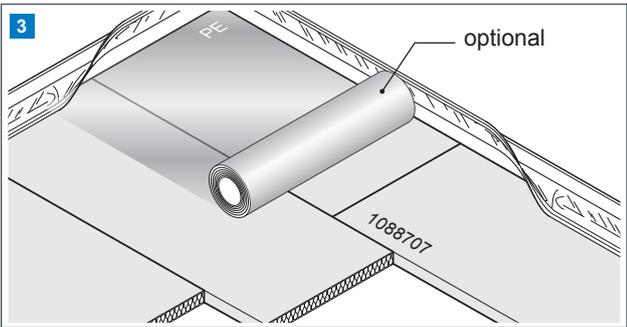
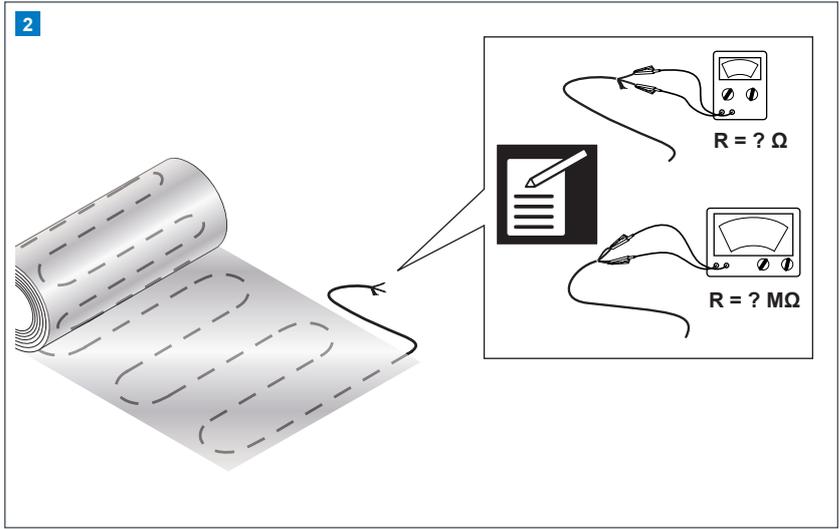
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Location, date

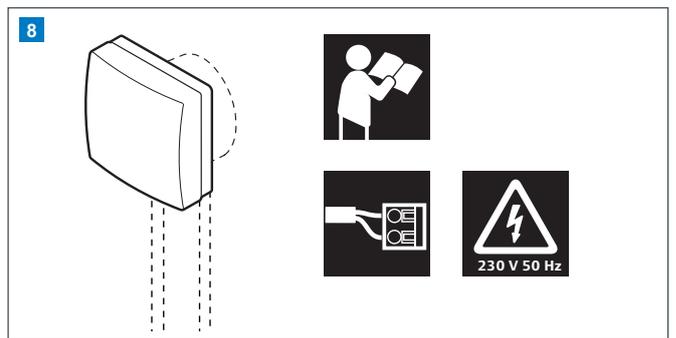
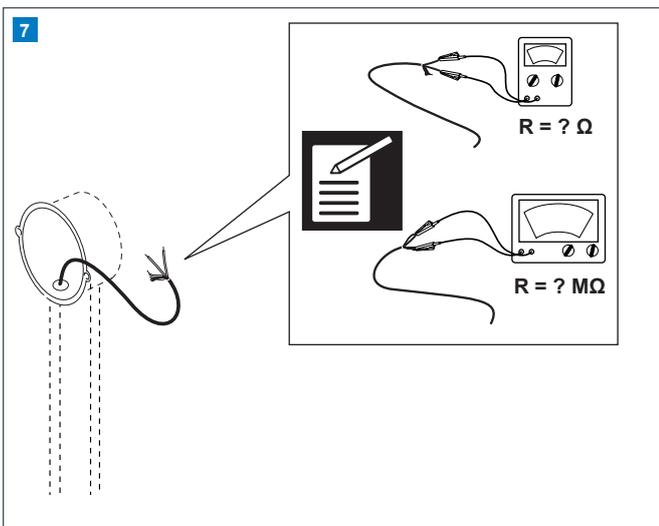
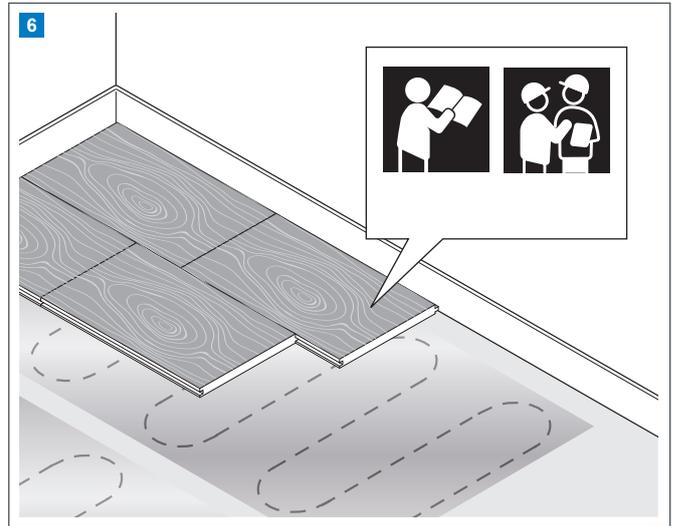
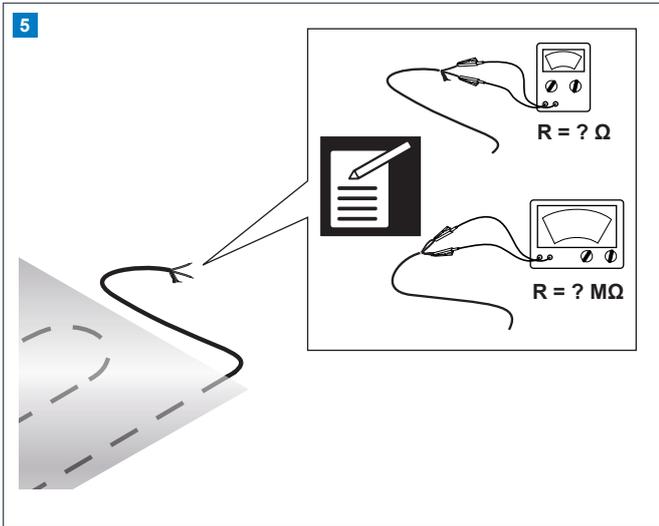
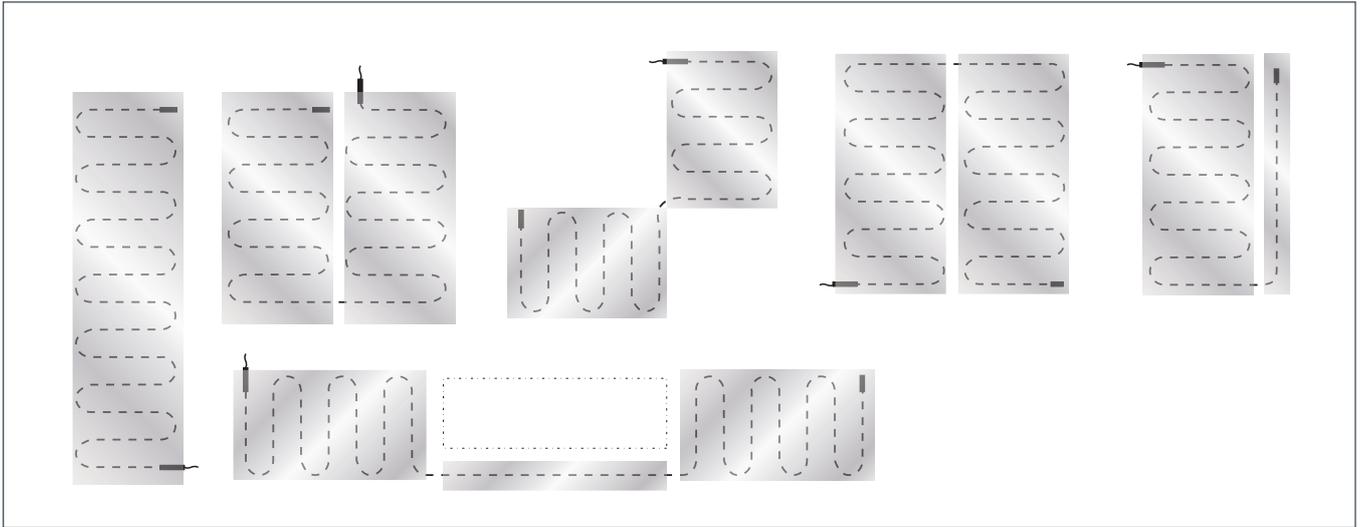
\_\_\_\_\_  
Signature Contractor / qualified electrical installer

\_\_\_\_\_  
Location, date

\_\_\_\_\_  
Signature customer / building owner

\* To receive the Uponor product warranty, all measurements must be documented in the Uponor Comfort E installation and handover protocol. This protocol has to be attached to the warranty request.





More information  
about Uponor  
Comfort E



# Uponor

**Uponor UK**

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1090641\_08/2017\_MLD

Producer: KAL

Uponor reserves the right to make changes, without prior notification, to the specification of incorporated components in line with its policy of continuous improvement and development.



[www.uponor.co.uk](http://www.uponor.co.uk)